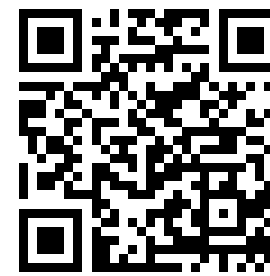

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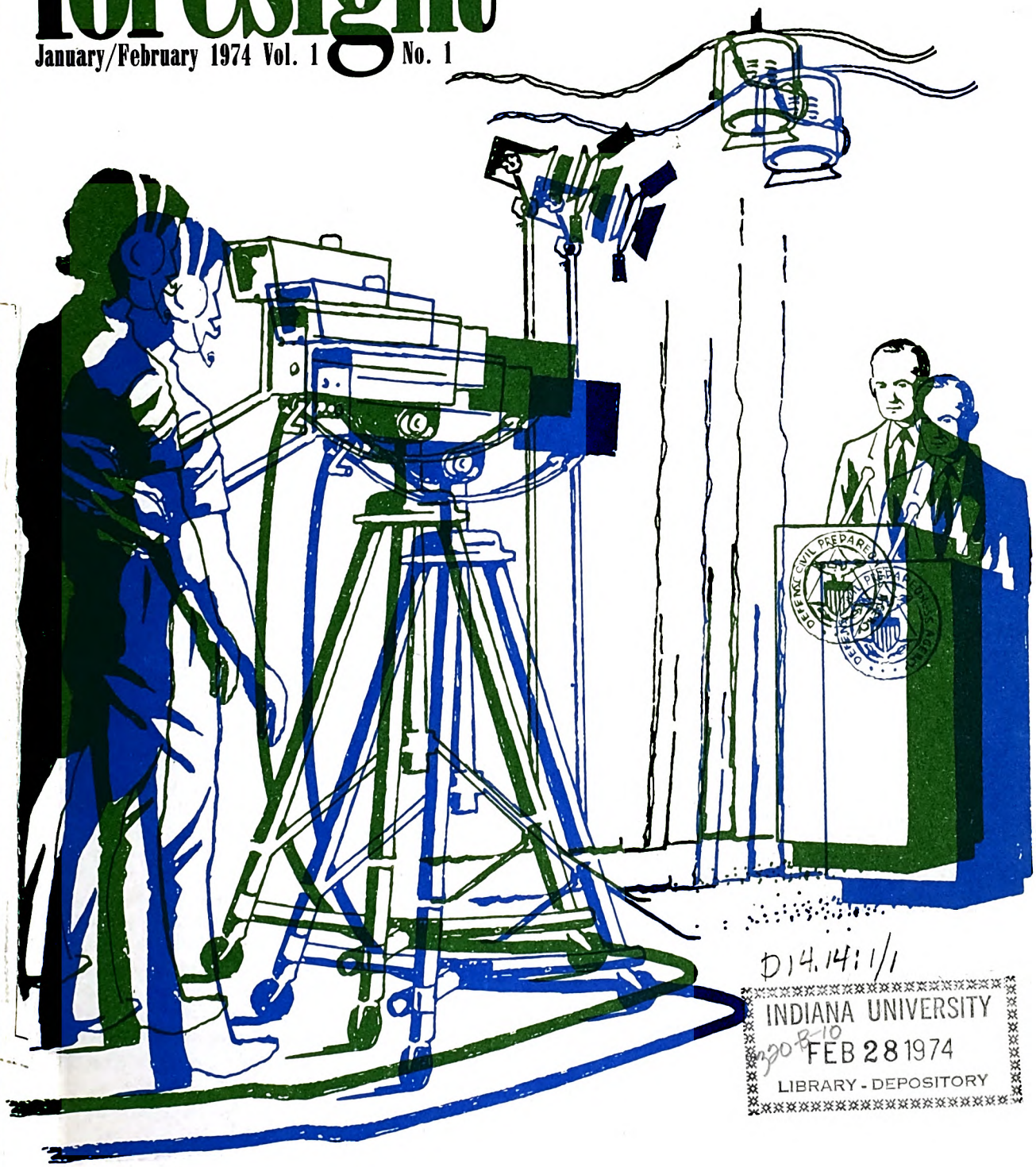

DEFENSE CIVIL PREPAREDNESS AGENCY / THE PENTAGON / WASHINGTON, D.C. 20301

viewpoint

This is the first issue of FORESIGHT.

We hope you'll look forward to each issue.

Our purpose is to inform and to motivate—with a continuing objective: the objective of ever-increasing readiness by civil government throughout the United States to deal with any type of disaster.

FORESIGHT is national in scope, replacing Regional DCPA newsletters, and absorbing the DCPA periodical, "Response."

FORESIGHT will cover a wide range of safety and readiness activity, and is directed to a large and diverse audience both in the public and private sector.

We've felt for a long time that people everywhere who are responsible in one way or another for the public safety have been getting relevant information only in bits and pieces. We believe FORESIGHT will meet a long-term need in "getting it all together."

As with most projects relating to so many people, and with so many activities that need to be reported, we can't do the job alone. The magazine must be a product of give-and-take. Our editor and staff need your story tips and photos—your evaluations—your criticisms and suggestions.

We in DCPA will do our best to make FORESIGHT useful: useful to some of you in developing your capabilities to protect people and property; and useful to others in understanding the "why" and the needs of civil preparedness.

We hope you like it.

John E. Davis

John E. Davis
Director

They're saving more lives

By ELBERT YEE

When political action saves a mayor's career, that's not news. But when political action is credited with saving his life, that's good news—for everyone.

When Portland Mayor Terry D. Schrunk collapsed at work with a severe heart attack, county officials immediately administered first aid, preserving the spark that made possible the successful use of the sophisticated cardiac equipment of the ambulance crew, according to *The Oregonian*.

"The ambulance that answered the call to attend Mayor Schrunk was equipped with a special resuscitator, a portable electrocardiograph and other equipment and drugs intended for such an emergency," the newspaper reported. "The attendants had been trained in a special coronary care course instituted in Portland only three years ago."

LIFESAVING PRACTICE—A trained para-medic helps a "victim" of a simulated airplane crash near Chicago's O'Hare International Airport. The action was part of an exercise, Operation LIBRA, involving five hospitals and emergency service personnel and equipment from 18 Chicago suburban communities in a test of the disaster plans of the area's newly formed Metropolitan Mutual Aid Disaster Committee.

Other Examples Cited

This lifesaving incident is not an isolated case.

In northeastern Tennessee, 13 ambulance attendants, who had just completed an intensive Basic Course for Emergency Medical Technicians-Ambulance, were credited with saving the lives of 15 people who were seriously injured in a bus-truck accident. *(concluded on page 14)*

foresight

January-February 1974 vol. 1, no. 1

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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Director, Information Services Office

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

John M. Connor
Production

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

Ohio State says 'Thanks'

On the tenth anniversary of its founding, Ohio State University's world-famed Disaster Research Center paid tribute to the Defense Civil Preparedness Agency for unstinting support of the Center's studies of emergency organizations and disaster operations.

"If there is one organization that has been responsible for the creation and existence of the Center over the last decade, it is DCPA," the Center emphasized in a special anniversary edition of its quarterly publication, "Unscheduled Events." Starting with a Federal grant of funds in 1963, DCPA and its predecessor agencies have "continued unbroken sponsorship (of the Center) up to the present time," the Center noted.

The Disaster Research Center, which has carried out more than 100 field studies of natural or technological disasters, currently is conducting specialized studies on such topics as the legal aspects of natural disasters, the role of the local community in water pollution emergencies, and mass media response to community crises.–**Joseph V. Quinn.**

Names, Names

FORESIGHT

Question One: What to call the new periodical?

We sought a title with a theme of preparedness... getting ready... looking ahead to meet a sudden emergency. There followed days and days of brilliant "brain storming." Oh, it was something to behold! But in the end we didn't pick the title at all. We stole it.

The folks who are preparing the Defense Civil Preparedness Agency annual report for fiscal year 1973 came up with FORESIGHT as the report's main heading–a word defined by Webster as "thoughtful regard or provision for the future; prudent forethought." Perfect!

Now, for a bit of rationalization: The annual report folks had the title first, true. But DCPA and its predecessor agencies have been publishing annual reports for years. We're the new guys on the block, brash enough for a little "midnight requisitioning"–even in broad daylight.

So we did it, right there in the open... looking not at the past but at the future. That's FORESIGHT.

CIVIL PREPAREDNESS

Since its beginning as a nationwide program, civil preparedness has traveled under many different names.

At the Federal level, we've moved from the early Council of National Defense through six name changes to the present Defense Civil Preparedness Agency (DCPA). This latest change (from the Office of Civil Defense) was in line with expanded emergency responsibilities, including planning to cope with both natural disasters and nuclear attack.

State agencies use more than 30 different titles–"civil defense" alone or in combination with "disaster," "disaster relief," "disaster control," or "emergency planning"... "emergency services" alone or in combination with "disaster"... "civil defense mobilitation"... "disaster"... "emergency government"... "civil preparedness."

An even greater variety exists among local governments.

So there are many different combinations. But we're all headed in the same direction, with the same objective: to be ready to protect people and property in any type of disaster. By any name, that's CIVIL PREPAREDNESS.
–**Mary U. Harris.**

a special note...

There is a possibility that some of our readers received more than one copy of this first edition of FORESIGHT. The reason is that, in establishing our distribution system, we attempted to honor both national and regional mailing lists.

We are working to eliminate duplications from the various lists, and will appreciate hearing from any person who received duplicate copies.

'We Interrupt This Program...'

"Radio Planning for Natural Disasters" was the subject of a special panel discussion of radio and television newsmen at the 28th international conference of the Radio Television News Directors Association at Seattle. Capsule comments of panelists:

Mike McGee, KCMO, Kansas City: "Stations must have a comprehensive disaster plan, one that assigns responsibilities for each of the station's functions. AM-FM and TV emergency operations must be coordinated."

Jim McElhaney, Public Information Officer for Corpus Christi, Texas, and a former broadcaster: "Local governments must prepare plans to coordinate and authenticate emergency information, and provide for an orderly flow of information to the media on a timely basis in a disaster."

Bill Duhamel, KOTA, AM-TV, Rapid City, South Dakota, with his community's 1972 flash-flood disaster as a reference point: "There's an urgent need for broadcasters and local government officials to get together and develop an emergency information plan that meets the needs of broadcasters, the government, and the people both serve during disasters."

Dr. J. Eugene Haas, University of Colorado, who is using a grant from the National Science Foundation to determine the best methods of communicating with people during emergencies: "Just because information is broadcast doesn't mean the general public believes it or will respond. The information must be repeated and reinforced over several outlets, and it must be authoritative in nature." —**William H. Traugh**, DCPA Region Six.

MOBDES: Year One

Seven thousand man-days of professional talent added to the civil preparedness program throughout the United States. And more to come.

That's the first-year record—and potential—of the Civil Defense Military Reserve Mobilization Designee program, frequently referred to by the acronym, "MOBDES."

The program, started in mid-1972 by the Defense Civil Preparedness Agency and the Army, Air Force, and Marine Reserves, aims at strengthening State and local civil preparedness staffs while offering training and emergency assignments near their homes to Army, Air Force, and Marine officers, warrant officers, and enlisted members of the Individual Ready Reserve.

By the end of the first year, 438 reservists in 44 States were involved in the program which includes, at a minimum, 24 two hour on-the-job work sessions for retirement points only during the year, and an annual 12-day tour of training duty with pay, spent either on-the-job at their duty stations or as resident students in the DCPA Staff College at Battle Creek, Michigan.

Most reservists involved in the program (60 percent) were associated with local civil preparedness programs, about a third were assigned to State offices, and the balance were located at DCPA regional offices. California led all other States with 77 reservists participating in the readiness-improvement program.

As word of CD MOBDES spread—both to reservists and to State and local civil preparedness officials—recruitment began to pick up. By the end of the first year it was running at a rate of nearly 50 reservists a month and showed every sign of jumping far beyond that mark as the program moved into Year Two. —**Gilbert C. Johnson.**

Emergency Fuel Saving Tips:

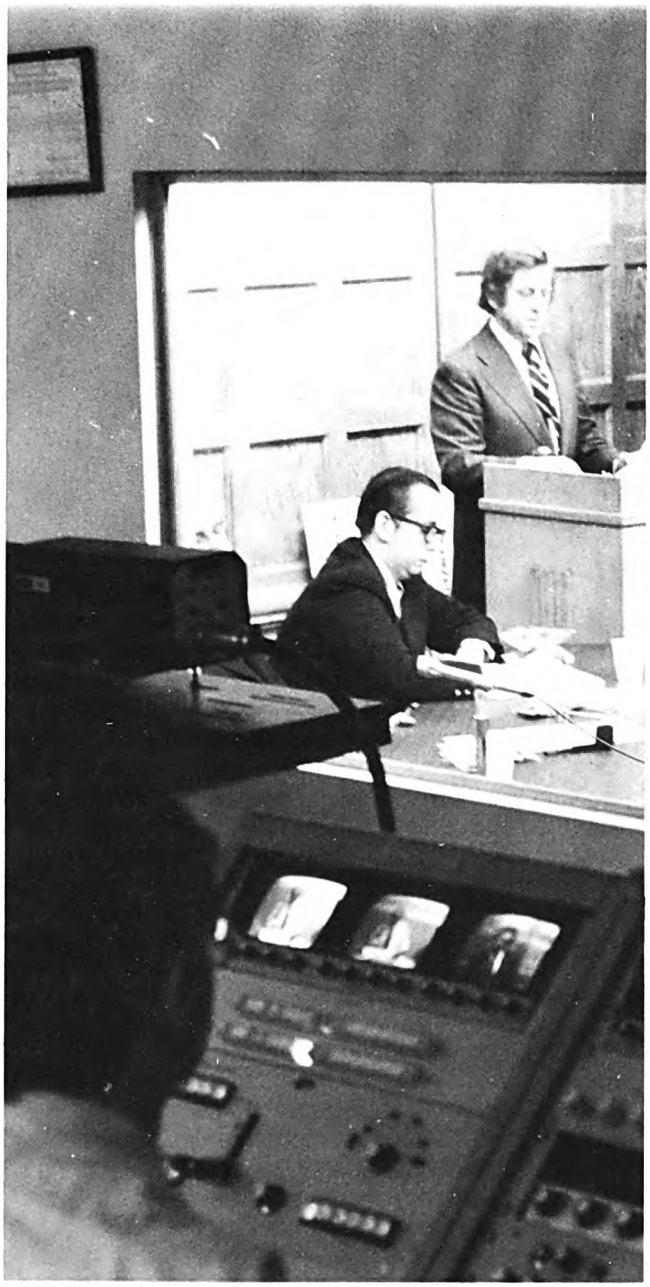
AT HOME

- Set your thermostat at the lowest comfort level. (68 degrees is suggested.)
- Lower thermostat setting by 2 to 5 degrees at night.
- Add moisture. A well-humidified home is comfortable at a lower temperature.
- Insulate with storm windows and doors. (Clear plastic fastened over windows can help.) Caulk and weatherstrip.
- Let the sun shine in during the day, but draw shades and drapes at night for added insulation.
- Close unused fireplace dampers.

ON THE ROAD

- On highways, drive at a maximum of 50 miles per hr. (Compared with higher-speed driving, you can save 20 to 25 percent of your gasoline consumption.)
- In city driving, avoid "jackrabbit starts."
- Get regular tune ups. (Save up to 175 gallons a year.)
- Replace air filter regularly. (Save up to 80 gallons a year.)
- Keep tires properly inflated. (Save up to 50 gallons a year.)
- Turn off engine and accessories when waiting. (One minute of idling uses more gas than restarting the engine.)

Prime time for



FROM MAIN NEW YORK STUDIO..... TO
ONE OF EIGHT OUTLYING STUDIOS.....

Four levels of government—Federal, State, county, and local—harnessed the cool medium of television to handle the hot subject of major disasters in a series of instant electronic steps throughout a 1,700-square-mile area of New York and New Jersey.

More than 100 officials from three New York and five New Jersey county governments plus 45 cities and towns—officials representing, in all, more than 5 million people in the populous northeast—joined with Federal and State disaster preparedness experts last fall in unveiling a unique two-way television concept of communicating with each other on planning for floods and hurricanes.

Two-Way TV Conference

Without leaving their respective counties, they were able to hear and see presentations on major elements of disaster preparedness, and ask questions of the speakers and among themselves through the use of a two-way audio and visual closed-circuit television network established by the Metropolitan Regional Council to improve the processes of government by accelerating the exchange of information.

So new is the Metropolitan Regional Council-Television Network—or MRC-TV, as it is called—that the network wasn't even formally dedicated until a week after the five-part disaster preparedness seminar had been held under the sponsorship of the Defense Civil Preparedness Agency.

The Metropolitan Regional Council, headquartered in the One World Trade Center in New York City, serves governments in New York, New Jersey, and Connecticut whose operations frequently require that they be involved with one another as well as with many State and Federal agencies. At about the same time the Council was developing its two-way television network, staff members of DCPA Region One at Maynard, Massachusetts, were discussing better ways to reach the many governmental units they work with on civil preparedness matters. Why not tie the two together—the new governmental TV network and information on the many governmental problems inherent in preparing for and responding to a major disaster?

Project Gets Started

To Allan R. Zenowitz, DCPA Region One Director, and his staff, it seemed like a "natural." And in no time work was underway to develop a series of five, two-hour sessions, aired for five consecutive weeks, on civil preparedness actions for floods and hurricanes.

Clarence M. Kelley, Director of the Federal Bureau of Investigation, recently gave an address on the subject, "Receptiveness To Change." He was speaking to members of the International Association of Chiefs of Police, but his message was universal. Excerpts from Director Kelley's speech:

The Challenge of

"What all of us should be doing is not worrying what used to be, but **concerning ourselves with what can be...**

One of the greatest fallacies among many people today is the belief that the future will be pretty much like it is now.

"I know it almost borders on heresy to say that maybe police are not always adequately attuned to the times. I think that we as a profession have a most commendable overall record of keeping abreast of the times. However, just keeping up to date is not enough. We must look farther ahead. We must endeavor to anticipate change—and plan accordingly...

"One of the greatest fallacies among many people today is the belief that the future will be pretty much like it is now, and that we can continue to do business tomorrow, next year, five or ten years from now much as we are doing at present... Our society is changing so rapidly that if we train people exclusively on traditional methods without anticipating and incorporating changes... **they'll be obsolete before they actually become functional...**

"The natural tendency is to stay with the traditional, the proven, what we have now. I can assure you, such a reliance can only lead us into great trouble... Lack of innovation brings stagnation.....

"Obviously, we do not want arbitrarily to discard what is good, what is working, what is performing well. But we must be willing to analyze, to test, to evaluate, to see **what can be...**

"Let's be honest with ourselves. Most of the substantive changes we have made as a profession in recent decades have been dictated by external pressures. Too often we have instituted changes under compulsion and coercion. Too often we have been hesitant and uncertain—and by such delays have made our decisions ineffective.

"Rather, we need to inculcate into our personnel—at all levels—an attitude which encourages creative and innovative thinking. We need to encourage a perception of change as part of the thinking process of the officer as he carries out his daily assignments. We want him to seek more efficient and effective ways of accomplishing his goals. Actually, in the long run—and this is a basic point—the specific changes effected are often not nearly as important as **efforts to build an organization capable of continuing change...**

The specific changes effected are often not nearly as important as the efforts to build an organization capable of change.

"If we are to meet this **critical challenge of change,** we must be alert to the symptoms of obsolescence and take immediate and effective remedial action. From over 30 years in this profession, both as a local police chief and a member of the FBI, I know there are no universal panaceas... However, we can, through alertness and **foresight,** do much to anticipate what will happen...

"The anticipation of change means one thing above everything else in law enforcement: PROFESSIONAL TRAINING.

If we are to meet this critical challenge of change, we must be alert to the symptoms of obsolescence and take immediate and effoctive remedial action.

"The very complexity of modern society and the attendant shock of change have made education a major industry in American today. Never before have so many people, adults and children, been going to school in so many academic and vocational areas. They seek through knowledge to understand, control, and perhaps master change. Otherwise, change will master them—and our

Change

society. And never before have so many law enforcement officers–local, State, and Federal–been receiving training in the work of our profession...

"In the FBI–through our National Academy and police training programs–we are attempting to prepare our students for what they can expect not just today, but tomorrow, next week, next year. For example, we offer courses on alcoholism and narcotics... on dealing with acts of terrorism... specialized instruction on weapons and tactics in meeting emergency situations when snipers endanger public security...

"Look at **police-community relations**. Some years ago policemen were not directly concerned with problems arising from what might be called community tensions, minority frustrations and the like. The whole concept of 'community relations' as a law enforcement concern had not yet arisen. But the 1960's brought drastic changes. Police departments found themselves immersed in tension with many groups in the local community...

"In recognition of this societal change, the FBI last fall hosted law enforcement administrators from throughout the Nation at the first national symposium on police-community relations. As a result, three two-week schools on police-community relations were held in the spring of 1973. In November we will hold a second symposium on this subject.

Anticipation of change means one thing above everything else . . . PROFESSIONAL TRAINING

"In these symposia we will consider sociological, criminological, and psychological concepts relating to the theory and practice of community relations. The officer can see the challenges facing him, how he fits into the situation, and what he and his brother officers must do if they are to surmount the obstacles.

"This, indeed, is training for the future–mastering change and making our training relevant for the world of tomorrow." □

Here Goes GOES

To most people, GOES could mean many things–"to proceed"... "to move"... But to 10 U.S. Government departments and agencies, including the Departments of Commerce and Defense, GOES stands for "Geostationary Operational Environmental Satellite"–a new weather satellite that will "hover" over the earth to keep track of severe storms as they develop, transmit reports of tidal waves before they hit, and collect information on rapidly developing floods and other natural disasters.

Congressman Olin E. Teague of Texas, Chairman of the House Science and Astronautics Committee, the committee that authorized funds for the satellite program, describes this newest satellite as "another major step forward in a system that is applying space to the benefit of every man–a new look for a frontal attack on disasters."

The National Oceanic and Atmospheric Administration (NOAA) of the Commerce Department and the National Aeronautics and Space Administration (NASA) have worked together in designing and developing an overall satellite weather-detecting system. The program, known as the Synchronous Meteorological Satellite program, uses satellites to obtain both day and night information on the earth's weather. GOES is the latest stationary satellite in this system.

GOES will not orbit around the earth but will "hover" at an altitute of approximately 22,300 miles over the earth. At that altitude, a satellite in the plane of the equator and the ground point directly below it are moving at the same relative speed.

Unlike its predecessors, GOES will use a broader and more sophisticated array of infrared sensors to get more than a photograph of the visible conditions of the earth's surface. These types of sensors, NASA explains, will permit both day and night image data of cloud types, temperatures and heights, and of wind fields. In addition, GOES will provide communications links for the Pacific Tsunami Warning System, relaying data from ocean-wide networks of seismometers and tide gauges to a central facility at NOAA's Honolulu Observatory, and will have communication channels to help link various weather centers around the country.

The first GOES prototype is scheduled to be launched early in 1974. A few months later, NASA plans to have a second unit placed into position. The two space craft will be positioned to provide a near-continuous coverage of the Pacific, the Americas, and the Atlantic. GOES, in combination with our present satellites, should provide solid coverage for North America's present and future weather, gathering data to help reduce the annual loss of life and billions of dollars in property damage caused by hurricanes, floods, forest fires, and other natural disasters.–**Jo Hennings.**

Regional Roundup

PREPAREDNESS DIVIDENDS

MONTANA—A little over a year ago the Livingston, Montana civil defense office held a bus accident emergency exercise. All emergency services were involved—police and fire departments, ambulance and hospital services, doctors and nurses. After the exercise, procedural improvements were made. And last September, when a bus loaded with 35 tourists left the road and tipped over on the dry bed of Phantom Lake in Yellowstone Park, the emergency services were ready.

A call via the DCPA National Warning System to Billings enabled the Highway Patrol to get urgently needed medical supplies to the accident scene rapidly. Victims were rushed first to the Yellowstone Park Medical Service by ambulances and by cars of the Park Rangers and tourists. After initial treatment there, they were taken to Livingston's Memorial Hospital where off-duty doctors and nurses were waiting to treat them. Observers noted that the scene at the hospital could have been one of mass confusion with this number of admittees, but the 1972 exercise had helped to develop a system to deal with an emergency of this type.

Afterwards, the Livingston *Enterprise* newspaper called attention to a "CD Dividend"—the exercise and the emergency pay-off a year later—stating: "Nobody likes to hear about tragedies and disasters, but everyone is upset by them less if we're prepared for them. The civil defense office deserves a vote of appreciation for its forethought."

MICHIGAN—Planning paid off for the Inkster, Michigan Office of Emergency Preparedness.

That office staged a mock air crash of a 747 jet approaching Detroit's Metropolitan Airport. Less than a year later a private airplane slammed into the Inkster area, killing eight persons aboard.

Recalling their experiences of the simulated air disaster, Inkster units and police from neighboring cities, Wayne and Westland, along with State troopers and Wayne County Sheriff's deputies, arrived on the scene within minutes to control onlookers and assist medical examiners in the removal of bodies.

Inkster Mayor Edward Bivens said afterwards: "Our December exercise made us aware of the steps that have to be taken in an air disaster. We utilized that experience Tuesday."

INFORMATION RESULTS—NEW JERSEY

The National Oceanic and Atmospheric Administration publishes a leaflet, "Lightning." The Defense Civil Preparedness Agency, which works closely with NOAA, reprints the leaflet to make it more widely available to State and localities. End of action? Just the start.

Enter John P. McConnell, Supervisor of Public Relations for the New Jersey Division of Civil Defense and Disaster Control. Mr. McConnell prepares a simple three-page release on the threat of lightning, lists 15 safety rules, describes the NOAA publication and how people can get it. He sends it to news points in New Jersey.

Immediate results: The story is published prominently by more than 50 newspapers in New Jersey. Radio stations phone in and record spot announcements on the subject. Hundreds of citizens request the publication. All from one press release—and the initiative of one man.

EXCESSARAMA—ILLINOIS

The Illinois Civil Defense Agency sponsored an exhibit of preparedness equipment furnished under the Federal Government's excess and surplus property programs. Called the "EXCESSARAMA," it was held in late September in Robinson City in southeastern Illinois. Fifty pieces of excess and surplus equipment, including trucks, shop vans, jeeps, trailers, emergency generators, a boat and motor, and rescue vans, were viewed by more than 500 people, many of them elected officials from 13 communities in the area.

9-1-1—NEW YORK

Southern New York State, home to more than ten million people, is now completely serviced by the "911" Emergency Telephone System with the implementation of the system in Nassau County. General O. C. VanExel, Nassau County Civil Defense Director, reports that calls for police, fire, or ambulance services in Nassau go directly to the underground Emergency Operations Center in Mineola where the police, fire, and civil defense departments have adjoining rooms. Operators receiving calls fill out radio dispatch cards and place them on a high-speed conveyor belt to a radio dispatcher who orders out proper equipment and assistance. Precise records of all communications are maintained through the use of round-the-clock tape recorders. And the use of the tape records reduces the instance of false alarms by 95 percent. —John I. Bott.

On the Site / Razorback Readiness

by Dana J. Cessna / DCPA Region 5

North Little Rock, Arkansas, hub of the Nation's second longest railroad, the Missouri Pacific, is a city of 65,000 people that lies nestled serenely among rolling hills north of the Arkansas River, across from Little Rock. But like any community, it can have its problems.

On April 20, a devastating storm passed over Arkansas. Tornadoes were reported in numerous places, including the North Little Rock area. Fortunately, the city experienced little damage from the twisters. But widespread flooding and unrelenting spring rains created major disaster conditions.

That these disaster conditions were handled with a minimum of risk to human life and a minimum of property damage to the community can be attributed to "a responsive mayor who benefited directly from On-Site Assistance efforts and who came, as a result of the flooding disaster itself, to realize the vital importance of an emergency operational capability," according to Mrs. Edyth Haliburton, North Little Rock Emergency Services Director.

Preparedness Starts

Less than six weeks before the disaster struck, North Little Rock joined the ranks of more than 560 other communities throughout the United States in starting a civil preparedness On-Site Assistance project. On-Site Assistance is a structured process whereby teams of trained Defense Civil Preparedness Agency and State civil preparedness personnel go into a local jurisdiction, and working closely with local authorities, make an analysis of the hazards facing the community, evaluate local disaster-response plans and facilities, determine specific improvements that are needed, lay out an "action plan" for making these improvements, and carry out follow-up actions to implement the plan.

In North Little Rock the process started with a hazard-analysis exercise conducted in the city's council chambers and attended by Mayor Robert Rosamond, members of the City Commission, city department heads, DCPA Region Five Field Officer John Stallings, and a number of Arkansas State Emergency Service officials.

During the exercise, Mr. Stallings discussed with Mayor Rosamond and other officials the resources that would be needed to meet various disasters, including the need for an Emergency Operating Center—a centralized facility for collecting and dispatching operational information and instructions, and for organized decision-making in an emergency when the left hand must know what the right hand is doing, or even worrying about.

Mayor Rosamond, serving only his third month as mayor at the time, said he had consulted with Mrs. Haliburton only briefly about the city's major emergency preparedness capability, but he emphasized: "The greatest disaster that could occur in the City of North Little Rock would be failure to be prepared for all of the hazards identified during this exercise."

Then the Floods Came

With that type of support, Mr. Stallings and other civil preparedness representatives began to conduct an On-Site Assistance survey in the city, interviewing responsible local leaders on the whole subject of civil preparedness—what they believed would be needed to establish a good, workable emergency operating system for the community. And then the floods came.

Mayor Rosamond established a temporary Emergency Operating Center in his own office to coordinate emergency response to the disaster. During the height of the flooding he held daily meetings with department heads, getting reports from each on the activities of the night before, the activities anticipated during the day, and projected special problems. Flood damage estimates were compiled as part of the process to obtain Federal financial assistance in disaster-recovery efforts.

"This was Mayor Rosamond's baptism of fire under disaster conditions," Mrs. Haliburton observed, "and he was responding in a thoroughly professional manner, coordinating the emergency activities of the entire community. Again, I've got to credit the efforts, in great measure, to On-Site Assistance for his capable handling of the situation."

Specific Steps Taken

Back in his office following the disaster-recovery operations, Mayor Rosamond went into action to develop the best emergency operating system his city had ever seen. Discussions during the On-Site Assistance preliminary interview sessions plus the knowledge he gained during the flood disaster made him more determined than ever to achieve this goal.

First, he authorized development of a long-needed warning system. A $34,000 warning project application was approved for North Little Rock.

Next, he agreed to an earlier recommendation that an Emergency Operating Center be constructed for the city.

A third recommendation, that of getting the city to employ a deputy Emergency Services Coordinator, received expedient attention even before it was incorporated in the written version of the On-Site Assistance action plan. Mayor Rosamond agreed to employ a deputy coordinator as soon as matching funds became available.

There's more to be done. There always is in civil preparedness. But because of On-Site Assistance, North Little Rock, Arkansas, is on a well-mapped readiness road.

Publishing the Word

Getting disaster safety instructions to citizens in a timely and usable manner is a constant responsibility of civil preparedness. And one of the many methods used by local directors is to publish the instructions prominently in local periodicals. Examples:

CITRUS COUNTY, FLORIDA—If you happened to be in this central Gulf Coast area of Florida about the beginning of the hurricane season and picked up a local newspaper, the chances are you would see a full-page ad giving readers key local pointers on hurricanes—what to do before, during, and after one of the angry "ladies" brushes the Citrus County area.

You would be looking at the brainchild of Mrs. Bell Land, who recently retired after more than 16 years of service as Director of Citrus County Civil Defense.

Rules for Hurricanes

The project started nine years ago when, after a passing hurricane caused high tides that inundated large sections of the low-lying coastal area of Citrus County, Mrs. Land resolved that coastal residents should be warned of hurricane dangers and resulting high tides *before* they happened. Local newspapers seemed to offer the best means of getting this information to the public, so with the approval of the Board of County Commissioners, a full-page ad was inserted in each of the three county newspapers, the *County Chronicle* of Inverness, the *Suncoast Sentinel* of Crystal River, and the *Dunnelson Press*.

In addition to basic hurricane precautions, the annual ad provides the elevation above sea level of key coastal and interior areas, and features a section, "If You Need Help... Call Your County Commissioner," and then lists the names and phone numbers of county commissioners in Crystal River, Inverness, Hernando, and Floral City.

COLUMBIA, SOUTH CAROLINA—Residents of this capital city in central South Carolina receive tornado safety instructions in full-page ads published in Columbia's two daily newspapers, *The State* and *The Columbia Record*.

Tornado Safety Tips

The instructions include the distinctions between the emergency messages, "tornado watch" and "tornado warning," describe the alert signals that would be sounded on Columbia Fire Department sirens, civil defense sirens, and on sheriff cars in the rural areas of Richland County, and the protective actions a person should take if a warning is sounded when he is in school, in a city or town, an office building, factory, private home, a mobile home or other dwelling of light construction, or in the open country.

James W. DeLoach, Director of Richland County-Columbia Civil Defense, said the special newspaper instructions were in addition to the tornado safety instructions issued regularly through the schools in his community.

Mr. DeLoach followed up the special newspaper tornado safety instructions with a letter to the editor of each newspaper explaining why people should not try to get to a public fallout shelter when a "tornado warning" is issued.

Danger in Using Public Shelter

"When a tornado warning is given by the National Weather Service for an area usually covering several counties," Mr. DeLoach explained in his letter, "it is not feasible to effect an evacuation to specific locations because the route of a tornado is erratic. Therefore, people could be evacuated directly into the path of the tornado for which the warning was issued or into a newly spawned one.

"For these reasons the National Weather Service, along with Richland County-City of Columbia Civil Defense, strongly recommend that the published Tornado Safety Instructions be followed."

FAIRBANKS, ALASKA—Three pages of civil defense instructions are published annually in one of the biggest little telephone directories in the world.

The meaning of warning signals, information on radioactive fallout, basic citizen protective actions, and the community shelter plan for the Fairbanks metropolitan area are covered in the Fairbanks telephone book.

Low Publishing Costs

John M. Murphy, Director of Civil Defense for Fairbanks, said the annual cost of publishing the emergency instructions is extremely low because the telephone company is a municipally owned utility.

Publishers of the Fairbanks telephone directory point out that it is "the farthest north directory on the Continent and covers more area than any other telephone directory in the world. Reaching from the Canadian border to the Bering Sea, as far south as Tok, to Barrow, the farthest north settlement, the directory encompasses in excess of 450,000 square miles."

Included is the community of North Pole. Yes, there's a number listed for Santa's house. □

From the Press

Here's a digest of news items on civil preparedness topics:

CD-CHINESE PEOPLE'S REPUBLIC—News reports from Peking say journalists traveling with Secretary of State Kissinger in November inspected the extensive system of "air raid shelters" underneath the city. (*Tribune*, Chicago). Other Western newsmen, visiting in Canton, were told the city had a shelter system similar to Peking's, and were shown grain being stored in order to comply with Mao Tse-tung's dictum to "be prepared against war, be prepared against natural disasters." (*Times*, New York).

ENERGY CRISIS—State and local civil preparedness agencies across the Nation have been designated by a number of Governors and city authorities to coordinate plans for rationing, allocating, or conserving fuel this winter. Connecticut, Minnesota, Iowa, Massachusetts, North Dakota, Maine, and Nebraska are among States taking such action. Civil preparedness organizations also are providing fuel-saving hints for the public.

PEOPLE—DCPA's Distinguished Service Citation went to State Rep. *Joseph H. Potter* of Westerly, Rhode Island, for his work on State civil preparedness legislation (*Day*, New London, Conn.)... *Governor Dan Walker* of Illinois appointed *E. Erie Jones*, of Palatine, as acting director of the State Civil Defense Agency (*Tribune*, Chicago)... *Col. Frank Ratliff*, director of the Office of Emergency Preparedness of North Carolina, received the Edward F. Griffin Award for his "outstanding achievements" in CD (*Courier*, Clemmons)... *Walter D. Hyle, Jr.*, CDD, Baltimore, Md., was chosen president-elect of the United States Civil Defense Council, at its annual convention in St. Paul (*AP*)... *Dr. Eugene P. Wigner*, world-famed nuclear scientist, was key speaker at the convention... "*Auxiliary Men in Blue*," auxiliary police force of Springfield, Illinois, received kudos in a *State Jounal* editorial. "This is a group... of people who are sincerely interested in contributing constructively to the betterment of the community," the paper editorialized. CD director Vern Strongman gets the credit for organizing and leading the group...

NEW BUSINESS—In Iowa, the "analysis phase" of a program to establish a coordinated network of telecommunications for law enforcement throughout the State has been completed; the analysis included a study of civil preparedness communications in cooperation with the Iowa Division of Civil Defense (*Gazette*, Cedar Rapids)... The Maine Bureau of Civil Defense has taken title to 23 Packaged Disaster Hospitals formerly owned by Federal Government. The hospitals are being completely renovated and modernized... In Alabama, State Civil Defense officials have asked the Southeast Alabama Regional Planning Commission to consider hiring a planning officer to coordinate emergency preparedness in seven adjoining counties. The CD office points out that the Federal Government (DCPA) can pay 50 percent of the salaries and expenses of such an officer (*Eagle*, Dothan).

FEDERAL ASSISTANCE—The Clark County (Nevada) Civil Defense Agency has procured an ambulance for the county's Medical Service Council. The ambulance, with supplies and equipment, had an original cost of over $11,000, but was acquired at no cost to the county through the Federal (DCPA) Excess Property Loan program (*Sun*, Las Vegas)... *Al Schutte*, Civil Defense Director for the city of Taylorville, Illinois, has received a check for $35,177 in State and Federal funds, representing half of the cost of constructing the city's Emergency Operations Center (*Breeze-Courier*, Taylorville)... *Mayor Victor Mambruno* of Waterbury announced that the city saved $154,000 in buying Federal surplus emergency equipment. He said Civil Preparedness Director *Edward Duval* was able to get $162,000 worth of equipment (trucks, rescue, and communications gear) for $8,000. (*Telegram*, Bridgeport)

TORNADOES—The Sioux Falls, South Dakota, *Argus-Leader* carries extensive feature articles on mobile home tie-downs, prompted by DCPA Region Six news release, and surveys by Minnehaha County Civil Defense Office. Civil Defense Director *Joe Vanderloo* notes that "if a mobile home is properly tied down, both on the frame and over the top, it can withstand a great deal of wind." (DCPA's Technical Report, TR-75, "Protecting Mobile Homes from High Winds," presents tie-down methods). Item: On October 11, the AP reported from Wichita, Kansas, that a tornado "swooped into a mobile home park southeast of Wichita... overturning or damaging about 30 units and injuring at least 15 persons."

MISCELLANEOUS—A quote from *Mayor Charles Dunn* of Norman, after Oklahoma University civil preparedness experts helped the city stage a disaster drill: "One thing is obvious: Norman needs a fulltime professional Civil Defense Director, a modern, completely equipped emergency operations center and, above all, a complete and workable disaster-control plan..." Search for a missing plane in Arkansas involved airborne search efforts by Civil Air Patrol, and ground activity led by *Kenneth Sinyard*, Miller County Civil Defense Director. CAP and local civil defense, with encouragement from DCPA and States, generally have close working agreements for such eventualities... In Cheyenne, 12 Scouts, under troop master *Jack Wells*, have qualified for the Emergency Preparedness Merit Badge—a requirement for Eagle rank in the future. National Scout leadership and DCPA instituted this merit badge in August 1972 as part of a program to enlist youth in civil preparedness efforts (*Cheyenne Eagle*). **—Joseph V. Quinn.**

They're Saving More Lives (continued from page 3)

In a construction accident in Woburn, Massachusetts, two workers were on a staging when it collapsed. The rescue team, using techniques taught in the training course, immobilized both victims on backboards which they had installed in their truck after taking the course. X-ray examination at the hospital revealed that one of the victims had a cervical fracture, and the other a fracture of the lumbar spine. The emergency technique used by the rescue team allowed both victims to walk out of the hospital upon recovery.

50,000 Take the Course

Of major significance is the fact that the 81-hour Basic Course for Emergency Medical Technicians–Ambulance, credited with assisting ambulance and rescue workers in saving these lives and many more, is now being offered in 46 States. More than 14,000 ambulance services involving close to 26,000 vehicles and 206,874 workers, now have approximately 50,000 of their personnel who have completed this course.

This special basic training course and a 480-hour Advanced Course for Emergency Medical Technicians-Ambulance, which is now being pilot tested, are the results of the Highway Safety Act of 1966. This Act requires that States have a highway safety program developed in accordance with uniform standards set by the Secretary of the Department of Transportation.

As a result, Highway Safety Program Standard No. 11, "Emergency Medical Services," was issued in June 1967 to encourage the improvement of the lifesaving capability of emergency medical services through personnel training, proper equipment, communications, operational coordination, and comprehensive planning at State and local levels.

DOT's National Highway Traffic Safety Administration, with the recommendation and assistance of the National Academy of Sciences-National Research Council, developed the basic training course as well as a 20-hour refresher training course being offered by the States every two or three years for retention of certification.

Advance Training Prepared

Hopefully, by early 1974, the Advance Course for Emergency Medical Technicians-Ambulance will be deployed, and emergency medical personnel will be taught such techniques as intravenous infusion, drug therapy, tracheal intubation, and treatment of myocardial infraction, all done through radio communication with, and under the direction of, a physician.

Best example of the use of these techniques can be viewed on the television show, "Emergency!," based on the rescue system in Los Angeles which has already incorporated the advance course into its training program. □

Prime Time for Govemments (continued from page 7)

Stage Fright Disappears

At first there were the normal "bugs" common to any new communications system. Some of these were personal in nature: participants were slightly awed by all the electronic gadgetry and were reluctant to test their use of it by asking questions. But in time the "stage fright" wore off, and by the time Leland A. Stanford, the highly respected coordinator of the Office of Civil Defense and Disaster Control for the summer resort area of Cape May County, New Jersey, presented an account of the many problems in developing local emergency operations plans, he was kept on camera answering questions for 45 minutes.

Highlight of the first program was a rundown on what happened after the Agnes floods subsided, presented by City Manager Joseph Sartori of Elmira, New York, whose community was innundated in the massive flooding. Using a split-screen technique, he answered direct questions from viewers in the eight counties, most of whom had experienced damage from Agnes and subsequent floods.

In succeeding sessions, participants received information from representatives of the National Weather Service on hurricane and storm flooding effects, the Army Corps of Engineers on flood plain management, the Department of Housing and Urban Development on the National Flood Insurance Program and on Federal disaster relief procedures, and from the Red Cross on that organization's relief work in natural disasters.

Although participation was expected to drop off sharply after the first program, it held steady at the 100-person mark during the entire five-week period.

Officials of the Metropolitan Regional Council assessed the disaster preparedness TV series as highly successful, and proof of their contention that Federal and State governmental groups could meet the task of producing their own programs. The formal planning book produced by DCPA Region One for the initial effort is now being distributed nationwide by MRC as an official guide for other agencies.

Rodman T. Davis, MRC planning director, stated that, based on the success of the DCPA-MRC joint effort, three other metropolitan councils in Seattle, Detroit, and Washington, D.C., are giving careful consideration to the development of two-way television networks–a modern way to get more governmental people talking with each other in their own prime time on the tube. □

John E. Bex, Director of DCPA Region Two, recently gave a speech on the subject of being a good director. I believe Mr. Bex put into words some of the requirements we all feel local directors should have, and with which many of our readers who are local directors would agree.–John E. Davis, National Director.

John E. Bex

On Being a Good Director

Intelligence, knowledge, and expertise are worthwhile. A good director can make use of all of these. But they are not the heart of the matter.

Men of superior intelligence have often failed as managers and directors. They have sometimes created total disasters while other men, not dull but very far from the top of the class, have been really outstanding directors. It happens every day.

Another common fallacy is that a good director, above all, is someone who gets along well with people in the sense that he likes everyone and everyone likes him. Actually, good directors vary widely in this respect. Popularity is undoubtedly a positive asset to some degree. But it is a surprising fact how much good performance as a director is compatible with at least a moderate degree of unpopularity.

The modern director needs some very old-fashioned virtues–drive, ambition, persistence, a sense of purpose, confidence. These are the motivating forces required to make all other qualities effective.

The manager or director needs to have a certain sensitivity and even vision regarding long-term goals, interests, and the ultimate welfare of his agency and the people composing it. If he diverges too widely from these or is out of time with them, he will fail as a director.

Related to this is the valuable quality of being a good communicator. Since communication is a two-way process, this means a good director must be a good listener. Good listeners are in surprisingly short supply. Thus a director who can listen courteously and intently to what is said, and listen "with a third ear" to what is *not* said as well, is way ahead of the game.

The popular term "nitty gritty" says something about a director's job. It is not an intellectual exercise or something that can be done by remote control. Often it is an inelegant and messy job. As Grover Cleveland once put it: "We are faced not with a theory but with a situation." Often it is these nasty problems which the director can least afford to delegate to others and which he may have to face and solve with his bare hands, so to speak.

Finally, the good director must be a mature person. Being mature specifically implies responsibility and the strength to avoid many temptations to avoid responsibility. It means being objective and fair, being able to rise above one's own prejudices. And it also means having the courage to proceed as a minority of one when this is necessary.

A good director, above all, is a person who gets things done and sees that others get things done in one way or another. This essential point is sometimes stated in the form that a good director is one who makes things happen. Today in most fields, whether it be in civilian business or government business, a good manager or director has to have a certain bias toward progress, to be leaning forward, as it were. He must be open to ideas with a belief in the possibility of the new.

Vacation Security

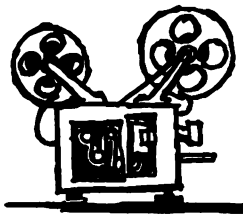
Residents of St. Louis County, Missouri, can plan their summer vacations secure in the knowledge their homes will receive VIP treatment from local civil defense auxiliary police.

The security comes from the Vacation Inspection Program – V.I.P. – instituted by the Saint Louis County Civil Defense Police, in cooperation with St. Louis County Police, to help protect the homes of those away on vacation.

Participating residents simply contacted the police before leaving on vacation. While they were away, their homes were given special checks from duck to dawn by 83 volunteer members (65 men and 18 women) of the 125-member volunteer civil defense police force.

Fred Z. Salomon, Jr., Chief of St. Louis County Civil Defense Police, said that during the three months the program was carried out last summer, auxiliary police made 2,967 checks on homes throughout the 494-square-mile area of the county. They reported a number of things amiss–144 unlocked doors and windows, 42 broken windows and screens, even a leaking gas meter, for example. But because of their special surveillance, there were only five burglaries and four attempted burglaries of homes receiving the VIP treatment.

"The program has been well accepted and greatly appreciated by the citizens of the St. Louis County area," Chief Salomon said. "We feel it was highly successful, and we plan to carry it out again in the summer of 1974."



Tools You can Use

FILMS

Emergency Operation Center, a new documentary motion picture (27¼ minutes), centered on the 1970 Lubbock, Texas tornado, has been released to all Regional and State civil preparedness offices. Prints also are available on a short-loan basis from Army Audio-Visual Centers (film libraries).

The film (coded DDCP20-281 for ordering purposes) recreates the story of the tornado disaster and shows how Lubbock's emergency readiness plan plus efficient use of its Emergency Operation Center paid off when disaster struck. It also carries a special preparedness proposal to local officials from DCPA Director John E. Davis: "We'll come to you—send in a team of Federal and State disaster experts to work with you and evaluate your special needs... update your emergency plans... improve your facilities and equipment... and develop the systems needed for true civil preparedness."

Earthquake!—Spanish version. This film (12:50 minutes), depicting what happened and how the people and their governments responded when the 1971 earthquake hit Los Angeles and the San Fernando Valley, has been produced with a Spanish language sound track at the request of California's Civil Defense Education Coordinator. It will be used in California schools where the Spanish language predominates.

Each DCPA Regional office will recieve one print of this Spanish edition for use by States having a special need for it. However, the film will *not* be carried in Army Audio-Visual Centers

STAFF COLLEGE COURSES

Here's the list of scheduled courses at the DCPA Staff College, Battle Creek, Michigan, for the first quarter of 1974:

February 4-8—Basic Concepts of Civil Preparedness Radiation Control (Radef I).

February 11-14—Radiological Defense Officer (Radef II).

February 14-15—Radiological Instructor Workshop (Radef III).

February 25-March 8—Civil Preparedness Career Development Program—Phase II.

March 11-12—Civil Preparedness Career Development Program—Phase III.

March 18-21—Industry-Business Emergency Planning.

March 25-April 5—Civil Preparedness Career Development Program—Phase I.

No regular courses are scheduled for January.

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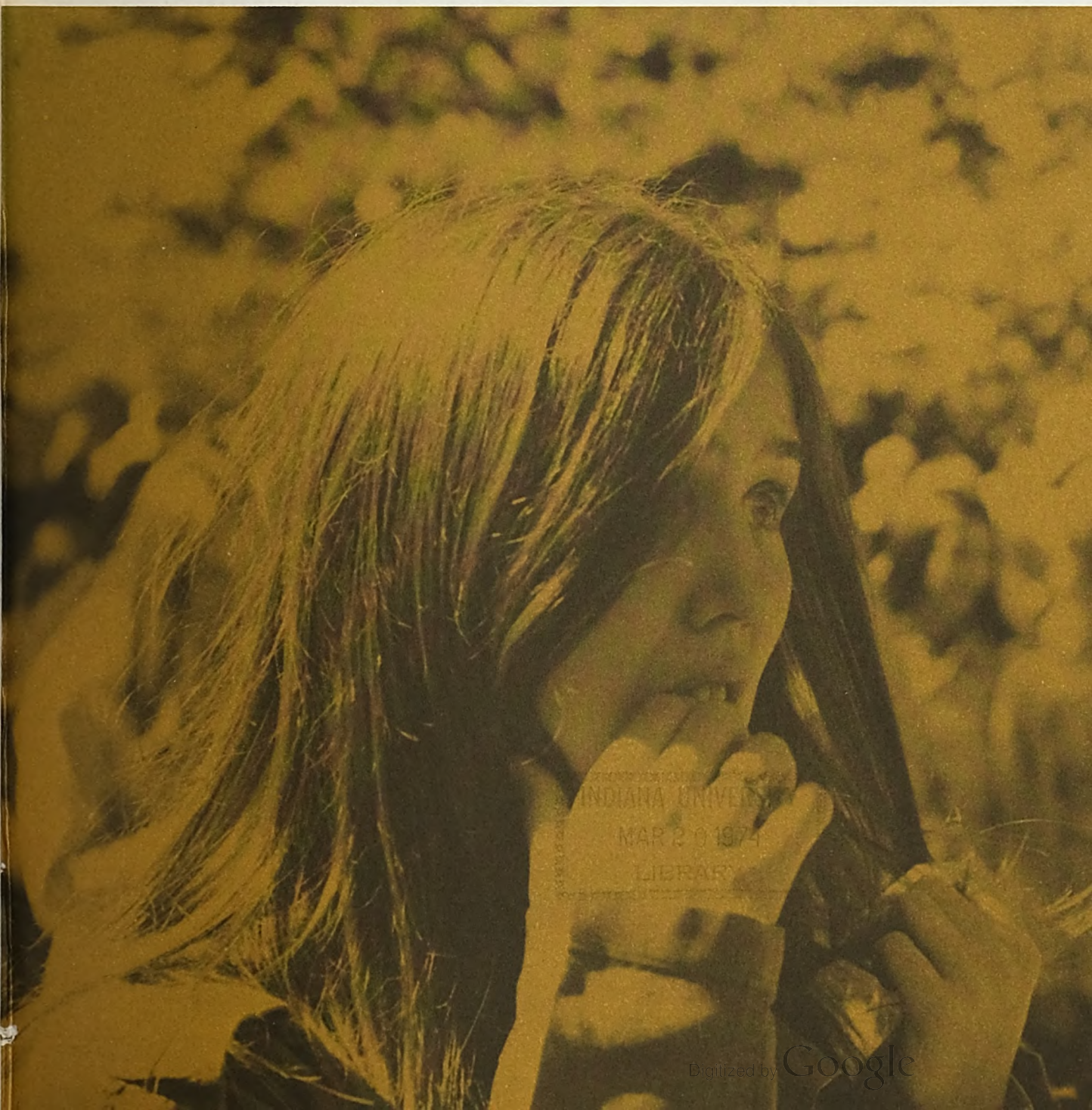

Year of the Tornado

By MARY U. HARRIS

As if man couldn't find enough problems of his own making in 1973, Nature threw him some of her own, including a record number of her most vicious of small storms: the tornado—a roaring dark funnel that can demolish solid buildings, make a deadly missile of a piece of straw, flick up huge trees by their roots, and hurl people and animals for hundreds of yards.

But even in the midst of the devastation there were solid signs of progress in tornado preparedness throughout the United States: The death toll from all of the monster twisters was relatively low.

The National Weather Service reported a record total of 1,102 tornadoes during 1973, the last three occurring on the final day of the year, two in Alabama and one in Georgia. The previous full-year record was 929, set in 1967. Yet the large death tolls that usually accompany these powerful storms were dramatically lowered in 1973. At year's end there was a total of 87 deaths from tornadoes, compared with an annual average of 114 over a period of two decades.

It Didn't 'Just Happen'

The improved lifesaving record didn't just happen. It was the result of widespread promotion of tornado safety rules (see "Perch Patter"), special attention to safety measures for school children (see "Protecting the Kids"), a slow but growing recognition of the particular vulnerability of some homes, such as mobile homes (see "Tying Down Guidance"), and better detection and warning systems on the part of weather service forecasters, civil preparedness agents, and news media representatives throughout the Nation. In short, more people received prompt warning, knew what protective actions to take, and took them.

Dr. George P. Cressman, Director of the National Weather Service, put it this way in special ceremonies honoring those responsible for saving the lives of more than 800 school children when a twister smashed into Tallahatchie County West District School at Sumner, Mississippi on April 24: "Some people call it a miracle that these young people are here today, and some call it careful planning. Have it as you will—miracle or disaster prevention—the preparations that happened here in Sumner are the kind that make miracles happen."

Mississippi Program Cited

He was speaking of a civil preparedness program in Mississippi involving not only improved tornado warning procedures, but also an extensive preparedness educational

(concluded on page 20)

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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

John M. Connor
Production

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

Beauty Battles Beast

Hawaii, our lovely island State, boasts many attractions. One of the most arresting is the surrounding blue waters of the Pacific. But even beauty can turn into a killer when an earthquake generates a tsunami (tidal wave) with a warning time of only 5 to 50 minutes.

It is then that residents and visitors face a natural disaster of immediacy. To help protect their lives, the Hawaii Telephone Company, as a public service, has published for the past 14 years five pages in the front section of the Oahu Telephone directory devoted to instructions on what to do in the event of a tsunami, earthquake, or hurricane, including maps showing areas of where sudden flooding may take place and what to do and where to go for safety when a tsunami strikes.

In addition, the Oahu Civil Defence Agency, concerned not only with the safety of the lives of Hawaii's citizens but their property as well, has sent a brochure and letter from the Mayor to 5,000 property owners living in flood-prone areas on the island. The literature outlines the provisions of the Federal Flood Insurance Program which enables homeowners and businessmen to purchase flood insurance at greatly reduced rates.

Policies are written by any insurance agent, and the Federal Government bears more than 90 percent of the cost for residents of the City and County of Honolulu, which became eligible for the program in 1970. As additional maps are developed indicating other areas prone to flooding, additional mailings will be made to homeowners and businessmen not already approached.

Watch It, Coastlands!

Beware, *NOT* the Ides of March, but July 19 and August 17 when the moon, mother of the tides, will approach our coasts closer than usual. Compounding the moon's extra-strong tidal pull, the sun on these days will lie on the same axis as the moon and the earth, resulting in an increase in gravitational influence. The cumulative effect will provide an abnormally powerful force on the earth's oceans. The potential: severe coastal floods.

On March 6 and 7th of 1962, the east coast–from Long Island to North Carolina's Outer Banks–experienced floods exacting a toll of 40 lives and $500 million of property damage.

The high waters were caused by a phenomenon known as perigee-syzygy tides reinforced by strong onshore winds. Perigee tides, the highest of tides, are produced as the moon, at its closest monthly approach, exerts an increased gravitational pull on the earth's oceans. The word "syzygy" denotes an astronomical condition which takes place when the sun, earth, and moon are aligned in longitude. When these two phenomena occur at the same time, the combined gravitational influence upon the earth is increased and as a consequence, perigee-syzygy tides are truly supertides.

The supertides are not particularly dangerous in themselves, according to Fergus J. Wood, Research Scientist of the National Oceanic and Atmospheric Administration, but he warns: "Should a sustained, strong onshore wind occur during these high waters, a destructive water level could result in widespread coastal damage as took place in 1962 when gale force winds caused the extensive floods on the east coast. The supertides which will occur on July 19 and August 17 are of particular concern for they will take place early in the hurricane season."

The "good news," according to Mr. Wood, is that advanced forecasting now available from today's orbiting weather satellites will provide NOAA with information about nor'easters, hurricanes and other offshore storms in sufficient time to alert authorities so that the tremendous toll of the 1962 flood action can be averted. – **John I. Bott.**

Tying Down Guidance

There is no place in the United States where big winds do not blow. But in mid-1971, Oklahoma experienced more than its share and, faced with an extraordinary number of mobile home blowovers, Harold L. Horton, Director of McAlester's Civil Defense Agency, wrote the Defense Civil Preparedness Agency asking for definitive instructions as to how mobile homes could be secured against the effects of high winds.

Seymour Wengrovitz, Director of DCPA Professional Advisory Services, took on the task of researching the problem. His inquiries were successful and vast amounts of material poured into his office. Of particular value was the information supplied by the Foremost Insurance Company and the University of Michigan where wind tunnel tests had been made under varying wind velocities on various sizes of mobile homes.

In June of 1972 Mr. Wengrovitz completed DCPA's TR-75 booklet, "Protecting Mobile Homes From High Winds." Since then almost half-a-million copies have been distributed throughout the Nation, giving life-saving guidance to many of the six million Americans who live in mobile homes.

Many insurance companies now refuse to insure mobile homes unless they are adequately anchored with tiedowns. Florida has enacted legislation to enforce tie-down regulations, and other States, including Arizona, Mississippi, Missouri and Texas, are considering such legislation. In addition, nearly 100 communities have passed ordinances requiring local mobile home residents to anchor their homes. – **John I. Bott.**

Protecting The Kids

Half-a-million children in 2,400 schools throughout the southeast won't be caught unprepared if tornadoes strike.

They're receiving direct benefits from special School Tornado Surveys being conducted by five Professional Advisory Service Centers under a program funded by the Defense Civil Preparedness Agency to provide technical advice on protective construction techniques and the effective use of buildings to reduce dangers from all environmental hazards.

The school surveys are being carried out by trained personnel from Professional Advisory Service Centers at Auburn University in Alabama, Mississippi State University, University of Florida, University of Tennessee, and the South Carolina Disaster Preparedness Agency.

Basic purpose of the on-site surveys is to determine the areas in each school which are most resistant to extreme

(concluded on page 20)

If 1974 is anything like last year, tornado safety rules may be the most important tools in your preparedness package. Here they are:

KNOW THE WARNING TERMS

A *TORNADO WATCH* means weather conditions indicate tornadoes are expected to develop. Listen for further advisories, and stay alert for sudden strong wind, rain, hail, or a funnel-shaped cloud.

A *TORNADO WARNING* means a tornado has actually been sighted or indicated on radar. Take shelter immediately.

PROTECTIVE ACTIONS

■ **At home**, the basement usually offers the best shelter. Get under a sturdy workbench or table. In a home with no basement, take cover in the central part of the lowest floor in a bathroom, a closet, or under heavy furniture. Keep some windows open but *stay away from them*.

■ **In school**, go to an interior hallway on the lowest floor. Avoid auditoriums and gymnasiums with wide-span roofs.

■ **In office buildings**, go to an interior hallway on the lowest floor.

■ **In factories**, go the the designated portion of the plant offering the greatest protection.

■ **In shopping centers**, go to a designated shelter area, *not* to your parked car.

■ **If caught in open country**, move away from the tornado's path at a right angle. If there is no time to escape, lie flat in the nearest ditch or depression.

■ **Mobile homes** are particularly vulnerable to overturning during strong winds, and should be evacuated when strong winds are forecast. (Damage can be minimized by securing mobile homes with proper anchoring and tie-down gear.) If there is no shelter nearby, leave the mobile home area for low, protected ground.

Preparedness Agreement

A new agreement between The Salvation Army and the Defense Civil Preparedness Agency (DCPA) is expected to provide better protection and care for disaster victims, and to improve emergency preparedness planning and operations throughout the Nation.

Basic objective of the agreement is to bring about close, continuing cooperation between Salvation Army units and the civil preparedness agencies of local, State, and Federal governments. This includes not only mutual supportive action during and after disasters, but also participation of Salvation Army personnel in the pre-disaster planning activities of the civil preparedness agencies, and vice versa.

The long-established goals of both national organizations will be advanced by the agreement. The Salvation Army wants its resources and experience used to best advantage in helping disaster victims. DCPA has long emphasized that local and State governments should make full use of non-governmental protective resources such as those of The Salvation Army.

The agreement, signed by DCPA Director John E. Davis and Salvation Army National Commander Paul J. Carlson, specifically calls for:

- Close liaison of DCPA and its eight Regional Offices with The Salvation Army's national headquarters and four Territorial Commands.
- Encouragement of similar agreements between State civil preparedness agencies and The Salvation Army's 39 Divisional Commands, and between local government civil preparedness agencies and The Salvation Army's units.
- Coordination of Salvation Army disaster planning and operations with those of State and local governments.
- The assignment of Salvation Army personnel to the Emergency Operating Centers of State and local governments in times of disaster.
- Maximum Salvation Army assistance to State and local governments in emergency housing, feeding, and other care of disaster victims.
- Civil preparedness information to be furnished to Salvation Army units, and civil preparedness training to be made available to Salvation Army personnel.
- Participation of local Salvation Army personnel in the Community Shelter Planning and On-Site Assistance activities carried on by DCPA in collaboration with State and local governments.

DCPA also has mutual-supporting agreements, generally similar to the Salvation Army agreement, with 14 other Federal agencies or national organizations, including The American National Red Cross, Boy Scouts of America, National Defense Transportation Association, and the National Oceanic and Atmospheric Administration. – **Gordon W. Hirtle.**

Breakthrough on Burns

Burns can be one of the most painful and serious injuries known to man. People who are seriously burned require special medical treatment that frequently is not immediately available. Nowhere is this more true than at the scene of a major disaster.

The Defense Civil Preparedness Agency has been supporting a research effort for almost 10 years to make it easier to treat burn victims. The effort has now progressed to the point where it appears promising that a new chemical will be available by the end of 1975 for thermal burn treatment.

The research project began in 1964 when the Trauma Investigation Department, Biophysics Laboratory, Research Laboratories at Edgwood Arsenal, Maryland, and the Department of Surgery at the University of Maryland School of Medicine undertook a joint program to investigate problems of the expedient management of burn injury when regular surgical facilities might not be available or effective.

The project became the responsibility of the Medical College of Georgia in Augusta in 1968 when Dr. Carl Jelenko, Professor of Surgery, the principal investigator, moved there from Maryland. The Clinical Burn Unit of the Eugene Talmadge Memorial Hospital in Augusta plus the clinical and medical facilities of the college and the hospital are being used in the project.

Some five years ago, Dr. Jelenko reported the identification of a group of substances which prevented the normally marked increase in loss of water through a burned area. The key chemical is a skin "lipid" or fatty substance which is destroyed in burned skin. If this substance, eventually identified as ethyl linoleate, could be replaced in the surface of the burned skin, the water loss that frequently results in death could be reduced. This, in turn, would hasten healing.

In the intervening years, a combination of ethyl linoleate and other substances has been developed and tested, primarily on rabbits but with a few incidental tests on project staff members. Work has also been done on the containerization of the medical material. Now packaged in spray cans, it has passed every local test dealing with healing properties, toxicity, storage, and usability. Carcinogenic problems also appear to be nil.

The treatment is now being tested on human burn victims in Augusta. If, as expected, these clinical trials verify the merit of the treatment, the research project will result in a major breakthrough in disaster medicine.
–**Wilfred M. M. Minton.**

viewpoint

Recently, I attended the Third Annual Meeting of the President's National Health Resources Advisory Committee at Oak Ridge, Tennessee, where emergency medical services were discussed.

From the point of view of the Defense Civil Preparedness Agency, I stressed the need for preparedness to care for mass casualties resulting from major emergencies. I also stressed the desirability of having the emergency medical arrangements in a community compatible with the arrangements for other emergency services, such as traffic control, security, firefighting, search and rescue, public information, and communications.

In this connection, I cited the capabilities of health and medical professionals. In many instances, they have accomplished a great deal in establishing and operating emergency medical services in their own organizations and facilities. They undoubtedly can be of great assistance to civil preparedness directors in the overall emergency planning of local governments.

We discussed DCPA's support of emergency medical services planning, and I proposed two steps to increase that support, as follows:

1. Establishment of a central information collection point, where local governments and the health and medical community can find out how other localities are handling their emergency medical problems and get information concerning the programs of DCPA and other Federal agencies which impact on emergency medical arrangements in a community. As an example, an increasing number of communities are using the EOC's on a daily basis for the centralized or common dispatch of emergency vehicles—police patrol cars, fire trucks, ambulances.

2. Development of guidance to help local governments work more effectively with the private medical sector in the community to develop a local casualty care system for dealing with the day-to-day, "one or two cases at a time" kind of medical emergency, such as the routine traffic accident or cardiac arrest. I offered the services of DCPA in developing this guidance because we know a community will not be able to deal with the mass casualty aspects of a major emergency unless it already has an effective day-to-day casualty care system that can be expanded if needed.

I noted that almost 19 million people, about half of them students, have been trained in the Medical Self-Help Program administered for DCPA by the Department of Health, Education, and Welfare. This nationwide program is 13 years old and was designed to help people help themselves if professional medical care isn't available.

I came away from this meeting with an increased awareness of the importance of, and the great need for, community planning and readiness to care for mass casualties in any type of disaster. Both the medical profession and government must fulfill responsibilities for the public safety and welfare by establishing such readiness. I therefore urge everyone concerned to give this matter high priority in the days ahead.

Preparedness in this single aspect of overall civil preparedness can do much to save lives, prevent injuries, and relieve suffering in a community.

John E. Davis

John E. Davis
Director

New Disaster Course

A new, short but comprehensive course in crisis management for local government personnel will be available this winter under the Defense Civil Preparedness Agency's training and education program.

The course, "Local Disaster Preparedness," can be completed in three and one-half days. Local directors and others wishing to take the course should keep in touch with State civil preparedness agencies for announcements about time and place of classes and other enrollment details.

Identified and explained in the new courses are the principles and procedures to follow in obtaining assistance in disaster areas from Federal, State and other sources, including the National Guard, Reserves, and active military forces. The course also covers the preparation of a "hazard analysis" for a community, and points out measures for the prevention or mitigation of damage resulting from the hazards. Prevention of health problems in the wake of a disaster, and care of the sick and injured are other major elements of the course.

The DCPA Staff College mobilized a group of State and local civil preparedness experts from Mississippi, Michigan, Montana, New York, South Dakota, Texas, and California to assist in developing the new course. —Joseph V. Quinn.

Grappling with

As elements of the problem were reported, the terminology was a mixed bag. Was it an "emergency," a "crisis," a "disaster"? But even though it was difficult to nail down the "what" and "why" of the situation, one fact was clear: This and other nations face an energy shortage affecting the daily lives and lifestyles of millions of people. And in the United States, a number of State and local governments turned to their civil preparedness officials for help in managing the many difficulties resulting from the problem. Examples:

MINNESOTA – State Civil Defense Director F. James Erchul is the State Fuel Allocation Officer. And because Minnesota is literally "at the end of the pipeline" for fuel, he and his staff have been wrestling with the fuel shortage problem for months.

Using the State Civil Defense Emergency Operating Center as a focal point for various State government proople to work on fuel-shortage problems, the State Civil Defense Division functions as a fact-finding agency, meets frequently with industry representatives, and assist local communities in alleviating the fuel energy crisis. State Civil Defense activities also include inventorying fuel availability requirements for all State agencies, and developing channels of communications with refineries and suppliers, both domestic and international. At the State level, Minnesota is a pioneer in establishing an independent task force concerned with long-range requirements for fuel, facilities, and distribution.

NEW JERSEY – By executive order, Governor William T. Cahill created a State Emergency Fuel and Energy Agency, and placed it under the direction of J. Morgan Van Hise, Acting State Director of Civil Defense and Disaster Control.

The new agency, which reports to the Governor's Cabinet Committee on Energy, monitors shortages in the middle distillate fuel range, including kerosene, jet fuel, No. 1 and No. 2 diesel fuel, and No. 2 heating oil. In addition, the agency is responsible for providing advice on emergency issues and policies related to the shortage, coordinating the State's policies with Federal, State and local governmental units, developing and monitoring the State environmental conservation program, and encouraging and assisting fuel conservation action by government, business, industry, and citizens.

Local civil defense directors in New Jersey are responsible for coping with local hardship cases, such as reports from householders, retail merchants, and small business establishments that they have less than a one-week supply of fuel, and for referring special problems to State headquarters. All fuel supply problems from schools, industry, transportation, public utilities, and fuel oil dealers and suppliers go directly to the State agency where they are handled by State civil defense staff members, augmented by personnel from other State departments. In Trenton, the telephones seldom stop ringing.

MAINE – Only a few days after he was sworn in as State Director of Civil Defense and Public Safety, 32-year-old Timothy P. Wilson was ordered by Maine Governor Kenneth Curtis to set up a fuel allocation office as part of the civil defense structure.

By using some existing State civil defense staff members and hiring 11 more people, he set up a State Fuel Allocation Office, and soon the phones were ringing on an average of 300 times a day from 6 a.m. to midnight. As one staff member put it: "We're married to the telephones here."

In addition to coping with fuel shortage problems, the State civil defense staff, with the assistance of county and local civil defense directors, has catalogued emergency shelter spaces from one end of the State to the other for those who may have to leave their homes due to the fuel shortage.

RHODE ISLAND – Governor Philip Noel appointed Major General Leonard Holland, State Adjutant General and Director of the Defense Civil Preparedness Agency, as the Fuel Allocation Officer of Rhode Island. Setting up a 24-hour assistance program, General Holland and his staff concentrated on administering the Federal Mandatory Fuel Allocation Plan regarding middle distillate fuels, and responding to hundreds of requests for hardship assistance from oil dealers and individual householders.

IOWA – Governor Robert Ray designated the State Civil Defense Division to administer the mandatory middle distillate fuel allocation program. With Federal approval, Iowa established a State oil pool under the direction of Don Hinman, Acting Director of the Iowa Civil Defense Division. Under the program, oil may be directed to hardship end-

energy

users upon the recommendation of a State aliocatior. committee and the concurrence of a Federal allocation officer.

NEBRASKA – The State civil defense role is one of coordinating the State's activities in the field. The office conducts surveys through local civil defense organizations of governmental and nongovernmental agencies, schedules and conducts energy crisis meetings for Governor J. James Exon, and serves on the Governor's committee to monitor the mandatory allocation programs and to develop and promote energy conservation practices.

MONTANA – State Director of Civil Defense C. L. Gilbertson has full responsibility for the handling of requests for emergency fuel. All hardship cases involving home heating oil, stove oil, gasoline, and diesel fuel are handled by the State Civil Defense office.

WASHINGTON – Governor Daniel J. Evans assigned the State Department of Emergency Services the duty of administering the national fuel allocation program for the State. The State office, in turn, instructed all local directors to screen applications for emergency fuel.

MISSOURI – James H. Bash, State Coordinator of the Disaster Planning and Operations Office, Civil Defense, serves as Chairman of the Emergency and Shortrange Planning Committee of the Missouri Energy Council. His committee is responsible for handling grave energy problems of a shortrange nature, such as the complete absence of fuel for a hospital.

NORTH DAKOTA – Director Ronald D. Affeldt of the State Division of Emergency Services, is also the North Dakota Fuel Allocation Officer, responsible for coping with shortages in middle distillate fuels.

WASHINGTON, D.C. – To cope with the energy crisis, Mayor Walter E. Washington has established an Office of Petroleum Allocation in the city's Office of Civil Defense, directed by George R. Rodericks. The unit is responsible for implementing Federal regulations governing fuel allocation, serves as a point of contact for petroleum allocation information, requests, and petitions, and works to assure equitable distribution of heating oil and other middle distillates in the Nation's Capital.

CABLE WARNING

The Sloan Commission on Cable Communications estimates that, by the end of this decade, 40 to 60 percent of all TV sets in the United States will receive their signals through the medium of cable television.

Often referred to as CATV, (for Community Antenna Television), cable TV can provide a means for rapid transmission of civil preparedness emergency information by communities employing their CATV franchises for emergency-use purposes. Generally a local CATV agreement permits one or more government offices, such as the mayor, police, fire or civil defense, to have access to a hot-line telephone which is connected to the local CATV system. Voice transmissions of emergency messages are made over the hot-line preempting television programs over one, several, or all CATV channels.

Chanute, Kansas, with a population of 10,000 is the latest addition to the growing list of communities that have adapted such facilities for emergency needs. The Charute Television Company, serving 2,700 households, has made available to the Chanute Police Department the capability to preempt programs on all of its 13 channels to bring immeditely to the public any information relating to impending disaster. The Chanute Police Department has radio contact with the Kansas State Highway Patrol. Thus an emergency announcement by the State Highway Patrol, based upon information provided by the National Warning System (NAWAS) or other official sources, can be quickly passed on to the community.

One of the 13 channels is reserved for FM music, minimal advertising, and a display of instruments indicating wind direction and velocity, temperature, humidity, and barometric pressure. This channel operates 24-hours-a-day, every day. As a consequence, subscribers can leave their sets turned on during the night with diminished sound during impending storms and disasters. Should disaster threaten or strike, the studio can implement a 1,000 cycle tone which will provide an audio signal of sufficient strength to awaken the average individual and allow the voice announcement to be heard.

Lige Matlock, Chanute Chief of Police and also the Chanute Civil Defense Coordinator, is enthusiastic about the emergency use capability of the Chanute Cable Television system. The Defense Civil Preparedness Agency provided $1,500 to match the contribution of the city of Chanute toward the provision of the CATV preempt capability.

Information about uses of CATV that can be made by civil preparedness organizations and DCPA's financial assistance is provided in DCPA Circular 73-6 dated July 17, 1973. – **Lawrence M. Higgins, DCPA Plans and Operations.**

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The local coordinator ...who needs him?

BY CHARLES L. MULFORD and GERALD E. KLONGLAN

Research Sociologists
Iowa State University

How many of us expect to see a major flood, tornado, or other natural disaster strike our community this week, or even this year? Most of us do not really expect this to occur. Many share our apathy.

San Franciscans continue to ignore the fact that their city lies atop a major geological fault; in fact, some local service facilities in San Francisco as depicted in a recent T.V. program literally lie on the fault itself. Citizens in other parts of the country, the midwest, are annually threatened by hundreds of tornadoes, and the Mississippi and Missouri rivers threaten floods every spring. In spite of this, we know of no study that has ever indicated that many local citizens think of natural disasters as major social problems compared to such problems as drug use, crime, high taxes, and so on. However, John Doe Citizen can be counted on to personally chew out his mayor, call the governor to complain, and even write his congressman after a disaster strikes if he feels his community leaders were not prepared and "didn't come through" as expected in the emergency.

Pulling It All Together

Despite the fact that public opinion is fickle, preparation and contingency planning for local disasters must take place. But there is a very high turnover of local officials annually. While police, fire, and medical personnel have probably developed some sort of emergency plan for their sectors, few feel qualified or have the time to consider how well the various plans dovetail or how they will be coordinated in a disaster. Who can be counted on to handle these coordination problems?

In our research, involving interviews concerning disasters with hundreds of local officials and citizens during the past decade, we have observed again and again that these disaster needs are being met in may communities. But we have also observed that they are seldom met unless there is a person who knows the "game plan" for the entire community team and who has been assigned this coordinating role on a

The Iowa State University Department of Sociology and Anthropology has conducted Defense Civil Preparedness Agency research projects for several years, primarily on aspects of implementing civil preparedness programs in State and local communities.

somewhat permanent and stable basis. Local civil preparedness coordinators function within local government in many communities to help the various services and the public plan for disaster and to help local officials coordinate the services during an emergency. In many communities, they alone are trained and capable of performing these functions.

Questions, Questions

Several questions about these coordinators have concerned many public officials for some time. What's a local coordinator like? What does the local coordinator think about the importance of his job? What directions would he like to see civil preparedness take in the 1970s? What unique problems does the coordinator face? Finally, why are some coordinators so much more effective than others? We have found that public officials also have questions about civil preparedness itself. Officials wonder if having a coordinator will really help. Could bad feelings develop when efforts are made to "coordinate" activities in a disaster? "Coordination" for some means to direct, and some don't care to be directed.

During 1972 we held intensive personal interviews with 56 coordinators who had operated in recent natural disasters. Not one reported that his activities had negative repercussions for local government. Most indicated that their experience would help in any future disasters, even disasters accociated with war. Local executives should take special note of another finding from the disaster coordinator research: *Coordinators who hadn't developed bonds of trust and become involved in the communication network with local services were almost always passed over and ignored during the disaster.* Also, volunteers were less likely to operate effectively.

Community Knowledge a 'Must'

Some volunteer coordinators did operate in the recent disasters and were not passed over. In fact, most coordinators are not full-time paid. But the volunteers who were effective had lived in their community for a reasonably long time and had developed the trust we mentioned above. During 1972 we also had 478 local coordinators from all sections of the country complete a rather lengthy mailed questionnaire which they returned to us. Some of the results can be used to partially answer the questions we listed about local coordinators as well as many other questions, too. We are currently involved in an analysis of these questionnaires.

First, it's interesting to note that many coordinators feel that local officials do not understand their official disaster responsibilities. Coordinators also feel that their civil preparedness efforts are often not understood by others in local government. As you might guess, coordinators who spend more time "talking up their program" and encouraging others to talk to each other have many fewer problems. Most coordinators feel that local government should emphasize planning for all kinds of disasters that realistically could occur; they refer to this as the "all-hazards approach." Local coordinators aren't selling planning for just nuclear or natural or just man-made disasters. They seem to know that the public may "tune in" more quickly to something said about a natural disaster, but good coordinators recognize that lessons learned in one disaster have carry-over to other potential disasters.

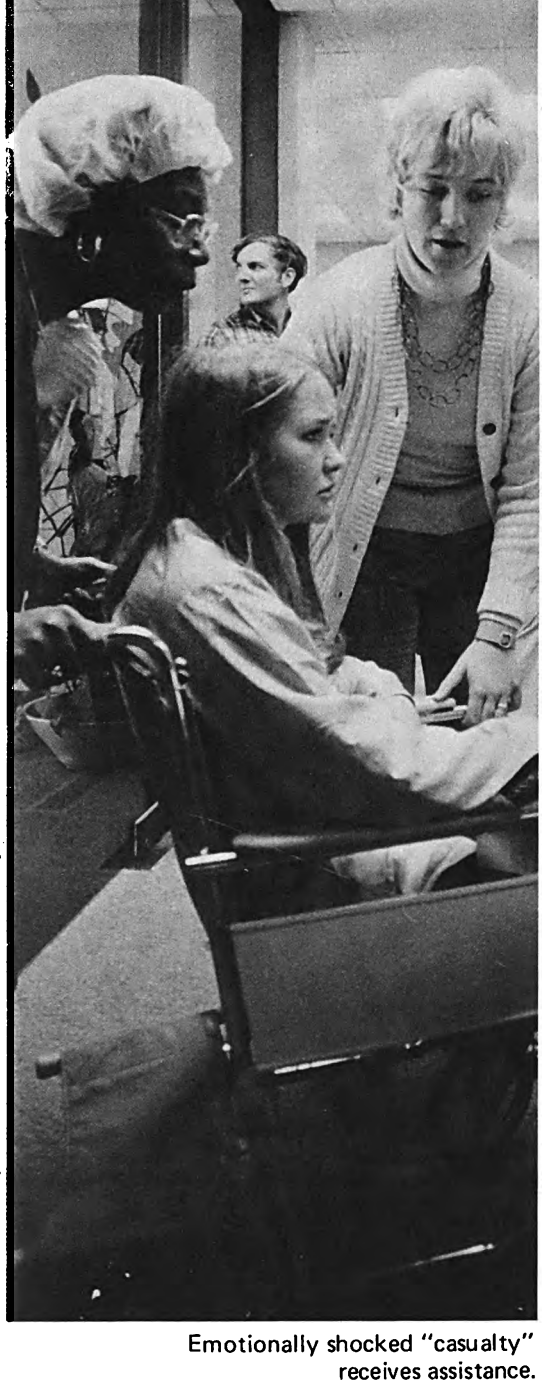
Budgets, Training, Effectiveness

Volunteer coordinators with only minimal local budgets have an especially difficult time building a system that can be depended on in an actual disaster. But many volunteers do surprisingly well. They have learned that too big a budget may mean they will be labled as an "empire builder" and that if they have too many people, it's darned hard to get other services to cooperate because the coordinator will be expected to do the job with his own people. A relatively small budget from State or Federal sources forces the local coordinator to get out in the local community to sell civil preparedness.

We have observed that many coordinators view themselves as members of an emerging profession. As such, they try hard to keep upgraded and trained. We have found that trained coordinators are more effective. We suggest to local officials that money for training is well spent and we encourage this. But we'd like to add that the coordinator isn't the only one who needs to know his civil preparedness responsibilities. Education for civil preparedness is necessary for all local officials and for private citizens, too.

Who needs disaster coordinators? All communities do. But civil preparedness coordinators are more effective in disasters when all local officials know their responsibilities and how their job relates to what others will be doing during an emergency.

(Problems, problems. Everyone has them, including local civil preparedness coordinators. The authors discuss typical local problems in the next edition of FORESIGHT.)



Richland County-Columbia Civil Defense Photo by Bill Broadwell

Emotionally shocked "casualty" receives assistance.

Disaster's Mental Casualties

By RUSSELL B. CLANAHAN

The recipe for big trouble was simple.

Take one school bus. Add 52 young children, without seat belts, as is true nearly everywhere. "Season" with a 17-year-old driver, suddenly confronted with mechanical trouble on the bus which causes him to swerve into a 10-foot-deep roadside ditch, the bus falling on its side. The kids are crying and bewildered. The driver, full of remorse, goes into shock.

Not a big disaster, as it turned out; even, perhaps, a "lucky" accident. The bus was going slowly, its fall was partly blocked by a tree, and the ditch was not filled with water. Though leaking gas and oil, the bus did not catch fire, due partly to the quick action of the driver in shutting off the ignition switch. Police, fire, and ambulance services responded well, and the hospital staffs competently examined the children for injuries, none of them serious.

The score: no deaths, a few minor injuries. Just another "might-have-been" emergency, like many in the United States each year.

Reality and Rehearsal

But those 52 school children, and especially their driver, were luckier than they knew. For the accident happened in Columbia, South Carolina—one of the relatively few but growing number of communities in the United States concerned not only with a coordinated, professional response to the physical needs of disaster victims, but also the psychological aftermath of their experience as well.

(concluded on page 14)

Disaster's Mental Casualties

Only 30 days before the accident, the Richland County-Columbia Civil Defense organization had sponsored the fourth in a series of annual emergency medical exercises, known as Carolina IV. In the three earlier exercises, many of the problems associated with caring for the physical needs of the Columbia area and its 325,000 people had been worked out, or were at least on their way to being solved. It was time to turn the spotlight on mental trauma—the lingering effect of a major disaster on the minds of its victims, often continuing over a span of months or years. This was the primary purpose of Carolina IV.

This trauma, which some psychologists dealing with disaster victims have begun to call "survival syndrome," was what was afflicting the driver of the school bus. He was overcome by guilt over the accident and went into emotional shock, even though he had successfully taken all actions he could to protect the children in his care. Mental health workers have seen the same phenomenon on a much larger scale after major disasters such as the Chicago commuter train collision of October 30, 1972, the flash floods in 1972 at Rapid City, South Dakota and Buffalo Creek, West Virginia, and the Tropical Storm Agnes flooding in Wilkes-Barre, Pennsylvania and surrounding areas in the summer of 1972.

University Students Participate

The Columbia area fortunately has not experienced a major disaster in recent times. However, as the capital city of South Carolina, and the seat of the 15,000-student University of South Carolina, it is a cosmopolitan city with a wide diversity of people and problems should a calamity occur.

This is why James W. DeLoach, Director of Richland County-Columbia Civil Defense, asked for University student volunteers to participate in Carolina IV. More than 200 responded.

The "plot" was simple. A simulated "bomb" explosion was set off shortly after noon on campus near the busy student center. Student volunteers, already made up to look like casualties, took their places in the plaza outside the building, writhing and calling out realistically. In addition, a small group of soldiers from nearby Fort Jackson also served as "casualties" to test evacuation procedures by helicopter to the fort's hospital.

Doctors, alerted to the "disaster," reported at the scene to perform a medical function known as "triage"—the sorting of casualties to determine how serious their condition was, and to establish priority of medical attention.

"Casualties" were then rushed by ambulance or National Guard truck to area hospitals. Each hospital has a working agreement with the Columbia Area Mental Health Center not only to send apparent psychological casualties over to the Center, but also to refer all telephone calls or personal callers to the Center for answers on the condition of the casualties resulting from a major emergency.

Mental Health Program Described

The Mental Health Center's disaster program, conceived and directed by Dr. Peggie Shealy, the Center's Associate Director, consists of three basic parts:

1. A psychological triage program, which involves sending a doctor-nurse team to the scene of the disaster if possible to identify victims suffering from mental trauma. Other personnel from the Center are sent to various hospital emergency rooms for the same purpose.

2. Psychotherapy at the Center for disaster casualties aimed primarily at opening the emotional flood gates to enable victims to "talk out" their feelings of guilt at having survived when loved ones were lost, remorse at the loss of loved ones, inability to face an uncertain future, and other acute anxieties.

(Gentleness with patients is vital. "A harsh word in a crisis situation," Dr. Shealy says, "can be magnified and remembered totally down through life." Sometimes, instead of total recall, Dr. Shealy added, "the mind may simply disengage but with something else happening, such as partial paralysis." The longer such trauma remains untreated, she says, the harder it is to cure.)

3. Finally, the Mental Health Center maintains up-to-date lists of casualties. Trained two-man teams of staff members answer inquiries, with one on the telephone and the other checking the lists. When a friend or relative is identified on the list, he is asked to come to the Center for further information. Professional social workers then discuss the situation with the relative or friend, taking care to avoid or alleviate the emotional shock which may result. Loved ones inquiring about fatalities are placed in the hands of psychologically trained clergymen who come to the Center during times of emergency. This system was activated to inform callers about the status of children aboard the overturned school bus.

Director DeLoach is fond of saying: "There is no such thing as an organized disaster." The corollary is also true for a disaster exercise. Carolina IV had both mixups and efficient operations, just as in real life. But, from the missed signals and human strengths and weaknesses of an exercise, disaster forces in the Columbia area learned much about what and what not to do in the complex management problem which is any major disaster.

If the next busload of school children is not so lucky, or Mother Nature wreaks havoc, disaster personnel will be working for real. Their teamwork will be that much better because of what they have already learned about caring for the physical and emotional needs of the Columbia area's people.

Here's a digest of news items on civil preparedness topics:

PREPAREDNESS STEPS – The Greenville (N.C.) County Council is considering a proposal for a Metropolitan Telephone system which would link law enforcement and civil preparedness agencies, and local news media in a "hot line" circuit. In an emergency, one official picking up the phone would cause all other phones on the circuit to ring, and automatically set up a phone conference. Idea of including media is to give them a head start in spreading news and official instructions and information to the public. (*News*, Greenville)... A National Weather Service official has announced that the NWS center in Montgomery plans soon to install a "little black box" capable of forecasting the approach of tornadoes. The "box" measures frequency and intensity of lightning flashes and feeds them to a computer which can forecast path of a tornado. Device is being used successfullyy in Oklahoma, officials say. (*Press*, Mobile)... The City of Riverside, California has converted an 11-year-old surplus bus into a mobile command and communications post under a LEAA grant of funds. In an emergency, the command post gives city officials links to police, fire, sheriff, and water departments, March Air Force Base, civil preparedness headquarters, local hospitals, and other emergency agencies. City communications director Rick Kiter says, the system "gives us communications with every service we'd ever want to work with." (*Enterprise*, Riverside).

SOVIET CIVIL DEFENSE – The *AP* reports from Moscow that "In the midst of decreasing East-West military tension, party and government officials have been ordered to campaign for a greater public awareness of civil defense requirements." The call came from what the *AP* termed an "unusual conference" in Moscow attended by Soviet civil defense "propagandists" and representatives of the news media, social organizations, the Communist party, and the government. Deputy Defense Minister (and head of Soviet civil defense) Col. General Alexander T. Altunin presided. The conference leaned heavily on theme of strengthening program of civil defense information for the public through joint efforts of civil defense staff, social organizations and Soviet mass media. The *AP* said that "Western specialists... had no recollection of any meeting of this kind having been reported in the Soviet press before." (*Telegram*, Bridgeport, Connecticut).

THE NUCLEAR THREAT – "The Russians are building their third new class of missile-firing submarines," reports the *Associated Press*. The announcement of the Soviet development came from Secretary of Defense James Schlesinger during remarks January 10 before a Washington meeting of the Overseas Press Club. The new sub, of the Delta class, is believed designed to carry 16 missiles with a 4,600-mile range, "some 1,600 miles longer than the best U.S. sub-launched missile" according to the *AP* account.

In January, the national news media carried extensive reports and comment on remarks by Secretary Schlesinger dealing with U.S. strategic plans. He spoke on January 10 in Washington to an Overseas Press Club luncheon group.

Mr. Schlesinger reported to the group that in mid-1973 there had been a change in targeting strategy... "We have targeting options which are more selective and which do not necessarily involve major mass destruction on the other side," he said. He explained that instead of responding to a Soviet first strike with "massive retaliation" against Soviet cities and population, U.S. response could be "selective" against military and industrial targets. Intention is to give U.S. options short of all-out war in event of nuclear confrontation. The Secretary reiterated that U.S. policy was to seek detente with the Soviets while maintaining an "equilibrium of forces," pending further agreements to limit nuclear arms.

PEOPLE – Memphis Police Inspector Nicholas J. Carimi, Jr., was appointed director of the Tennessee Office of Civil Defense by Governor Winfield Dunn. He succeeds Col Robert Fox, who served 20 years in the post. (*Commercial Appeal*, Memphis)... In Washington, Pa., Washington County Civil Defense Director Charles O. Bohner spoke out against "the lack of safety factors" in the County's schools.

He criticized lack of basements to provide some place where children would be protected "from flying glass and other materials in a storm." He noted also that basement rooms could be dual-purpose, to serve as fallout shelters in an attack, and as classrooms in peacetime. "In my opinion," Bohner said, "legislation is needed to make sure these factors are considered when building a school." (*Observer-Reporter*, Washington).

PROFITING BY EXPERIENCE – What has been happening in Pennington County, South Dakota, since the disastrous flood which took hundreds of lives in 1972? Civil Defense Director Don Martini listed some of the measures taken to be prepared in any future emergency, in a feature article in the *Rapid City Journal*. Among these are a remodelled operations center, improved radio links with other emergency agencies and hospitals, a periodic check on county supplies of blood, revision of local emergency plan, scheduling of a disaster preparedness exercise, development of more efficient records and forms, formation of a search and rescue team, acquisition of transport, installation of an emergency water system and public address system in the courthouse command post area, procurement of revenue-sharing funds to help rural fire departments, and an increase in the civil preparedness budget to two and-a-half times the pre-disaster level. – **Joseph V. Quinn.**

a special note...

There is a possibility that some of our readers received more than one copy of this 2nd edition of FORESIGHT. The reason is that, in establishing our distribution system, we attempted to honor both national and regional mailing lists.

We are working to eliminate duplications from the various lists, and will appreciate hearing from any person who received duplicate copies.

FCC STUDIES MEDICAL COMMUNICATIONS

The Federal Communications Commission has taken a major step toward establishing improved radio communications for the Nation's emergency medical services.

In the Federal Register of December 6, 1973, the FCC announced that "it is in the public interest that careful and prompt consideration be given to an effort to meet the communications requirements for medical emergencies."

At the same time, the Commission asked interested parties to submit comments on a proposal by the Office of Telecommunications Policy (OTP), Executive Office of the President, which calls upon FCC to establish a separate category of rules for medical radio services and to set aside frequencies in the VHF and UHF bands for the exclusive use of hospitals, ambulance services, medical personnel, and others with major functions in a medical emergency. The deadline for filing comments was January 31, 1974, with reply to the comments due February 15.

The OTP report noted that medical services now share overburdened frequencies with school buses, beach and ski patrols, common carrier standby and repair facilities, and other nonmedical emergency services.

Aim of the OTP proposal is to improve the lifesaving capability of the Nation's emergency medical services through improved and speedier communications capabilities.

In a report accompanying its proposal, OTP estimated that 15 percent of the annual 56,000 highway traffic deaths in the United States could be prevented by statewide systems of regional hospital centers supported by communications networks and ambulance systems with highly trained attendants. It was also estimated that 25 percent of heart attack and other emergency cardiovascular deaths could likewise be prevented, as well as 20 percent of other accidental deaths.

The standardized national radio frequencies could provide communications for units en route to the scene of an accident, ambulance dispatching and direction services, a system of rapid communications from the site of an accident to hospitals, paging systems for doctors, and frequencies which would permit doctors in hospitals to monitor the vital signs of victims en route to hospitals, and at the same time, they would allow instruction of medical attendants on emergency procedures.

"The findings and recommendations in the OTP... (report) are both extensive and urgent," the FCC announcement said. In addition, the Commission itself sponsored a

(concluded on page 21)

SPECIFICATIONS

COLOR: Pure Primary Blue (approximate).
Detailed color range data will be provided.

DIMENSIONS:	SIZES A	B	C
Length of bar	3″	12″	16″
Width of bar	¾″	3″	4″
Length of staff	2½″	9½″	12½″
White background (if required)	4″ sq.	14″ sq.	18″ sq.

All angles 60° Deviations in size must be proportionate.

LOCATION: For appropriate location on the ambulance see paragraph 7.3 *Ambulance Design Criteria Manual*[1] and Paragraph 3.16.4 of the *Federal Specifications for Ambulance—Emergency Care Vehicle*[2] KKK-A-1822 GSA-FSS.

1. Available from: Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402—Price 50 cents.
2. Available from: General Services Administration (3FRS13S), Bldg. 197, Washington Navy Yard, Washington, D. C. 20407.

NOTE: **"Star of Life" symbols are not available from the Department of Transportation. Stencils or decals for applying the symbol must be purchased locally.**

DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Star of Life

The familiar red cross on ambulances is being replaced by a new symbol called the "Star of Life."

The Department of Transportation's National Highway Traffic Safety Administration has adopted the "Star of Life," a blue six-barred design upon which is superimposed in white the Staff of Aesculapius, Roman god of medicine and healing, for use on emergency medical care vehicles. The symbol will be used on all emergency medical care vehicles purchased under DOT's Emergency Medical Services program as well as for all ambulances which have been upgraded to meet DOT's criteria.

In choosing the design, DOT decided not to use the traditional cross so as to avoid interference with the organizational identification of the Red Cross and provide a symbol which clearly identifies the emergency care vehicle or ambulance within the total spectrum of the emergency medical care system.

To develop the design and performance criteria for ambulances eligible to use the "Star of Life" symbol, the National Highway Traffic Safety Administration went to the National Academy of Engineering which, through the National Research Council, appointed a committee of physicians, ambulance operators, automotive engineers, and specialists in related fields.

In its continuing efforts to improve the safety of the motorist, DOT's National Highway Traffic Safety Administration also has developed a guide for a 40-hour course on "Crash Injury Management," for first responders to traffic accidents, usually law enforcement officers. The course is modeled on the 81-hour "Basic Training Program for Emergency Medical Technicians–Ambulance," reported in the January-February edition of FORESIGHT. – **Elbert Yee.**

CENTRALIZE DISASTER INFORMATION

By WILLIAM I. GREENER, JR.

Assistant to the Secretary
for Public Affairs

Department of Housing
and Urban Development

Disaster victims have more than enough problems trying to put their lives back together again without facing the challenge of sorting out the various recovery aids available. So, just as the many relief agencies have brought their collective recovery counseling services together at disaster assistance centers in stricken zones, it makes good sense to offer a centralized source of public information—that is, a central newsroom operation.

Since becoming Assistant to the Secretary for Public Affairs, Department of Housing and Urban Development, Mr. Greener has concentrated heavily on improving public information procedures followed by the Federal Disaster Assistance Administration (FDAA) after major disasters. FDAA, established within HUD last year from elements of the former Office of Emergency Preparedness, coordinates actions of all Federal agencies in disaster recovery efforts.

With transportation disrupted, the general chaos of a disaster zone, and the influx of various recovery programs—a situation usually completely new to the area—a reporter should not have to seek information and answers at various recovery agency locations. Newsmen should be able to go to a single place for all manner of recovery information, and that place should be the central newsroom operated by the disaster Public Information Officers.

That's a pattern that has been used in a limited way for several years, particularly on the most destructive disasters. This practice will be standard procedure for all disasters of same magnitude that are declared by the President.

At a meeting in Washington of the Federal information directors in August 1973, this decision was discussed, together with findings from the public information survey performed under authority of the Tropical Storm "Agnes" bill, P.L. 92-385. The survey, based on interviews with radio, TV, and newspaper reporters in four previous disasters, confirmed the desire of the media to seek information from bona fide Public Information Officers at a central location.

This is a way to avoid the release to the public of conflicting or confusing information; further, the news center should speed the flow of news concerning the availability and location of recovery aids and officials.

Public information activities should be coordinated to such a degree that information is disseminated to the news media from one location, regardless of the number of participating agencies that may be information sources. A centralized disaster news center—with Public Information Officers assembled from all concerned agencies—becomes a "supermarket" of sources of information for the media. If newsmen can get one-stop service, their job is simplified and the flow of information is speeded. This helps attain the public information goal: contacting each and every disaster victim.

Direction and supervision of the disaster news center is the overall responsibility of the Public Information Officer selected by the Federal Disaster Assistance Administration Regional Director. The Regional Director will be the immediate supervisor of the news center chief. As the Federal Coordinating Officer of the State-Federal recovery partnership, he is also charged with supervising the work of as many as 25 agencies. Ideally, the news center will be physically located in his disaster field office.

By obtaining and holding the attention of the news media, it is possible to make optimum use of the mass communication channels still available after a major disaster. By working with the media we are then able to convey the purest form of public information news a professional may ever be challenged to produce: news of where and how help is available to each and every disaster victim.

Protecting the Kids *(continued from page 5)*

winds and, therefore, offer the best available protection from tornadoes.

Most of the 2,400 schools surveyed to date are in Alabama, Georgia, and Mississippi, but the program also is under way in Florida, Tennessee, North Carolina, and South Carolina.

Under the program, a professional engineer, upon the invitation of a school superintendent made through the local and State civil preparedness offices, visits a specific school, surveys it, and then makes a drawing depicting the areas in the school that offer the greatest protection for students and staff members should a tornado strike. He presents the drawing to local school officials along with a slide briefing depicting typical damages incurred by buildings struck by tornadoes, and answers any questions relating to the surveyed school.

The whole process not only graphically demonstrates to school officials the need for tornado-safety planning, but also provides the school principal a specific tool to use in tailoring a tornado-safety plan for his particular school. – **Ted M. Walls**, DCPA Region Three.

Year of the tornado *(continued from page 2)*

program whereby teachers throughout the State are trained as preparedness instructors, where school boards require that all schools develop emergency plans for accreditation in the school system, and where children are taught tornado-safety actions and hold regular drills to practice them.

It's tye type of program that is growing in schools throughout the Midwest and the South, especially in the "Dixie tornado alley" that runs from Louisiana through central Mississippi into Alabama and northern Georgia–an area that has had the highest death tolls over the years from tornadoes.

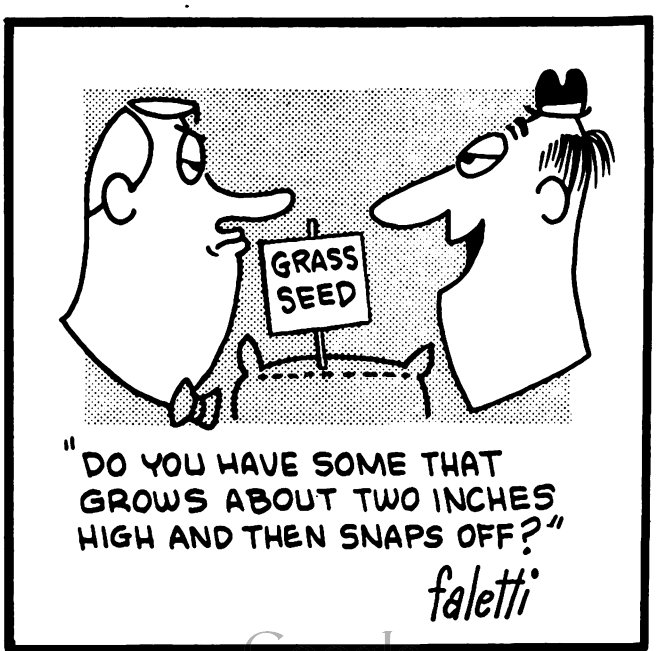
No State is immune from the deadly twisters. But largely because of the way in which the Rocky Mountains and the Gulf of Mexico affect the weather that produces severe thunderstorms and tornadoes, States in the South and Midwest are hit most frequently. Last year, Texas had the dubious distinction of having the greatest number of tornadoes: 147. Alabama, Georgia, and Mississippi suffered the greatest dollar loss from twisters. Only Alaska, Rhode Island, Utah, and West Virginia escape the storms.

Seven Good Rules

Toward the end of the year, the National Weather Service marked the "Year of the Tornado" by presenting its highest honor–the Public Service Award–to community leaders in Salina and Clay County, Kansas, for their preparedness actions that saved hundreds of lives when two tornadoes smashed through north-central Kansas the evening of September 25. One of those honored, Don Rechtenwald, Salina Civil Defense Coordinator, offered this tornado-preparedness advice for other civil preparedness officials facing the same threat from Nature:

- Establish and maintain good coordination with your weather service.
- Have a good organization of people to spot and report tornadoes when they threaten.
- Have a good communications system; communications are the key to any system.
- Install back-up systems for communications–antennas, generators, emergency power.
- Get a mobile home tie-down ordinance into effect.
- Make sure there are enough sirens.
- Issue warning *before* power goes off.

Good advice. And with the approach of the 1974 "tornado season"–usually April, May, and June are the peak months–thousands of preparedness leaders throughout the Nation were getting ready again for a possible sudden visit of the killer storm.



here comes

the auditor

BY LAVERNE RATHBUN
DCPA Audit Division

Contrary to the stereotype of the auditor who wears a green eye shade over suspicious eyes and arrives on the scene with the sole purpose of finding financial discrepancies, a primary purpose of today's Defense Civil Preparedness Agency auditors is to improve civil preparedness at all levels of government. As a result, DCPA auditors are concentrating more time and effort in operational or functional areas of the preparedness program rather than on financial matters alone.

Operational and functional auditing differs from financial auditing only in that the objective is to help management do a better, more efficient job—in short, get more civil preparedness for each Federal, State, or local civil preparedness dollar. This is the aim of DCPA auditors, located in each of the agency's eight regional offices, who make between 400 and 500 audits in State and local communities every year.

In a review of a project application for Federal matching funds to construct an Emergency Operating Center, for example, the auditor not only makes sure all financial terms have been satisfied, but also that procedures have been established to make effective use of the facility for communications and decision-making in an emergency.

An audit review of this type in an eastern city of 70,000 population pointed up that most of the space in the facility was not being used, the facility lacked essential emergency equipment and supplies, and there was no standard operating procedure for emergency use of the center. Also, there was no local civil defense director. When a representative of the DCPA Regional Office informed the local mayor of the situation, as described in the audit report, he took steps to move emergency units of local government into the available space, made sure the center was set up for effective emergency operations, and appointed a local civil defense director. The action came none too soon because a flood hit the community, and the mayor needed and used the facility and emergency procedures to cope with the situation.

Perhaps less dramatic but equally useful to local directors are suggestions that DCPA auditors may make when they visit local communities, including a description of procedures to follow in obtaining emergency equipment, assistance in handling such administrative matters as setting up time and attendance records and improved filing methods, and helping the local director obtain certain data he may need. Many of the suggestions are not the original thinking of the auditor, but come from a cross section of ideas picked up during his visits with other local directors.

Regular financial audits are still required and carried out, and DCPA auditors participate actively at State and local conferences and seminars to help State and local directors become familiar with Federal auditing concepts and procedures. But there's more to auditing than just checking the financial books, and DCPA auditors are working to meet their expanded responsibilities in the civil preparedness program.

FCC studies medical communications *(continued from 17)*

study which, FCC says, has developed a number of conclusions that "indicate the necessity for new approaches to achieve effective medical communications."

To provide the needed frequencies, the OTP proposal has recommended reallocation of three military frequencies and three frequencies shared now by the Amateur Radio Service and the Federal Government for medical services, the reallocation of four pairs of radio call box frequencies from the Local Government Radio Service to the proposed new systems, and the allocation of three presently unassigned frequencies.

All frequencies designated would be shared by government and non-government stations under regionalized, coordinated medical communications plans. – **Joseph V. Quinn.**

TOOLS YOU CAN USE

Publications

Nine-One-One: The Emergency Telephone Number. A Handbook for Community Planning, a publication to assist communities in the implementation of a 9-1-1 emergency telephone system, has been produced by the Office of Telecommunications Policy (OTP), Executive Office of the President, with the assistance of the Office of Telecommunications of the Department of Commerce.

The 62-page handbook includes guidelines for effective community planning, installation considerations, methods of operation, costs, procedures for initiating action leading to the establishment of a 9-1-1 answering center, and a checklist for action.

Copies are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, at $1.35 each, under Stock No. 2205-0003. For additional information, you may write to the Federal Information Center on 911, Office of Telecommunications, Department of Commerce, Washington, D.C. 20230.

Improving Your Community's Emergency Response: An Introduction to Disaster Planning, MP-67, a free publication containing background information for all involved in local emergency planning, is now available. Developed under the DCPA research program by Human Sciences Research, Inc., the 121-page manual covers techniques for improving operational readiness, guidance on likely social and psychological responses to disasters, suggested applications to civil preparedness planning, and includes a simple checklist for you to determine how your community rates in civil preparedness.

Initial distribution included DCPA Regional Offices and Staff College, State civil preparedness offices, and local directors representing jurisdictions of at least 100,000 population. Others desiring a copy may get one from their State civil preparedness office, or from the U.S. Army AG Publications Center, Defense Civil Preparedness Branch, 2800 Eastern Blvd. (Middle River), Baltimore, Maryland 21220.

Films

Twister (DDCP 20-282), a new 27-minute, 16mm color motion picture is a second version of the story of the 1970 Lubbock, Texas tornado. It differs from the first film version of the story ("Emergency Operation Center") in that it places more emphasis on tornado warning and safety actions to be taken in this type of disaster. It is considered to be more suitable for release to the general public, secondary schools, and local television.

Copies have been sent to all Regional and State offices. Prints also are available from the Army Audio Visual Support Centers (film libraries) on a short loan basis.

Respond (DDCP 20-283), a 23-minute, 16mm color motion picture explains many aspects of On-Site Assistance by depicting how a Federal-State preparedness team visits a mayor and his staff, and surveys local government agencies to check their emergency readiness plans and procedures.

U. S. GOVERNMENT PRINTING OFFICE : 1974 O - 532-393

The film is intended to stimulate initial interest in On-Site Assistance, when shown by members of a survey team who are available to fill in details and respond to specific questions. A single copy has been sent to each Regional office, Staff College, Puerto Rico, and the Virgin Islands, and two prints have been sent to each State. No copies are available from the Army Audio Visual Support Centers. *Respond* is *not* cleared for TV showings.

Staff College Courses

Here's the list of scheduled courses at the DCPA Staff College for the second quarter of 1974:

April 15-26 – Civil Preparedness Career Development Program–Phase III.

April 20-May 2 – Seminar for Metropolitan Area Coordinators.

May 6-17 – Civil Preparedness Career Development Program–Phase IV.

May 13-17 – National Programs for Civil Preparedness.

May 20-24 – Civil Preparedness Planning and Emergency Operations.

June 3-14 – Civil Preparedness Career Development Program–Phase II.

June 17-28 – Civil Preparedness Career Development Program–Phase I.

For information on specific courses, contact: DCPA Staff College, Federal Center, Battle Creek, Michigan 49016.

GIMME A PEEK!—School children crowd in for a look at one of the three-dimensional photographs in a new Defense Civil Preparedness Agency exhibit, "In Time of Emergency." The exhibit features scenes of floods, fires, earthquakes, industrial and transportation disasters, and environmental hazards, plus a film, "Earthquake!," that describes the 1971 Los Angeles area earthquake. DCPA has provided the exhibit to the California Museum of Science and Industry in Los Angeles.

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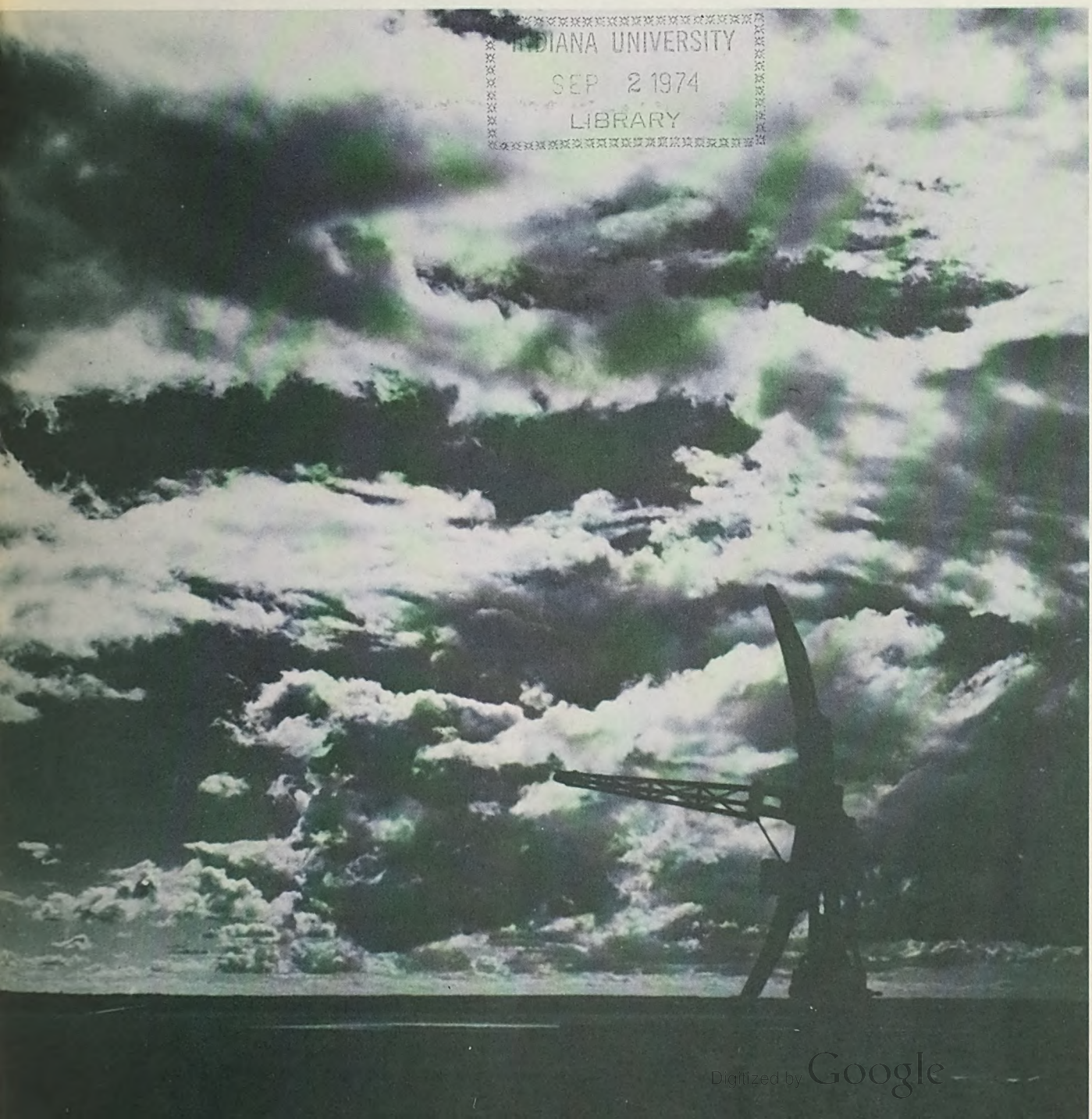
JULY / AUGUST 1974

Focus on Warning

THE DEFENSE CIVIL PREPAREDNESS AGENCY / THE PENTAGON / WASHINGTON, D.C. 20301



FOCUS ON WARNING

The subject of tornado warning was critical to anyone affected by the April tornadoes that roared up through middle America—the largest single outbreak of tornadoes in the United States in nearly half-a-century.

This article is based upon excerpts from an interview program for Dayton, Ohio television station WHIO-TV by Cox Broadcasting Washington Correspondent Andy Cassells, with particular attention to the views of Rep. Clarence J. Brown of the Seventh District of Ohio, which includes the tornado-devastated community of Xenia, and Dr. Robert M. White, Administrator of the Commerce Department's National Oceanic and Atmospheric Administration of which the National Weather Service is a part.

Congressman Brown

Administrator White

Mr. Cassells: Dr. White, what is the state of the art today? What can you tell us when a tornado may be coming to our area?

Two Key Messages

Dr. White: We can tell you two things. First of all we can tell you when to observe a "tornado watch" which means keep tuned to your radio, your television set. A "tornado watch" is a forecast that there will be high probability of the occurrence of tornadoes. We can give you this information anywhere from 6 to 12 hours in advance. In addition to that, we issue "tornado warnings." These are very short fuse warnings. The word "warning" means take cover. We can issue a "tornado warning" anywhere from a few minutes to a half-hour in advance.

Mr. Cassells: What do you need, Dr. White, before you actually issue a warning for a community?

Dr. White: A warning is only issued when a tornado has been positively identified. It has to be observed either by a cooperative spotter network of people in the community, or it has to be observed on the radar set. When you hear a warning, take cover. That's what it means.

Rep. Brown: You actually did a little better than that in Xenia, didn't you? I think they had a 40-minute warning, as I understand, on the sighting of the tornado down on the Cincinnati area.

Warning Time Assessed

Dr. White: That's correct. In this tornado situation the warning system did work very well. We were actually able to issue the "tornado watches" more than 12 hours in advance, and the warnings for many of the tornadoes. In the case of Xenia, the "tornado warning" was issued 40 minutes in advance. But our general capability, taking all tornadoes, is of the order of a few minutes to half-an-hour. This is enough time for a person to take cover.

Dr. White: And that, of course, is one of the reasons why forecasting the destruction from a particular tornado is very difficult because a tornado is very erratic—skipping and jumping around. But in these particular cases of the tornado outbreak of April which, incidentally, was the largest tornado outbreak we've had in the United States since 1925, the warnings were quite good. The outbreak was characterized by tornadoes that had reasonably long paths so that they could be tracked rather consistently. This is one of the things that allowed us to give as much advance warning as we did.

Enter, 'Doubting Thomas'

Mr. Cassells: I hate to play the role of the Doubting Thomas, Dr. White, but it seems to me that with today's sophisticated electronic equipment—satellites, we can broadcast the television picture from the moon—I have to think we can get better than a 30 or 40-minute warning when a tornado is going to strike a community.

Dr. White: There's no question that there is technology available now, some of which we are planning to introduce into our system, that can, in my opinion, improve the warning system. But I would caution against the idea that merely by having technology you can extend your ability to make advance warnings of tornado for an infinite period of time. The lifetime of a tornado itself is only, at the maximum, about an hour, so it becomes very, very difficult to make a forecast of the actual tornado very much longer than that. Now, we can give forecasts of general areas in which tornadoes are highly likely to occur and we do that. We call these "tornado watches," of course. I think we can advance the time at which we give the "tornado watches." I agree with you, there is technology that can improve the present warning system; we are introducing some of it. But I don't think it would be right to lead to expectations that we could give, let's say, 6 or 12 hours of advance notice of a "warning." That means a positive identification of a tornado. One of the things we must avoid in a tornado warning system is the idea of "crying wolf." People have got to understand that when they hear the word "tornado warning," there *is* a tornado. Take cover. Now if we give warnings and no tornado shows up, people will soon become accustomed to the idea, well, there's nothing to these warnings.

Concern With Terminology

Rep. Brown: I'm a little concerned about the wording. I'd like to see the term changed from "watch" to "alert." I have difficulty with the similarity between the words "watch" and "warning." Is there a way to correct that problem?

Dr. White: Well, we identified this in the latest tornado outbreak, and we have this kind of a comment from a number of people. We've had our investigatory team out looking at how the warning system performed, and the results we're getting is that the understanding of "watch" and "warning" varies from community to community. Now, I will admit there tends to be some confusion between those two words, and a lack of understanding. We need to do one of two things and we haven't decided which way clearly to go. We either need to put a lot more effort into the educational process so everybody understands what's the difference between "watch" and "warning," and we'll certainly do that. And we certainly do have to look to see whether there's not a better pair of words that we could use that might be less confusing than "watch" and "warning."

Rep. Brown: What coordination exists between your agency, Dr. White, the Defense Civil Preparedness Agency, and local civil defense so that the people get the word on a possible tornado?

Close Association With DCPA

Dr. White: We work very closely with the Defense Civil Preparedness Agency, and we have a rather formal agreement between the two agencies with respect to who has what responsibilities in the whole area from community preparedness, for example, to the actual dissemination of the warnings. This gets translated down to the local level where the meteorologist in charge of the local weather service forecast office works directly with the local civil defense coordinator. So the system is very closely knit. For example, we use directly the DCPA National Attack Warning System. In your State of Ohio, every weather station is on the NAWAS system, giving us direct access to public officials and other groups who are on the telephone warning network. So we have arrangements with DCPA for using their communications systems.

But I would make the following point. We need to get the message to people wherever they are—whether they're out having a picnic, out by the local river, in a school, in an office, at business, or at play—we have to get the word to people who are everywhere. There is no one single means of communication on which you can rely to get to everybody. Therefore, our strategy has been to use every possible means of communication that we can get our hands on—those operated by the Defense Civil Preparedness Agency, those operated by our own organization, and we have many communications systems of our own, and of course, the public communications media, radio and television, which have been just enormously helpful in assisting us in getting the warnings out to the people.

School Sirens Recommended

Rep. Brown: Of course, that's what's worried me in the Xenia situation. At 4 o'clock in the afternoon, a lot of people were out shopping, or they didn't have their car radio on, or they weren't watching television. They didn't get the warning. It seems to me there ought to be some kind of a system which could set off a siren system which would be heard by everybody in a heavily populated area. And the thing that I've come to the conclusion on is that

the best system for that would be in the neighborhood school, because schools tend to be located in every neighborhood of a sizeable community. If you had a siren at every one of those schools, not only would you scare the devil out of every one of those children in school and send them to the basement, but you would also be heard over a much larger area. People would respond to that siren and turn on the radio or television.

Dr. White: I agree with you that a positive alerting siren system would be very useful. We do use it in many communities where it exists. For example, it wasn't so many years ago up in the City of Minneapolis, where they had a very severe tornado situation, where we were able directly to trigger the siren system and get warnings out to people which were enormously helpful in saving lives. So I would certainly go along with you in the idea that we need to do a lot more in getting civil defense siren systems, positive alerting systems.

More People, More Problems

Rep. Brown: Dr. White, how much more of a problem are we going to have? Are we likely to get more tornadoes in our part of the country? Is there greater danger from tornadoes?

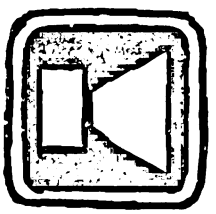
Dr. White: I think there is no question that the exposure is very much greater and will continue to be greater as our population grows and as our suburban areas grow.

Rep. Brown: You say exposure. There are the same number of tornadoes but more people that might be affected by them.

Dr. White: That's correct. I think it's a problem that is going to increase in intensity merely because of that fact. The number of tornadoes we have in any particular year, of course, is going to change. The average, for example, in your State of Ohio is about 15 tornadoes a year. But last year you had 43 tornadoes. So it will fluctuate very markedly each year.

Rep. Brown: But is that a pattern that is changing? Can we anticipate that this year we will have more destructive tornadoes than previously?

Dr. White: I don't think you can. There are some people who do believe there are some fundamental changes in the weather taking place. I don't believe the evidence is really adequate to come to that kind of conclusion. And those changes would be very slow, indeed, if they are taking place. I think the problem, just given our present situation, is severe enough to warrant taking whatever kinds of actions are needed to improve these warning systems and get the warning message out to the people.



Lifesaving Sirens

Tornado Watch: Tornado Warning!

Liore Maccarone, Director of Civil Defense for Hamilton County, Ohio, blew the sirens—125 of them—four times: the first a little after 4 p.m., the last around midnight on the night of April 3—a time that many would later describe as "the day of the hundred tornadoes."

Nearly everyone in Hamilton County (Cincinnati), was grateful. A few weren't, including a lady who complained, "... they shouldn't ring that thing and wake everybody up!"

Until that April day, the sirens, installed 18 years ago, had never been needed to alert the people to impending disaster.

First word that a tornado had been sighted southwest of Greater Cincinnati Airport, heading toward the city, was received in civil defense headquarters over the National Warning System.

Warning Pays Off

Next day, a headline in the *Cincinnati Enquirer* read, "Civil Defense Comes Into Own . . . And Those Sirens Pay Off."

Mr. Maccarone's decision "undoubtedly saved hundreds of lives and prevented thousands of injuries," the newspaper reported. "He also brought into its own the importance in an emergency of the Hamilton County Civil Defense . . . system, which he directs."

Libby Lackman, the *Enquirer* reporter, noted that "The 125 sirens cover 70 percent of the county's population. Thursday, a goodly number of persons in the tornado's path called the civil defense office in gratitude.

"The sirens, they said, had them turning on radio or television, then scurrying to basements if they had one; opening windows, then getting away from them to the center of the house if they didn't, or getting out of cars and taking refuge in a low area."

Many Letters of Appreciation

Later, Director Maccarone received many letters of appreciation from residents of Hamilton County. Examples:

"May I thank you and your staff for the wonderful service you rendered to all of us on Wednesday, this week."

(concluded on page 26)

foresight
July-August / vol. 1, no. 4

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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

John M. Connor
Production

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

STORM: Agnes on Film

The most destructive storm ever to strike the United States. Parts of seven States severely afflicted as more than 28 *trillion* gallons of rain fell in a few hours over the eastern part of the country, flooding 5,000 square miles of land. Thousands of people forced from their homes, some never to return. More than $3 billion in property damage.

The terrible floods of Tropical Storm Agnes that will forever mark the summer of 1972 in the family records of millions of people, especially in Florida, Virginia, West Virginia, Maryland, Ohio, New York, and Pennsylvania. And now the story—the people, the damage, the dismal defeats, the magnificent victories—it's all on film: STORM, a new documentary motion picture by the Defense Civil Preparedness Agency.

The film focuses on hard-hit Wilkes-Barre in the Wyoming Valley of northeastern Pennsylvania, describing how Maj. Gen. Frank Townend, Luzerene County Civil Defense Director, and his small staff organized a volunteer 10,000-person sandbagging operation and then evacuated the workers—and 80,000 people in the area—before the rain-swollen Susquehanna River engulfed the area, kept the people constantly informed by radio on what the situation was, and coordinated local recovery actions.

STORM runs 28-1/2 minutes. The film is available (ordering code: DD-CP-20-284) on a short-loan basis from Regional and State civil preparedness offices, and also from Army Audio-Visual Centers (film libraries.)

Educational Alliance

The Arizona Division of Emergency Services has experienced "enthusiastic acceptance and use of Defense Civil Preparedness Agency curriculum materials in Arizona's schools," according to State Director Carl N. Smith. "Administrator and teacher reactions have been most favorable, and the materials have been incorporated into school curricula."

There have been obstacles. "SALT I and detente have eroded teacher enthusiasm for presenting survival material related to the nuclear threat," Director Smith said. "But we found a solution: alliance—alliance between educational specialists in our office and junior high school science teachers. He described a pilot program conducted this year at Catalina Junior High School in the near northwest section of Phoenix, a school which is a part of the Alhambra School District.

At Catalina, a science teacher and an education specialist from the State Division of Emergency Services combined their talents and resources in teaching basic nuclear science to 160 seventh-grade students. The science teacher emphasized atomic structure and the periodic table of elements while the education specialist stressed nuclear radiation and protective measures. Both instructors used DCPA-approved visual aids. The team teaching effort included radiation shielding demonstrations and a detection exercise in which the class used monitoring equipment provided by the State Division of Emergency Services.

"Response to the effort is encouraging," Director Smith said, adding that the Alhambra School District plans to give a similar course to some 1,100 seventh-grade students next year. The aim is to eventually reach all 40,000 seventh-grade students throughout Arizona.

"An alliance of education and preparedness, imbedded in the common background of science, shows great promise of getting the point across in Arizona," Director Smith said.

He Said It. . .

"There must be clear evidence throughout the country that we, as a Nation, are prepared, that we have the spirit and will to do what is necessary to defend the country, and to insure its well-being. . . The spirit of preparedness must resound so that any potential enemy can discern it, and can see that he cannot set out on a cheap adventure at our expense."

Gen. Creighton W. Abrams
U.S. Army Chief of Staff

Vacation time is no time to be careless. Every year, lightning alone kills 150 and injures 250 Americans. Some points to keep in mind to avoid the Shock of Nature:

IF A THUNDERSTORM OCCURS:

Stay indoors. Don't attempt to take laundry off the clothesline. Keep away from open windows and doors, fireplaces, radiators, stoves, and metal pipes. Don't use plug-in electrical appliances like hair dryers, electric toothbrushes, or electric razors, and avoid using the telephone or television set.

If you're in a car, stay there. Automobiles offer excellent lightning protection.

Water is a conductor of electricity. Postpone washing dishes or taking a bath until the storm is over. Don't wade, swim, or go boating in a thunderstorm. If caught in open water in a boat in an electrical storm, stay low in the boat.

Don't use metal objects like fishing rods or golf clubs. Golfers with cleated shoes make particularly good lightning rods!

Don't handle flammable materials in open containers.

IF CAUGHT OUTDOORS:

With no buildings nearby, your best protection in an electrical storm is a cave, ditch, canyon, or under head-high clumps of trees in open forest glades. Remember, lightning has one persistent trait: it always takes the easiest path to the ground, so avoid hill tops, open spaces, wire fences, exposed sheds, and any electrically conductive elevated objects.

Stay away from lone trees. If only isolated trees are nearby, crouch in the open, keeping twice as far away from isolated trees as the trees are high. Also, isolated rain shelters, often found on golf courses or at picnic areas and campgrounds, are prime invitations to direct lightning strikes.

Tractors and other implements in metalic contact with the ground are often struck by lightning, so stop tractor work, especially when pulling metal equipment.

Should you feel an electrical charge—if your hair stands on end or your skin tingles—lightning may be about to strike you. Drop to the ground immediately.

IF LIGHTNING STRIKES:

Persons struck by lightning receive a severe electrical shock and may be burned, but *they carry no electrical charge and can be handled safely.* A person "killed" by lightning often can be revived by prompt mouth-to-mouth resuscitation, cardiac massage, and prolonged artificial respiration.

In a group struck by lightning, the apparently dead should be treated first; those who show vital signs will probably recover spontaneously, although burns and other injuries may require treatment. Recovery from lightning strikes is usually complete except for possible impairment or loss of sight or hearing.

Weather Modification

Rain, snow, fog, and hail were primary targets of weather modification during a recent 14-month period, according to a new report issued by the National Oceanic and Atmospheric Administration.

The 67 reported weather modification projects conducted in the United States between November 1, 1972, and December 31, 1973, took place in 19 states. Oklahoma and California had the most, 12 and 11 respectively. North and South Dakota followed with six each; Idaho, five; Washington, four; Michigan, Texas, and Utah, three each; Iowa, Montana, Oregon, and Wyoming, two each; and Arkansas, Colorado, Illinois, Nebraska, Nevada and New York, one each.

Under a law that took effect on November 1, 1972, all non-federally sponsored weather modification activities conducted in the United States and its territories must be reported to the Secretary of Commerce. The National Oceanic and Atmospheric Administration administers the reporting program on behalf of the Secretary. Federal agencies began reporting weather modification projects to NOAA on November 1, 1973, a year after the non-federal reporting law was effective. Therefore, only two of the 67 projects summarized in the newly published report were Federally sponsored.

Nearly half of the reported projects were intended to increase precipitation, while about a fourth were conducted to dispel fog. Airlines and airport authorities sponsored operational fog-dispersion programs at airports serving Seattle-Tacoma, Missoula, Spokane, Salt Lake City, Boise, Medford-Jackson, Sacramento, Omaha, Des Moines, Cedar Rapids, Moline, and Reno.

Dry ice was used in many of the fog modification projects. The seeding agent in most of the precipitation projects was silver iodide.

"Weather Modification Activity Reports—November 1, 1972, to December 31, 1973"—by Mason T. Charak and Mary T. DiGiulian of NOAA's Office of Environmental Monitoring and Prediction—describes the projects reported during the period and provides information on their purposes, locations, sponsors, operators, equipment, techniques, and seeding agents. Copies of the report are available upon request from the Office of Public Affairs, National Oceanic and Atmospheric Administration, Rockville, Md. 20852.—**Ann K. Cook**, National Oceanic and Atmospheric Administration.

Estimating the Damage

By BILLY R. MANNING / Director, Professional Advisory Center / Engineering Extension Service / Auburn University

The first steps toward recovery from any major disaster always involve an estimation of the impact of the disaster on a community. And as with any element of emergency preparedness, the time to do most of the job is *before* a disaster strikes.

The fact is, however, that many communities overlook this segment of preparedness until a disaster has dropped on their heads. Then in order to determine what recovery actions can be accomplished locally and the type and degree of assistance needed from State and Federal agencies, local officials must scurry around trying to put together from scratch an estimate of the damage. Frequently the result is that the damage estimation is grossly inflated, often by a factor of ten or more. This means that State and Federal agencies, called in to help, must spend considerable time rechecking and validating the estimates, often causing considerable delay in the recovery effort.

One Reason for 'Red Tape'

When you hear about "cutting red tape" (always meaning *Federal* "red tape," of course) in disaster-recovery efforts, keep in mind that a key factor in creating that "red tape"—in the sense of apparent delay in getting on with the disaster-recovery job—often can be traced to a poor system of estimating the damage.

To alleviate this problem, and as part of its regular emergency preparedness system, each local government should establish now—before a disaster strikes—a local Damage Evaluation Team. The personnel assigned to this team should be persons who have experience and skill in estimating the needs of individuals and the cost of repair and replacement of facilities. Team members should not be individuals who would have a direct or supervisory responsibility for a phase of disaster recovery. A Fire Chief or a Director of Public Works, for example, would be too involved in disaster recovery actions to respond to a request for damage estimates.

Get the Right People

Personnel from the Building Inspector Department and the Tax Assessors Office would be excellent candidates for a Damage Evaluation Team. Individuals from these offices are knowledgeable of construction and building costs, and most probably would not have a responsibility for immediate disaster-recovery actions. In certain rural communities the governmental staff may not be large enough to assist in both disaster recovery and damage estimation at the same time. In these cases, the Damage Evaluation Team could be made up of skilled volunteers from the community. For example, architects, engineers, contractors, real estate appraisers, and insurance adjusters would be excellent candidates for a Damage Evaluation Team.

Building an Information Base

Information pertaining to replacement cost, insurance, unit repair cost, and the number of people utilizing a facility is most difficult to obtain in the wake of a disaster. When data of this type is obtained under disaster conditions, it is normally exaggerated, resulting in unrealistic damage evaluation. For these reasons, pre-disaster data should be developed by the various departments in local government and furnished the Damage Evaluation Team.

This data should include the replacement cost of facilities, percentage of replacement cost insured, and the number of persons using the facilities. Pre-disaster data related to housing should be average replacement cost, average number of homes insured, average percent of replacement cost insured, and average number of occupants by census tract or subdivision. It is also desirable that the governmental departments furnish the Damage Evaluation Team with the unit cost for such items as road patching, cleaning storm sewers, and debris clearance. There are various ways to collect this type of data. Some communities have been successful in getting a local Regional Planning Council to develop the necessary information. (See "Viewpoint" and "Working With Regional Councils," FORESIGHT, May-June 1974.)

Red Cross Experience Cited

The need for obtaining pre-disaster data of this type is not new. The American Red Cross has recognized its value for many years. The Red Cross has frequently surveyed hurricane and flood-prone areas prior to a possible disaster to establish property values, insurance coverage, and population information. Should a disaster strike, the pre-disaster data is combined with on-site surveys to rapidly develop an estimate of the impact on individuals. Federal agencies, such as the Federal Disaster Assistance Administration, have found the Red Cross estimates to be accurate, and in many cases use these estimates to verify State and local estimates.

Training is an important consideration for damage evaluation. One way to assure that damage evaluation officials are familiar with local, State, and Federal responsibilities in disaster-recovery actions, and recognize the need for accurate damage estimates is through training sessions in the form of workshops or seminars. With the assistance of the Regional Federal Disaster Assistance Administration office and the Auburn University Professional Advisory Center, which is supported by the Defense Civil Preparedness Agency, State civil defense officials in Alabama and Georgia have conducted one-day workshops on this subject, and plan to conduct additional workshops in the months ahead. □

viewpoint

Emergency operations in the face of a major threat and during disaster are extremely important.

Equally important are the efforts of assessment teams that go into devastated areas to find out what worked and what didn't. The lessons learned can be applied for increased safety in the future.

Following the massive storm in early April in which tornadoes were spawned from the Gulf to Canada, DCPA personnel were involved in disaster work in many ways—with some 60 being loaned to FDAA.

In other action, five DCPA staff members went into hard-hit counties of five States—Alabama, Indiana, Kentucky, Ohio, and Tennessee—to determine the effectiveness of local civil preparedness.

The team members looked into structural damage, and the mobile-home tie-down concept; the effectiveness of warning and emergency communications; the results of on-site assistance as applied to disaster actions; and the emergency actions of local officials and the public.

A great disparity was found in preparedness capability—in the professionalism demonstrated by local directors, in whether or not Emergency Operating Centers and emergency plans existed or worked, and in warning and communications systems and procedures.

It was found that where available, the National Warning System (NAWAS) was used extensively for warning, with the National Weather Service making good use of the system. In one community, sirens were not sounded by local officials according to plan. And it was found that in many localities, even after receiving warning, people stood outside watching the storms approach.

The survey of damaged structures covered many different types of construction. Examples were an elementary school building 60 percent destroyed, an atomic power plant switching yard totally destroyed, and a multitude of houses and buildings at Xenia, Ohio—most of which were destroyed or damaged severely. None of the communities visited had mobile home tiedown ordinances.

Some interesting facts: Three smokestacks at the atomic power plant, which rise 680 feet, sustained little or no visible damage. The damaged one-story elementary school building, at Louisville, did not have a basement, as bedrock is encountered in that area 6 to 12 inches below the surface.

Warning worked extremely well at Cincinnati (Hamilton County). The system includes direct links with radio and television stations, and a radio network which ties together the Red Cross, hospitals, and city and county police. Sirens, and bells and lights, gave warning to officials and the public.

Many lessons were learned in the survey. One was that it appears worthwhile to press for organization of civil preparedness on a multi-county basis in areas of low population.

Another was that tornado spotters are invaluable; that sirens are vital for warning in urban areas; and that mobile (police, sheriff) sirens and public address systems were used effectively in rural areas.

The need for standby emergency power for radio and television stations was demonstrated clearly, as there were many instances of stations being knocked off the air when the need was critical, and being unable to return for some time.

Other conclusions of the survey were that (1) work must be continued to increase warning time, (2) greater awareness must be created among both officials and the public on actions to be taken in response to weather warnings, (3) the value of school disaster plans and emergency drills must receive continuing emphasis, and (4) disaster courses should be scheduled for local officials following major emergencies, while interest is still high.

Out of the chaos of disaster comes experience and knowledge on which to build for the future.

We in DCPA will follow up intensively on knowledge we have gained from the April tornado disasters.

John E. Davis

John E. Davis
Director

Better Tornado

A new significantly improved tornado detector, under development since 1971 by the National Oceanic and Atmospheric Administration (NOAA) at its Boulder, Colorado, Wave Propagation Laboratory, will be tested this year at 20 sites along America's "tornado alley."

A compact electronic instrument about the size of an office typewriter, the new detector is the latest model of an experimental device that scientists hope may eventually become a valuable tool for detecting and locating tornadoes. According to the project leader, William A. Taylor, the unit provides a directional indication in addition to detecting the electrical "bursts" associated with tornado-bearing thunderstorms.

Directional System Employed

The new detector uses a four-cornered array of antennas, instead of the omnidirectional antenna used in previous experimental tornado detectors—an antenna not capable of indicating the direction from which the electrical bursts were coming. The new device indicates the direction of maximum electricity to within 45 degrees. This will enable Weather Service personnel to intensify their radar scan in the indicated area, alert people there, and get ready for a possible tornado warning operation.

The old omnidirectional units were used experimentally in 1972 and 1973. During 1972, the units detected about three out of four tornadoes in their areas. Similar results were obtained in 1973, with the detectors correctly indicating three out of five tornadoes known to have occurred; however, they also produced false alarms at the rate of two false to one genuine.

While scientists emphasize the new device is not ready for full-scale operations, there is optimism it may develop into a valuable aid for zeroing in on storm cells capable of generating tornadoes. It has long been known that thunderstorms large enough to produce powerful tornadoes also generate huge amounts of electricity. By pinpointing intense electricity, the new detector may also assist investigators in determining the area of maximum tornado threat.

Clearer Picture Expected

"We expect the directional capability to give us a clearer and possibly more objective statistical picture of how the detectors are performing," Project Leader Taylor said. "We find that an absolute evaluation is just about impossible because our final objective statistics—the number of tornadoes detected compared to the number reported—depend on the extremely subjective quality of tornado reporting."

Most tornadoes are reported by observers, he explained, and some tornadoes reported from different vantage points may be the same twister. Also, in meteorological parlance, a tornado is only a tornado when it touches ground. Until then it is a funnel cloud, and these are frequently reported as tornadoes, as are some violent but non-rotational winds. On the other hand, many tornadoes occur unobserved are, of course, not reported.

Much Being Learned

In spite of this built-in statistical problem, much is being learned about how and how well the detector performs. "We now know that the electrical signals we detect are not associated with the vortex (whirlwind) motion in the storm that eventually produces a tornado, but come from another, unidentified source within the main body of the storm," Mr. Taylor said. "The source and the area of tornado activity may be separated by several miles. We also have indications now that the electrical signals emanating from a severe storm vary from one geographic region to another. For example, we get our best detector performance along tornado alley, where the storms and tornadoes run to the large, violent, highly electrical types. Down along the Gulf, where relatively weaker maritime thunderstorms produce many of the tornadoes, we don't do as well, but we think this problem can be calibrated out of coastal detectors."

1974 Evaluations

In 1974 tornado-detector evaluations will be performed at the National Severe Storms Laboratory at Norman, Okla., and 19 other NWS facilities: Montgomery, Ala.; Fort Smith, Ark.; Tampa, Fla.; Atlanta, Ga.; Evansville and Indianapolis, Ind.; Des Moines, Iowa; Topeka and Wichita, Kans.; Baton Rouge, La.; Minneapolis, Minn.; Springfield, Mo.; Grand Island, Nebr.; Oklahoma City and Tulsa, Okla.; Memphis, Tenn.; Fort Worth, Houston, and Lubbock, Tex.– **Mary U. Harris**

Detection

William L. Taylor, project leader at the Wave Propagation Laboratory, one of NOAA's Environment Research Laboratories in Boulder, Colo., calibrates a new electronic tornado detector. This latest model senses the electrical impulses emanating from a tornadic thunderstorm, and also shows the general direction from which the signals are coming.

The local coordinator

all hazards planning

BY CHARLES L. MULFORD and
GERALD E. KLONGLAN

Research Sociologists
Iowa State University

At this time of year, the news of major floods, tornadoes, and other natural disasters seem to fill our newspapers and are often seen and referred to on T.V. and radio. It isn't surprising that many local officials and some local civil preparedness coordinators seem to "tune out" when they hear someone talk about the continued importance of "all hazards" planning compared to planning for the particular kinds of natural disaster that either occurred most recently in these communities or that struck some nearby community.

People who use the term "all hazards planning" mean that communities should conduct a hazards analysis and be prepared for the whole range of possible disasters that could strike: (1) nuclear disasters, (2) natural disasters, and (3) man-made disasters—and not plan only for a particular kind of disaster. For example, we know that tornadoes occur frequently in the Midwest where we live and are feared by many people. But we certainly hope that our local officials are planning so that Ames, Iowa can also respond to other possible disasters that have some reasonable chance of occurring, e.g., a possible nuclear attack, flash floods, fires, industrial accidents, or an accident at the atomic laboratory located here. We can readily understand why the coordinators react this way.

'But How Will That Help?'

This situation in which some are only concerned with a specific type of disaster reminds us somewhat of a little boy during his first day in school. The teacher announced she knew some would have to use the restroom, and that they should hold up one or two fingers when necessary. The little boy in question remarked: "But how is *that* going to help?" How can "all hazards" planning help; is it really relevant for local communities?

The Iowa State University Department of Sociology and Anthropology has conducted Defense Civil Preparedness Agency research projects for several years, primarily on aspects of implementing civil preparedness programs in State and local communities.

Through our research we have been able to talk with many coordinators about their disaster priorities and experiences. A mailed questionnaire was sent to a representative national sample of 478 coordinators in 1971-72; and we conducted personal interviews with 126 local coordinators from four midwest States whose communities had actually experienced a disaster during the same time period.

Let's first turn to the ideas of those coordinators who have actually operated in a disaster. These local coordinators reported that their experiences in natural disasters had increased their capacity to plan and respond for other natural disasters. Nearly half of the coordinators (45.8%) stated that the disaster had provided a learning situation for themselves and a chance to further train local officials. About 40 percent stated that their disaster work pointed out the need to organize and plan better. Not a single coordinator stated that the disaster experience had decreased his capacity to respond to other natural disasters.

Actual Experience Helps

These local coordinators also felt their natural disaster experience had increased their ability to respond to nuclear disasters. Most (69.3%) stated that the natural disaster had helped them be better prepared for nuclear disasters by: (1) providing a learning experience and helping train people in disaster operations, (2) helping them learn to plan and organize better, and (3) increasing the recognition of civil preparedness in the public's eye. Only a small group (11.1%) reported that natural disaster had not helped them be better prepared for nuclear disasters.

At the same time, the local coordinators reported that planning for nuclear disasters had increased their capacity to respond to the natural disasters that struck their community. The nuclear planning had contributed: (1) by increasing their capacity to plan and organize, (2) because many disasters require the same equipment, (3) because nuclear planning had helped get public interest and awareness, and (4) because the nuclear planning got civil preparedness personnel working closer to local officials. Emergency Operations Simulation exercises, which had mostly been nuclear oriented, were reported to have been useful for the same reasons.

All Hazards Approach Is Best

In summary, the responses of local civil preparedness coordinators indicate that they think that planning for nuclear and natural disasters tend to complement each other to at least some degree. We wouldn't want to be caught "second guessing" the local coordinators and have very little to add to what they say except for one point: If there is some carry-over from planning for one disaster to planning for others, it seems logical that the planning emphasized for most communities should be broad enough in scope to be relevant for many potential disasters. In other words, rather than to zero our planning in on only one type, such as planning for a particular kind of natural disaster and hope for carry-over to other disasters, it seems it would be wiser to emphasize an "all hazards" approach. We will, of course, leave the planning itself for the experts. However, the planning could, it seems to us, include general concerns thought relevant for all disasters as well as components or annexes for specific disaster scerarios.

From our study with the 478 local coordinators, most of whom have not had disasters, we gain some other interesting points. Most feel that the "all hazards" approach is best for them compared to emphasizing only nuclear, natural, or man-made disasters. The typical local coordinator thinks that State or Federal personnel should also emphasize the "all hazards" approach. However, fully one-fourth of the 478 local coordinators stated that the Federal level should primarily emphasize nuclear planning.

To sum up, it appears that the typical coordinator who has not operated in a disaster also feels that the "all hazards" approach is best for him, but a fairly large proportion feel it is quite legitimate for the Federal level to emphasize nuclear planning.

We can now restate the little school boy's question, "But how is *that* going to help?" We are certain that as the teacher explained her "all hazards" approach in a little more detail, the little boy found it useful in meeting his needs.

(Local coordinators must make a number of specific plans and preparations for disasters. The authors discuss this subject in the next edition of FORESIGHT.)

Picking Up the Pieces

By RUSSELL B. CLANAHAN

When major disasters in unprecendented numbers mushroomed across the United States last April, the "Invisible Men" of the Defense Civil Preparedness Agency were an important part of the massive Federal professional response.

Coupled with the equally vital but often unsung work of State and local civil defense personnel, more than 60 DCPA staff members from the regional and national offices were on the job helping victims of tornadoes in the Midwest and floods in Mississippi.

DCPA Staffers Respond

Included in this work contingent were 57 DCPA personnel loaned in April to the Federal Disaster Assistance Administration. Their expertise in preparing for man-made or natural disaster qualified them to direct Federal disaster assistance centers, coordinate the release of disaster information to victims and the public, and perform other specialized jobs. Often, these were the "invisible" but vital persons involved in arranging for disaster relief work by other public and private agencies when and where needed, and setting up operating facilities.

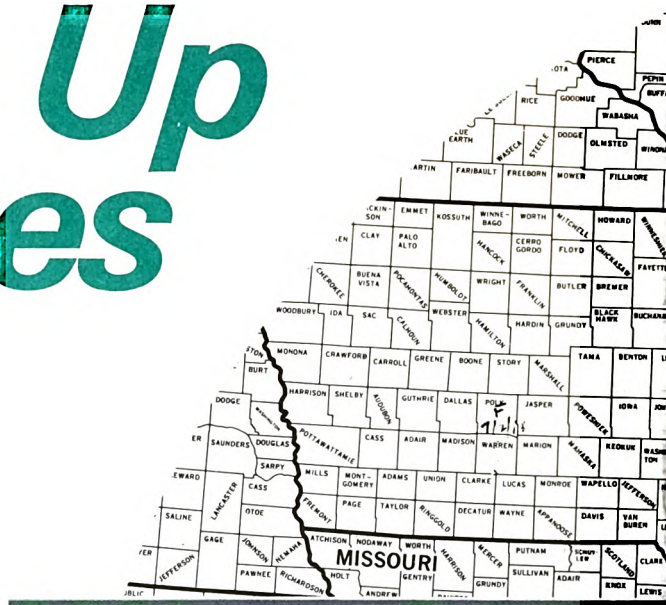
The need for disaster work was immense.

A Lethal Day

April 3 proved to be the second most lethal day of tornadoes in American history. More than 80 twisters devastated parts of the Midwest and South, killing 327 persons and injuring 6,142, according to American National Red Cross statistics. Total property damage for that day was estimated at more than $1.3 billion.

Nature followed up this haymaker with an Easter Sunday punch at southeastern Mississippi, where floods April 13-16 centering in the Hattiesburg area took two more lives and injured 11. Twisters also took a swipe at four counties in Wisconsin on April 21, costing another two lives and injuring 44.

Altogether, the toll from these disasters in April was 331 killed, 6,197 injured, and 32,591 families affected by the disasters and requiring help of one kind or another. And this didn't count lesser floods in North Dakota, West Virginia, and along the Lake Erie shoreline; flash floods in Hawaii; the gas explosion of a 25-story building in New York City; or a minor earthquake near Mattoon, Illinois the same night as the April 3 tornadoes and felt as far away as Chicago.



TORNADO CLEANUP / Ohio National Guardsman assist in debris removal in the wake of the tornado that smashed into Xenia.

DISASTER ASSISTANCE CENTER / At Hattiesburg, Mississippi, representatives of Federal agencies work to help people who suffered losses from the April floods in the area.

Disaster Teams In Action

As various agencies of State and local government joined with the Red Cross, Salvation Army, and other disaster services to meet the immediate threat, Federal teams entered the disaster areas with a particular eye on the longer-range needs of victims. Their reports eventually resulted in presidential declarations of 187 counties as tornado disaster areas and 34 as flood disaster areas, or a total of 221 counties in 12 States.

Under Federal disaster-relief legislation, a whole symphony of governmental services becomes available to local governments and individual disaster victims in declared major disaster areas. Communities can apply directly to the Federal Government for funds to restore local disaster-damaged public facilities, but individuals and families apply through Disaster Assistance Centers set up where the victims are.

The "conductor" in each of these Centers is the manager assigned by the Federal Disaster Assistance Administration—a "conductor" in this case who is also responsible for setting up the "concert hall." Usually schools or community centers are selected as Disaster Assistance Center sites. Most of the 57 Defense Civil Preparedness Agency personnel on loan to FDAA managed Disaster Centers.

Disaster victims applying at a Center are greeted and registered by volunteers at the door, and usually receive printed information on such matters as the services available to them, and how to clean up and restore their damaged homes. Then the Center manager or one of his assistants routes the applicant to the first of several stops within the array of Federal, State, local, and voluntary service agencies which have representatives at the Center.

Many Services Offered

Key to the successful operation of all these centers was the wide variety of services offered to disaster victims to meet their diverse needs. For example, a family with a disaster-devastated home could arrange for debris removal through local government, temporary housing rent-free for up to a year from the Department of Housing and Urban Development, and determine their eligibility for a 5 percent loan from the Small Business Administration to restore homes or businesses. A family could also apply for State unemployment compensation if members were out of work because their place of work was knocked out by the disaster; find out about casualty loss refunds on their income tax; obtain food stamps and welfare benefits if qualified; and inquire about medical care, VA-insured mortgages on damaged homes, and other veterans' benefits from the Veterans Administration or in some cases from the Disabled American Veterans. All this could usually be done at one Center.

Information was also available at many Centers on family eligibility for claims under private casualty insurance plans, and legal advice from the Young Lawyers Section of the American Bar Association.

For families whose recovery resources had been wiped out by disaster, free help was also available at each Center from the American Red Cross, and usually from the Salvation Army and Seventh-Day Adventist disaster services, as well.

'Organize While Operating'

Although Center managers usually had some difficulty in getting into operation—"you had to organize while operating," one explained—they reported relatively few sour notes once in operation, and generally harmonious relations among agencies within Centers. The unexpected was usual, such as the pregnant girl at a Mississippi Center who fell down the stairs and had to be driven to a hospital by the Center manager.

One problem encounterd by managers of Disaster Assistance Centers was near universal. They were forced to rely on local volunteers to register disaster applicants—a very important job requiring tact and a genuine interest in the victim's problems. Sometimes the quality of volunteers was high and at other times only marginal, due to high turnover rates and prior commitments by volunteers. Training of volunteer replacements was a constant problem.

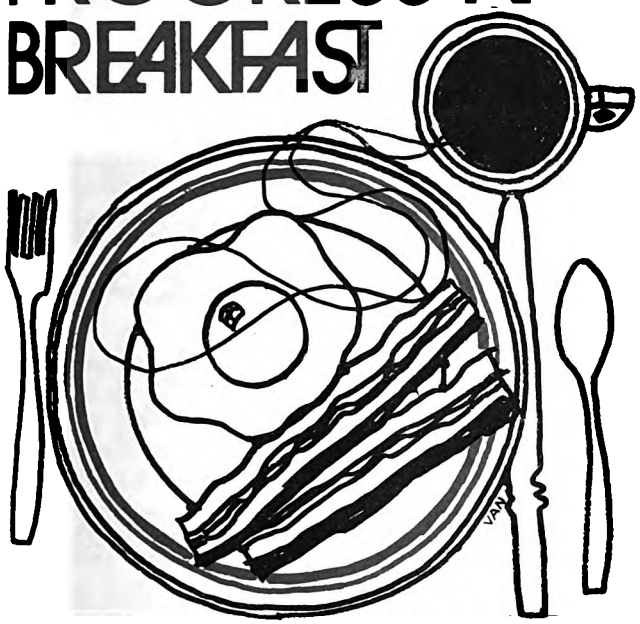
Center managers who worked in Alabama had high praise, however, for the work of staff members of the State Department of Pensions and Security, who are trained to man the Disaster Centers and register applicants. These personnel regularly hold exercises in emergency responsibilities, and after a disaster, go out house-to-house to inform people about services available and to get them to the Centers. Some Center managers in their reports urged other States to adopt this practice.

'Major Contribution' Cited

The success of the DCPA personnel assigned to FDAA in meeting problems large and small was attested to in a letter from FDAA Administrator Thomas P. Dunne. He wrote to DCPA Director John E. Davis that "the magnitude of this crisis required the augmentation of our staff by responsible individuals capable of acting quickly and effectively in the disaster situation. DCPA personnel working in our Regional and Field offices and Disaster Assistance Centers have made a major contribution to the success of the disaster relief effort. I particularly appreciate the long hours, the hard work and the professionalism they have brought to this task."

While the United States is never likely to experience many calamity-laden months such as last April, there is a yearly rhythm of springtime tornadoes and floods, summer and fall hurricanes, and other disasters such as earthquakes at any time that makes emergency planning and preparations a "must" in America. When such disasters occur, trained disaster specialists from DCPA, FDAA, and other agencies are ready to step in and help the people pick up the pieces. It's never a happy job, especially for the people hurt by the disaster. But it's an essential part of human and community recovery when disaster strikes. □

PROGRESS AT BREAKFAST



By FRANK H. SPINK, JR.
Director of Fire and Emergency Preparedness
Kansas City, Missouri

Disasters don't recognize jurisdictional boundaries. This is especially true in a two-State, seven-county area such as metropolitan Kansas City, which is subject to sudden, severe weather conditions in addition to the other hazards associated with an urbanized, industrial area. Varying legal and jurisdictional responsibilities compound the problem of planning and cooperation necessary to meet crises. Further, with the number of legal entities involved, communication of information between agencies presents a real problem.

To provide a forum for the dissemination of the latest concepts and for the exchange of ideas and methods, the Emergency Preparedness Division of the Kansas City Fire Department inaugurated a series of monthly breakfast meetings for concerned agencies from surrounding communities. Hosted each month by a different member of the group, the 125 representatives have the opportunity to acquaint themselves with the latest information and operational techniques used by area Federal, military, and local civil defense organizations. The informal atmosphere has provided the catalyst necessary for the exchange of ideas and the development of personal relationships so necessary in a metropolitan, multi-county, duo-State area such as ours. A few examples:

Medical, Warning Services Improved

Programs were presented at the breakfast meetings by Fort Leavenworth and Fort Riley on the use of MEDEVAC helicopters to remove victims from disaster sites to area hospitals. As a result of these presentations and following cooperative efforts with the Aviation Division of Fort Leavenworth and the Kansas City Area Hospital Association, helicopter landing sites were identified and exercises conducted with four area hospitals. Plans call for the expansion of the program to cover as many hospitals as possible. Development of this operation has given us a viable alternative to supplement the limited ambulance services available to the metropolitan area.

As a result of contact with personnel for the National Weather Service, we were able to acquire a Flash Flood Alarm System and secure a Memorandum of Understanding to cover the operation of this system. In addition, an agreement between the National Weather Service and the Kansas City, Missouri, Fire Department will provide rainfall data gathered at various fire stations for more accurate flood forecasting. Fire personnel have also been trained by the Emergency Preparedness Division as weather spotters, providing a comprehensive network for more thorough evaluation of severe storm conditions.

A better understanding of the roles of the Red Cross and the Salvation Army was obtained after breakfast meeting presentations were made by representatives of each organization. The information exchanged and subsequent contacts provided us with the knowledge to determine the type and extent of participation that could be anticipated in an emergency.

We have also gained new insights and concepts about the operation of our Emergency Operations Center from visits with Johnson County, Kansas, Emergency Services; Wyandotte County, Kansas, Civil Defense; and Defense Civil Preparedness Agency Region Six field office personnel. New avenues for the development of our plans and notification techniques were developed as a result of these experiences.

Breakfast Partners Help Again

In November 1972, a team composed of representatives from the DCPA Region Six office at Denver and the Missouri Disaster Planning and Operations Office conducted an On-Site Assistance Survey in Kansas City. As a result of their efforts, an Emergency Readiness Report was completed and submitted to the City Manager in March 1973. The report included recommendations that 34 specific actions be taken to improve Kansas City, Missouri's preparedness system. Two-thirds of these recommended actions have been or are in the process of being implemented. And many of these improvements have required the cooperation and assistance from agencies participating in our monthly breakfast meetings.

The task of preparing the community for disasters is an endless one. I feel that the cooperative efforts put forth in behalf of the metropolitan area will pay off for each and every jurisdiction. By pooling our capabilities, we can make more efficient use of the resources of each community to help our people should a disaster strike. And for us in metropolitan Kansas City, one of the most important steps we have taken is the rather simple one of breaking bread one morning every month with our many colleagues in civil preparedness. □

MOBDES at Fort Worth

Once considered nothing more than just a good plan on paper, the MOBDES program of the Fort Worth and Tarrant County, Texas Office of Civil Defense has blossomed into a first-class story of successful motivation and tangible results.

Originally allocated 10 Air Force Reserve MOBDES augmentees, the Tarrant County civil defense jurisdiction, which includes Fort Worth and 34 other incorporated northeast Texas communities representing more than 700,000 people, has now corralled 14 MOBDES personnel.

Reservists in Preparedness Role

The Civil Defense Military Reserve Mobilization Designee program—MOBDES, as it's called in government shorthand—was initiated two years ago by the Defense Civil Preparedness Agency and the Army, Air Force, and Marine Corps Reserves to augment State and local civil preparedness staffs through a program of training and on-the-job work assignments leading to Reserve duty credit. It is related primarily to general war preparedness, but also pays dividends in peacetime emergency preparedness. In case of a national emergency, MOBDES augmentees have "hip pocket" orders calling them to active duty and assigning them to assist local government.

Heading up the Fort Worth-Tarrant County MOBDES program are Robert E. Lord, the area's civil defense coordinator, and his plans and operations officer, N.T. Shirley.

"Day-to-day civil defense liaison with the many communities in Tarrant County is a difficult job," Coordinator Lord emphasized. "If a major disaster should occur within the county, necessary and essential liaison would be critical. To meet these emergency operational demands, we feel that pre-planning, pre-manning, and pre-training must be accomplished if we are to meet the anticipated demands during emergency operations. It appears that, once trained, these MOBDES officers will fill a long-standing void in our emergency operating capability."

Spotlight on Training

Of training, it can be said that the Fort Worth-Tarrant County MOBDES program is right in the thick of the action. Most MOBDES augmentees have already been to the DCPA Staff College at Battle Creek, Michigan. Some have also attended the Fallout Shelter Analysis school at Fort Hueneme, California. Also, regular training sessions are conducted locally.

Ultimate aim of the program is to establish a maximum operational capability for each man so that in time of emergency he can fit right into the important job of assisting primary city and civil defense officials.

Of the 14 MOBDES augmentees on board, five have been designated as so-called "precinct civil defense liaison officers." In the event of a disaster, such as a tornado, each of the five men has been assigned to act as an assistant or advisor to government officials in communities within his precinct.

Mayors Get Assistance

"In effect, the mayors of these communities can now be assured of having a civil defense staff advisor at his elbow during a disaster," Mr. Shirley said. "In the past, if a tornado swept down on any six or eight of these incorporated cities, we were unable to render full assistance because of a lack of enough trained personnel. Our MOBDES augmentees are proving to be perfect fill-ins for this type of assignment."

While Fort Worth's MOBDES personnel have not been involved in any actual disaster assistance service to date, they have assisted in one relatively unpublicized incident involving, of all things, unidentified flying objects (UFOs).

According to Mr. Shirley, the incident occurred unexpectedly during a weekly MOBDES training session at the Fort Worth-Tarrant County Civil Defense headquarters.

"I had just passed out some reading material to the men and was heading down the hall for a drink of water when I happened to look through the window of the police dispatcher's room and noticed their switchboard was all lighted up," Mr. Shirley said. "When I inquired as to what was going on, one of the dispatchers told me they were being besieged with calls about UFO sightings and were unable to conduct their normal police business."

"Right then and there, the thought hit me that this might be a perfect opportunity to give our MOBDES augmentees a little action, and at the same time assist the police," Mr. Shirley continued. "Because the men were all Air Force reservists, I figured their training would place them in the best position to field the UFO calls. I immediately advised the police to transfer the UFO calls into our civil defense office."

Tracking the 'Flying Saucers'

The result was an eye-opener.

"Using telephones in our office, the men were not only able to handle all incoming UFO calls, but also were able to utilize our civil defense wall maps and plot locations of UFO sightings with magnetic symbols," Mr. Shirley said. "This took the pressure off the police and enabled them to return to their normal duties."

Because of the diverse extent of incorporated jurisdictions within Tarrant County which entails the need for legal

(concluded on page 26)

With summer hard upon us, the American Red Cross has prepared this two-minute water safety test. Check one of the three possible "answers" for each of the 10 subjects. When you're finished, compare your answers with the correct answers to see whether the odds are you will sink, swim, or teach.

CHECK YOUR WATER SAFETY IQ

1. After a hard game of running about on the shore and getting overheated, the best thing to do is:
- (a) Run and dive into the water to cool off.
- (b) Wade into the water gradually right away.
- (c) Sit down on land until the superheated condition disappears.

2. To avoid succumbing in cold water a swimmer should:
- (a) Swim rapidly to keep the body warm.
- (b) Swim at a moderate pace to keep the body warm.
- (c) Move as little as possible to stay afloat.

3. You are swimming in heavy surf and find yourself being carried out to sea. You should:
- (a) Swim towards shore at an angle.
- (b) Swim to one side and not against the current.
- (c) Stop swimming and float with the current.

4. A wooden rowboat with a hole through the bottom and carrying a proper load in deep water should:
- (a) Sink to the bottom.
- (b) Float and still support passengers.
- (c) Always be abandoned by the passengers.

5. You are out in a boat in rough water and the boat capsizes. You should:
- (a) Get away from the boat, tread water and call for help.
- (b) Try to swim to shore.
- (c) Hang onto the boat.

6. You are swimming in open water and get a severe cramp in your leg. You should:
- (a) Roll over to a face-down position and massage the aching part.
- (b) Swim to snore as quickly as possible.
- (c) Tread water and call for help.

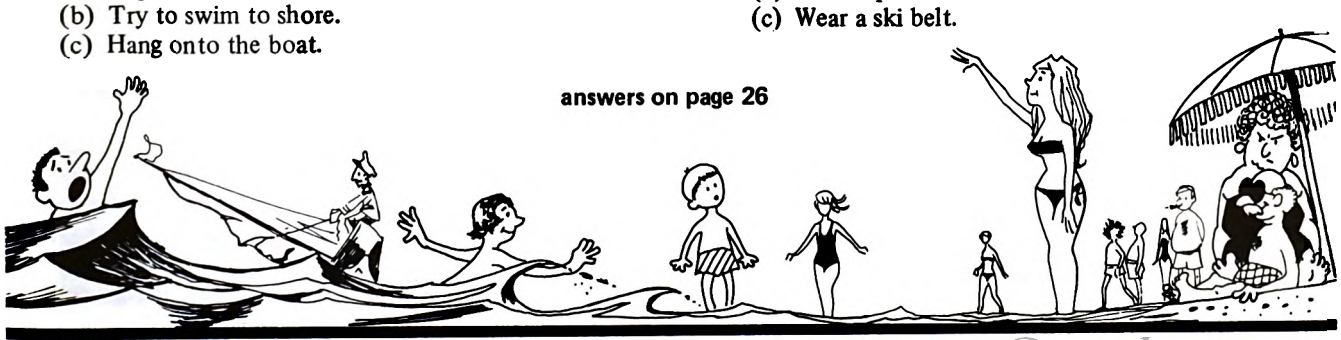
7. A person fully clothed in jacket, shirt, trousers, etc., who accidentally finds himself in deep water should swim to safety using
- (a) The American crawl.
- (b) The breaststroke.
- (c) The back crawl.

8. A person who has fallen into water over his head while wearing rubber boots should:
- (a) Have to work real hard to stay up.
- (b) Float readily as a rule.
- (c) Sink to the bottom and stay there.

9. A human body immersed in water should become
- (a) Lighter than it was on land.
- (b) Heavier than it was on land.
- (c) The same weight as on land.

10. All people aboard a boat, canoe, or sailboat should by law
- (a) Have a personal flotation device available aboard.
- (b) Wear a personal flotation device.
- (c) Wear a ski belt.

answers on page 26



Aftershock Awakening

By VERNE PAULE
DCPA Region Seven

They call it "Marvelous Marin"–Marin County, California, one of nine counties that comprise the San Francisco Bay Area.

A suburban residential community located just north of San Francisco, Marin County's more than 200,000 people live throughout a 521-square-mile area that offers a wide variety of topography, climate, and vegetation from the tidal floats of the coastline to the slopes of Mt. Tamalpais rising 2,609 feet above the beautiful blue Pacific. But Marin County also has a geological feature that is not so pleasant to contemplate: the San Andreas Fault, breeder den of earthquakes.

With all of the beauty and serenity of the area, it took the February 9, 1971 San Fernando-Los Angeles earthquake far to the south to jar Marin County and its cities out of a lethargy based largely on the belief that disasters "won't happen here."

Newspaper Starts Investigation

The *San Rafael Independent Journal,* the local daily newspaper for Marin County, started to inquire about the status of Marin County civil defense plans the day after the San Fernando quake. According to Journal Reporter Jeff Greer, "The city editor thought the so-called 'plan' was inadequate and turned me loose on the story."

Reporter Greer relates now that the officials he interviewed about Marin County's preparedness plans were "beautifully candid," adding: "They didn't protect anyone with a lot of fluff, and it rapidly became clear that Marin essentially had NO plan."

His stories ran under headlines, MARIN COULD BE CAUGHT UNPREPARED BY DISASTER . . . COMMUNICATIONS VULNERABLE TO DISASTER . . . MARIN'S NEIGHBOR'S DEFENSE PROGRAM PRAISED.

The three-part newspaper series coincided with the promotion of John Barrows to the position of County Administrator and the selection of Frank E. Kirby to become Marin County Coordinator for the Office of Emergency Services. Mr. Kirby had been Marin County Assistant Director of Public Health for Administration.

Frank Official Assessment

Administrator Barrows made this frank assessment of the low local preparedness level at the time: "In the 1960's, Marin County, as a government, really took no notice of disaster preparedness or civil defense. It was the policy of the Board of Supervisors to essentially ignore these kinds of problems. They wouldn't have stated them that way, but they felt it was an expense they didn't want to encounter."

Mr. Barrows said that, at about the same time of the San Fernando earthquake, the new California Emergency Services Act became effective which modernized civil preparedness to include natural disaster planning. He said he felt that in his new role as the county's chief administrative officer he had to "move out fairly rapidly." The Board of Supervisors was also concerned with the impetus of the new State law and the San Fernando earthquake, he said, and "they got us all into the planning process."

He and others credit Louis H. "Bud" Baar, who at the time was Chairman of the Board of Supervisors, with giving emphasis to an improved state of preparedness in the county. Mr. Baar assembled the city managers and mayors of the cities within Marin County and told them: "We need to get some planning. We need to come up with standing operating procedures. And we have to help each other."

County Promotes Action

The county served as the spark plug for the emergency planning effort. Coordinator Kirby wrote the County's Emergency Operating Plan, sent copies to the 11 cities, helped the cities with their individual emergency plans, developed a joint resolution which each political entity signed and, in effect, implemented the operational area concept as required by the California State Emergency Services Act.

Since that time, Marin County has held three earthquake exercises to test the plans. "We have found weaknesses in communications, transportation, and our emergency medical response capability," Coordinator Kirby stated. "We also need a centralized, adequately equipped Emergency Operations Center. But we are correcting our deficiencies, and we have also received some pluses from these exercises. One of the best is the fact that our people now talk to one another and work as a team. Before the exercises they hardly knew each other."

Reporter Greer believes the emergency exercises "have done more than any single activity to get a broad spectrum of officialdom and citizens thinking about the need to prepare. I praise the University of Southern California crew highly." (The exercises were managed by the University of Southern California under a contract with the Defense Civil Preparedness Agency to work with the California Office of Emergency Services and DCPA Region 7 to conduct emergency simulation training exercises with designated local governments in the State.)

Board Gives Specific Support

In recent years, Marin County Administrator Barrows has had no problem with a civil preparedness budget. The Board of Supervisors appropriated $185,000 this year for the first increment of communications equipment and has

agreed to appropriate another $100,000 next year. In addition, $60,000 has been appropriated for a mobile command center and $3,000 for a series of mobile radio units and an antenna system.

"All of this is hard evidence of support by the Board of Supervisors," Administrator Barrows emphasized. "Frank Kirby's office has been financed to the extent that he and I felt was required without any question at all."

A Suggestion For Others

With Administrator Barrows' knowledge and interest in civil preparedness, he was asked what advice he would give to his counterparts around the Nation. "You have to look at the kind of disasters that can occur in your locality," he said. "Use that as the focal point of your planning, thinking, and your efforts to gain public attention. Here in Marin County we can point out there is a high chance of an earthquake, and we also have a problem in flooding in winter from high tides and steady rains. These are the things we are planning for and using as the need to alert the public and the political officials. In other localities earthquakes are not a problem, but there may be forest fires, tornadoes, or hurricanes that you have to use as your focal point for planning. The public is very responsive to that kind of concern because they are aware of it too." □

Emergency Medical Grants

The Robert Wood Johnson Foundation of Princeton, New Jersey, and the National Academy of Sciences have announced the awarding of 44 grants totaling $15 million for multi-community emergency medical networks to provide citizens central telephone numbers to call in the event of accident, heart attack, or other medical emergencies. The grants are to urban and rural regions in 32 States and Puerto Rico.

The grants are provided by the Johnson Foundation under its program to improve primary, front-line medical care. The objective is to demonstrate the advantages of a centralized communications system in the rapid dispatch of ambulances by trained professionals serving large geographic regions. The National Academy of Sciences, which has been in emergency medical planning for a decade, will administer the grant program.

The Aim: Save More Lives

In announcing the grants, Dr. David E. Rogers, President of the Foundation, said the program is aimed at helping to provide care which could save many lives by prompt and appropriate treatment in emergencies.

"The technology and knowledge exists to do the job," Dr. Rogers said. "It is a complex one, however. People in an emergency need a central place to call. Once a call has been placed, they need a person at the other end who has the medical knowledge to deal with the problem. This program will put in place a capability to meet the problem."

"All too often," he said, "the emergency vehicle at the scene of an accident or illness has no direct way of contact with the hospital emergency room or doctor, which can mean that victims of a serious highway accident, for example, may arrive at a hospital without warning, or a seriously burned patient may be taken to a hospital without the needed sophisticated burn unit."

The regional systems to be supported by the Foundation grants use common telephone numbers, such as 911; medically controlled dispatch of ambulances, and transport of patients to previously alerted facilities; and area-wide coordination among hospital emergency rooms, ambulance services, emergency cardiac units, and burn and poison centers.

Local, State Boundaries Crossed

The geographical areas involved in the grant program often cross jurisdictional and governmental boundaries. Three of the 44 programs are Statewide in scope (Idaho, New Mexico, Utah); four of the programs involve counties in two States; seven of the programs are metropolitan area programs for the cities of San Francisco, Indianapolis, Minneapolis, Cleveland, Philadelphia, Atlanta, and Seattle; 22 are multi-county and 14 are single county. Nearly two-thirds of the regions receiving grants are rural in character. The 44 grant programs were selected from 252 applications.

Under the program, two-year funding starts July 1, and the money will be used for the organization and start-up of new regional programs or the extension of existing programs. Funds may be used to train emergency medical communications dispatchers and emergency medical technicians, to secure communications equipment, and to inform citizens in the use of the system in their areas.

Rand to Judge Results

The Johnson Foundation has commissioned the Rand Corporation of Santa Monica, California, to assess the overall impact of the program on improving emergency medical care and saving lives. The Foundation is also sponsoring a series of four two-day workshops in regional emergency medical response systems. These workshops will be available on a priority basis to those organizations which applied for support under the Foundation's program.

The Robert Wod Johnson Foundation was established in 1936 by General Robert Wood Johnson who died in 1968. His bequest, received in December 1971, and the appointment of Dr. Rogers as President the next month, marked the beginning of the Foundation's transition from a local philanthropy, active primarily in New Brunswick, New Jersey, to a national philanthropy interested in improving health in the United States. □

Regional Roundup

O'BRIEN COUNTY, IOWA

Dorothy Merriam, Director of O'Brien County-Municipal Civil Defense, reports the development of a comprehensive four-page set of "Fire Safety Rules for You and Your Family." Approved by the Fire Chiefs of the communities of Archer, Calumet, Gaza, Germantown, Granville, Hartley, Paullina, Primghar, Sanborn, and Sutherland, and endorsed by the Farmers Mutual Insurance Association, it was distributed to O'Brien County school students by school administrators and principals and the American Legion Auxiliary.

FORTUNA, CALIFORNIA

Fortuna, in Humbolt County, is a lovely community in the heart of California's giant redwood country. Enhancing it are the Eel and Van Duzen rivers which provide splendid recreational opportunities as boating, swimming and fishing for its 4,200 residents for much of the year. But when the rains come, the rainfall is concentrated in a few months and flooding is hardly a stranger to the community.

It was during the January flood that a parishioner of the Fortuna United Methodist Church suffered a heart attack while trying to save his business property from the rising waters. As a result, Mrs. Gerald Evans, a member of the Council of Ministries, recognizing the need for volunteers to assist fellow citizens faced with disaster conditions, approached Ione Siipola, Assistant Director of Fortuna's Civil Defense and Disaster Services. Mrs. Evans was designated a Call Captain and has obtained and enrolled 15 volunteers to date. Their vocations include nurses, carpenters, mechanics, electricians, welfare workers, and truck drivers. And Mrs. Evans believes she will be able to recruit an additional 20 for Fortuna's volunteer force.

KNIGHTSTOWN, INDIANA

Brian L. Bex, President of the Brian Bex Report and the American Communications Network of Knightstown, Indiana, reports he is working to spread the civil preparedness story through his newsletter and television outlets.

Showing the Defense Civil Preparedness Agency motion pictures, "A Lady Called Camille" and "One Week in October" are among the educational actions he has taken, Mr. Bex said.

Mr. Bex is the son of John E. Bex, Director of DCPA Region Two at Olney, Maryland.

WESTPORT, CONNECTICUT

Beautiful Westport is an exurbanites dream. Just 54 miles northeast of New York City, its intimate hills and valleys drop down, together with the Saugatuck River, into Long Island Sound.

Despite the lovely setting, Westport as in the case of any tidewater town, has a constant disaster potential such as floods from the uplands and perigee tides from the Sound.

Coleman Williams, Director of Civil Preparedness, had long recognized the inadequacy of Westport's backup communications system should disaster strike. For five years his appeals to local "hams" for their support and his entreaties for financial assistance from the Board of Finance fell upon deaf ears.

Finally the Board came through with $1,300 for a two-meter FM Base Station, two walkie talkies and appropriate antennae. The minor investment worked wonders- the "hams" flocked in . . . 30 of them. And with them came their contribution of $15,000 worth of their own gear. Director Williams believes Westport now has "the most versatile and effective radio capability in Connecticut."

CROCKETT COUNTY, TENNESSEE

Bowen Naylor, Coordinator of Civil Defense for Crockett County, reports a tornado plan for the 10 schools in his community. The mechanics of the plan are simple but effective.

The Sheriff's office advises the school superintendents of tornado "watches" or "warnings." The superintendant activates the plan by directing teachers to escort their students to safe, predesignated places within the school.

The plan is also in force for the County Nursing Home and two industries in the county.

NEW YORK CITY

Dr. Maire Bradshaw, Radiological Officer of the New York City Emergency Control Board-Civil Defense, organized and presented in conjunction with New York University a comprehensive seminar on emergency procedures for a radiological accident. The seminar was organized in response to requests by many organizations in the Greater Metropolitan area following incidents on the transportation of radiological material and the presence of such material in a fire situation.

Participants included representatives of the Police Department, the Crime Laboratory, the Forensic Technicians Unit, Auxiliary Police Division, the Fire Department Division of Training, the Port Authority of New York and New Jersey, Environmental Sanitation, Police Academy, personnel of Kennedy, LaGuardia and Newark Airports, Emergency Medical Division of the Health and Hospitals Corp., the Office of Radiation Control (Dept. of Health), and members of the Disaster Management Program of New York University.

The program included talks on the basic concepts of radiation, descriptions of installations containing radioactive material, including teletherapy units, and a demonstration of sophisticated monitoring instruments and civil defense radiation detection devices. Training officers from the Police and Fire Departments spoke about their radiation training programs, and the New York City Radiation Plan was described.

The seminar provided a forum where the personnel charged with the safety of the residents of the many jurisdictions of New York's Greater Metropolitan area against the effects of nuclear incidents met, in many instances, for the first time and were able to discuss in detail the functions of the various agencies involved. Needless to say, the opened communications led to improvement and refinement of existing readiness and operational planning.

JACKSON, MISSISSIPPI

A joint effort by the Jackson Weather Forecast Center, Postal Service, and the Office of Disaster Preparedness and Operations resulted in a video tape information film on tornado characteristics, local warning systems used in both the city and the County of Hinds, and the protective actions to be taken to safeguard lives in the event of tornadoes. The tape is to be shown to all employees at each branch of the Postal Service in Jackson.—**John I. Bott**

RECOGNITION

Four county governments—in Alabama, Missouri, Nevada, and California—will receive awards from the National Association of Counties (NACO) for their 1973 accomplishments in disaster preparedness, according to NACO Executive Director Bernard F. Hillenbrand and Director John E. Davis of the Defense Civil Preparedness Agency, Department of Defense.

The "New County USA Achievement Awards" will be presented at the 39th annual meeting of the Association, called the "1974 County Achievement Conference," July 14-17 at Miami Beach, Florida.

The county governments to receive awards this year for disaster preparedness are:

Houston County, Alabama (population 57,000), of which Dothan is the county seat. James W. Albridge is Director of Houston County Civil Defense.

St. Charles County, Missouri (population 93,000), of which St. Charles is the county seat. The Director of St. Charles County Civil Defense is Calvin E. Davis.

Elko County, Nevada (population 14,000), of which Elko is the county seat. Robert H. Babb is Director, Elko County Emergency Operations.

San Mateo County, California (population 556,000), of which Redwood City is the county seat. William C. Hinchcliff is Director of the San Mateo Operations Area Civil Defense. This county received a similar NACO award in 1973.

In addition to the four counties receiving recognition this year for civil preparedness progress, 119 other counties will receive a total of 298 awards for 1973 accomplishments in other fields, such as law enforcement, environmental improvement, youth services, and tax reform. Also, awards will be presented this year to two Statewide associations of counties.

All of the awards are given "in recognition of distinguished and continuing contributions to the cause of strong, efficient, modern county government in America."

Since NACO instituted this program in 1971, 501 awards have been given to 334 county governments and one State association of county governments, including 15 awards for emergency preparedness accomplishments.

About 1,200 of the Nation's counties, containing some 90 percent of the U.S. population, are members of NACO.—**Gordon W. Hirtle.**

From the Press

Here's a digest of news items on civil preparedness topics:

NEW BUSINESS—"As the hurricane season approaches, Longboat Key (Florida) officials are readying themselves to review, revise and update the town's civil defense procedures . . . The first step will be to reactivate the emergency preparedness committee which is composed of town commissioners." Announcement came from Town Manager Wayne Allgire. (*Herald-Tribune,* Sarasota, Fla.). . . "Limestone County has been chosen, along with 12 other North Alabama counties, to participate in a $250,000 experimental project (to) include a comprehensive survey of human and physical resources . . . useful for life saving, property protection and recovery in the event of a major disaster. . . . Once the survey data from all 13 counties has been collected, it will be processed by computer at the University of Alabama. (Then) an operating plan will be developed for calling out and utilizing the needed resources." DCPA is funding the project, notes the article. (*News Courier,* Athens, Ala.) . . . "Recent reports indicate that substantial progress has been made in efforts to develop a strong Civil Defense program for Athens (Georgia) and Clarke County," says an editorial in the *Banner-Herald.* Horace Carter, who was named local Civil Defense Director in January, reported recently his office had already addressed itself to more than half of the recommendations given by State experts in their civil preparedness plan for Clarke County. "Carter's office should get full support and cooperation in developing and implementing the best civil defense program possible," the editorial concludes . . . "With a new Civil Defense building and an extensive siren system, Doltan (Ind.) is more than ready to face an emergency," reports the Hammond *Times.* Civil Defense Director Paul Lombardo comments that the recent installation of two new sirens came "just in time for the tornado season."

THE STRATEGIC VIEW—"The notion that detente permits us to disarm is a widespread illusion," says Secretary of Defense James R. Schlesinger. "Detente rests on an equilibrium of force. . . . There is a continuing, steady increase in the military capabilities of the Soviet Union and we must balance that." Asked if the new U.S. (retargeting) strategy makes nuclear war more tempting, Schlesinger replied, "No . . . it reduces the probability of nuclear war because it shores up deterrence. If we can deter across the entire spectrum of risks, the probability of a major clash goes down and consequently, we're all better off." (Interview in *U.S. News and World Report* magazine). "

SOVIET CIVIL DEFENSE—"Soviet civil defense focuses its principal efforts on defense and rescue of people, or in more concrete terms—on preparing for and conducting dispersal and evacuation of the population from cities, organization of an early warning system and securement of group (shelters) and individual (gas masks, respirators, etc.) means of protection. The Soviet state and its civil defense are religiously carrying out V.I. Lenin's behest: 'The first productive force of all mankind is the worker, the toiler. If he survives, we shall save and rebuild everything.' . . . The goals and tasks of civil defense are near and dear to Soviet citizens, who vitally desire to prevent war and consequently are interested in strenghtening our nation's defense capability, a constituent and important part of which is civil defense." These statements from *The Philosophical Heritage of V.I. Lenin and Problems of Contemporary War,* Moscow, The Military Publishing House, 1972, are intended to outline the "social nature of Soviet civil defense." (Defense Department *Current News Digest,* April 1974) . . . The Defense Department *News Digest* of March 27, 1974, quotes Soviet General N.A. Lomov, writing on the "revolution in military affairs" as follows: "The role of (Soviet) civil defense has grown immeasurably, and its functions are organically intertwined in the process of military operations which can cover the entire territory of the nation."

COASTAL WARNING—"The Nation's top hurricane forecaster warned today the overbuilding of beach resorts and coastal cities, and the inadequacy of escape road networks are increasing the possibility of major disaster if a killer hurricane strikes," says a front-page story in the Washington (D.C.) *Star-News.* The warning came from Dr. Neil Frank, Director of the National Hurricane Forecast Center. NWS, said Frank, is particularly concerned about New Orleans, Key West, Long Island, St. Petersburg-Tampa, Galveston, Rehoboth Beach, Ocean City (Maryland), Cape May, New Jersey, and Miami Beach. Frank says the NWS will "overwarn" coastal communities to give evacuation as much of a head start as possible. "When we tell people to get out, we're going to mean it," Frank said.

DISASTER WARNING—A swarm of tornadoes which ravaged the midwestern and southeastern United States on April 3 focused media attention on public warning. Throughout tornado country, the headlines told the story: CIVIL DEFENSE COMES INTO ITS OWN AND THOSE SIRENS PAY OFF (*Enquirer,* Cincinnati) . . . TEST SLATED FOR AIR RAID SIRENS IN CITY (*Repository,* Canton, Ohio) . . . TEST SET FOR CITY (*State Journal,* Springfield, Illinois) . . . TORNADO WARNING SYSTEM ADVANCED (*World,* Tulsa) . . . CHECK ASKED ON

WARNING (*World Herald,* Omaha)... CD SIREN TESTING TO BEGIN (*Tribune,* Meadville, Pa.)... DISASTER WARNING SYSTEM PLANNED BY CIVIL DEFENSE (*Times,* Florence, Ala.)... In Nebraska, State CD Director Maj. General Francis L. Winner was quoted in the Lincoln *Star*: "Tornadoes remind us with horrible emphasis that even a few seconds of warning can make the difference between life and death." Winner issued a statement urging Nebraska local officials and school authorities to check plans for protecting people and the school population in event of a tornado warning... From Louisville, in hard-hit Kentucky, the *Associated Press* reported that "The Louisville and Jefferson County Office of Civil Defense will request funds within a few weeks for 75 sirens."

MOBILE HOME TIE-DOWNS—In the wake of the April 3 tornadoes, the vulnerability of mobile homes cropped up in the news throughout the stricken areas. "Harry T. Price, director of the University of Tennessee's civil defense education program, said important precautions (for occupants of mobile homes) include installation of tiedowns, proper positioning of the structure, utilization of windbreaks and movement to a shelter," reported the *New-Sentinel,* Knoxville. Price pointed out that a publication of the Federal Defense Civil Preparedness Agency, "Protecting Mobile Homes from High Winds," plus other brochures, are available to the public... Said an editorial in the Charlestown, W. Va. *Mail,* "Frail as it seems to be, the trailer home need not be a pushover in the first high wind to strike it. Plans and specifications for anchoring it are readily available from (DCPA and the Mobile Living Communications Center in Chicago)."... In Monroe, Michigan, Monroe County Office of Civil Preparedness Coordinator Harold D. Straub recommended to the county commissioners that communities adopt ordinances to require that mobile home parks furnish tornado shelters for residents and requiring mobile home tie-downs. (*Evening News*).

PREPAREDNESS IN SCHOOLS—Concern for the Nation's school population cropped up widely, as surveys revealed the extent of school damage in the April tornadoes. From Terre Haute, Indiana, the *Associated Press* reported that "The Indiana Civil Defense Director leveled some sharp criticism Saturday at what he called dangerously constructed school buildings, saying great numbers of school children could have been killed if the April 3 tornadoes had struck an hour earlier." Said State Director Milton Mitnick: "I suggest we change the modern architecture of school buildings. These all-glass schools are just too dangerous. There is too great a chance of children being hit by flying glass."... The headline in the Muncie, Indiana *Press* read: TORNADO BELT'S GLASSY, MONEY-SAVING SCHOOL BUILDINGS DEPLORED. The story quotes Patrick Finneran, Director of the Indiana Department of Public Instruction's civil defense division: "An unfortunate thing has been done, all to save money. Most schools built today are of single or bilevel block wall and steel span construction. And there's a lot of glass area to let in sunshine. They just can't stand a blow at all." Finneran suggested two "rather inexpensive" preventive measures: free architectural advice under a federal program to design safety areas within the school, and a weather-monitoring radio. Finneran cited DCPA-funded school shelter survey experts as being available for advice but he says, "not enough have taken advantage of the (program)"... Public school safety director Dick Kisner told the Tulsa *Tribune* that students and school staff in the city would be well-prepared to take emergency measures, thanks to periodic disaster safety drills during the school year. Kisner said school officials have worked with Red Cross and Civil Defense to select the safest areas in Tulsa's schools in the event of a weather emergency. The area is usually an interior hallway, Kisner pointed out... New Albany High School in Louisville is getting estimates of cost of construction of a full basement under the gymnasium, after Director of Floyd County Civil Defense Edward Allen stressed the need for basements in schools for tornado protection. (*Courier-Journal*)... "Like fire drills, tornado drills are becoming a regular part of school routine in Alabama," reports the Florence *Times.* "Each school in six area systems has already started or will soon implement an action plan for tornado weather." The article credits these preparations to Auburn University's (DCPA-funded) school survey program, in cooperation with the State Department of Civil Defense. "Tornado preparedness in school," reports the *Times* "is an outgrowth of another Alabama program, survival classes for all ninth grade students, taught as a part of social studies... and dealing with all types of disasters, including... nuclear explosions."

VIEW FROM THE TOP—"You (local directors) deserve more money to do a bigger job, and I think you'll get it. You're doing a mighty fine job with what you have," said Senator John Stennis at the annual USCDC conference in Washington. (*Enterprise,* Jackson, Miss.)... Presented with an On-Site Assistance report on State capabilities in disaster, Governor Meldrim Thomsen said "All state and local officials should be mindful of the many good resources, such as this, that are available to us," and lauded State-Federal effort to be ready for emergencies. (*Union-Leader,* Manchester, N.H.)... Everyone chips in to help when disasters occur, says Governor David Hall of Oklahoma, citing State Civil Defense and other emergency agencies. All of these have learned through experience of past, he says and "even though it's that time (tornado season) in Oklahoma, we're better prepared than ever to help people when weather trouble comes." (*News-Star,* Shawnee).—**Joseph V. Quinn.**

LIFESAVING SIRENS *(continued from page 5)*

". . . when those sirens started, I ran across to the church to get my daughter . . . (the area) cleared in less than 10 minutes. Cars left . . . , (kids) on bikes rode off fast, children *ran* home. . . . Later that night, a siren made me pick my baby out of her crib and take her to our basement family room where my husband and other two children were sleeping. We spent most of the night there. . . *Please* keep up the sirens, and *thank you*—It's not easy to get three children to safety fast."

"I would like to be counted among those who thank you for your wise action. . . . The sirens caused many people, including myself, to turn on the radio to find out what was happening. . . . I knew (those sirens) were waking many people. . . . I feel it (is) better to be prepared. . . ."

From the Fire Chief of suburban Reading: "I most firmly believe . . . your action . . . certainly saved a lot of lives . . . congratulations for a job well done."

And from the Board of Trustees of outlying Colerain Township: "The Board of Trustees wishes to commend your department for the excellent service given during the tornadoes (of) April 3. . . . The efficient warning system is a comfort to the residents of Colerain Township, and they are thankful for your dedicated efforts."

Sirens Tested Every Month

Siren installation in Hamilton County started 18 years ago, and for the past 12 years they have been tested for one minute at noon the first Wednesday of every month—including the Wednesday they finally were used for real.

The sirens were installed at a cost of $5,000 to $6,000 each—with Hamilton County paying half the costs, and the Defense Civil Preparedness Agency paying the other half.

Mr. Maccarone has made a continuing effort to tie fire sirens of suburban communities into the system. This has cost an additional $200 to $500 for each of 15 sirens now in the system. All were used in the recent alerts and warning.

Since the big storm, Director Maccarone has submitted application for eight new sirens, to be installed in outlying areas not now covered.—**Gleason O. Seaman.**

CHECK YOUR WATER SAFETY IQ *(continued from 19)*

ANSWERS

1. (c) Sudden great change is a shock to the system.
2. (c) Exertion brings fatigue and loss of heat.
3. (b) This maneuver takes you away from the current and conserves your energy so you can swim back to shore in a straight line.
4. (b) A wooden rowboat or a canvas canoe full of holes will still support the proper load each carries normally.
5. (c) Boats usually float.
6. (a) The face down position enables you to float while you are relieving the cramped muscle.
7. (b) Keep all the weight of water soaked clothing in the water where it is lighter by far and by so doing the swimmer makes his way to safety with less effort.
8. (b) Although the use of the legs is sharply reduced in propelling the body, the body has about as much buoyancy as without the boots.
9. (a) Water is a heavier medium than air; hence the body in water is lighter than it was in air.
10. (a) Federal law requires that each craft carry a U.S. Coast Guard approved personal flotation device except that racing shells must be accompanied by a craft with devices for those aboard both craft. Whitewater canoeists may wear flotation gear of a specified type.

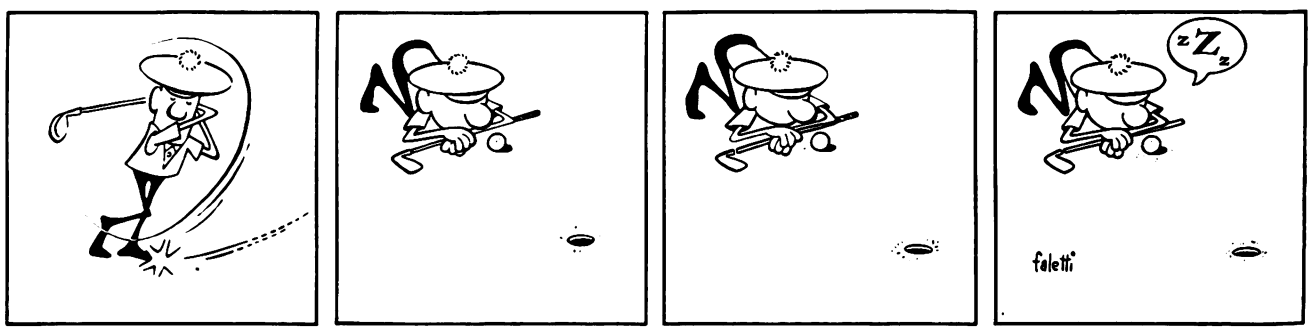
SCORING

Give yourself 2 points for each correctly checked blank. The maximum score possible is 20. If you scored less than 16, better investigate your Red Cross chapter's water safety classes. If you reached the top mark, you might qualify for water safety aide or instructor courses.

MOBDES AT FORT WORTH *(continued from page 18)*

guidance dealing with such things as emergency mutual-aid agreements, Mr. Shirley said his office is now attempting to obtain an authorization for an additional two or three MOBDES augmentees with military legal backgrounds to fill positions as legal advisors.

Says Coordinator Lord: "The MOBDES program has given us the first light at the end of the tunnel to solve the problem of staff augmentation during emergency operations. It's a resource we've never had before."—**Dana J. Cessna,** DCPA Region 5.



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Preparedness in transition:

THE PORTLAND STORY

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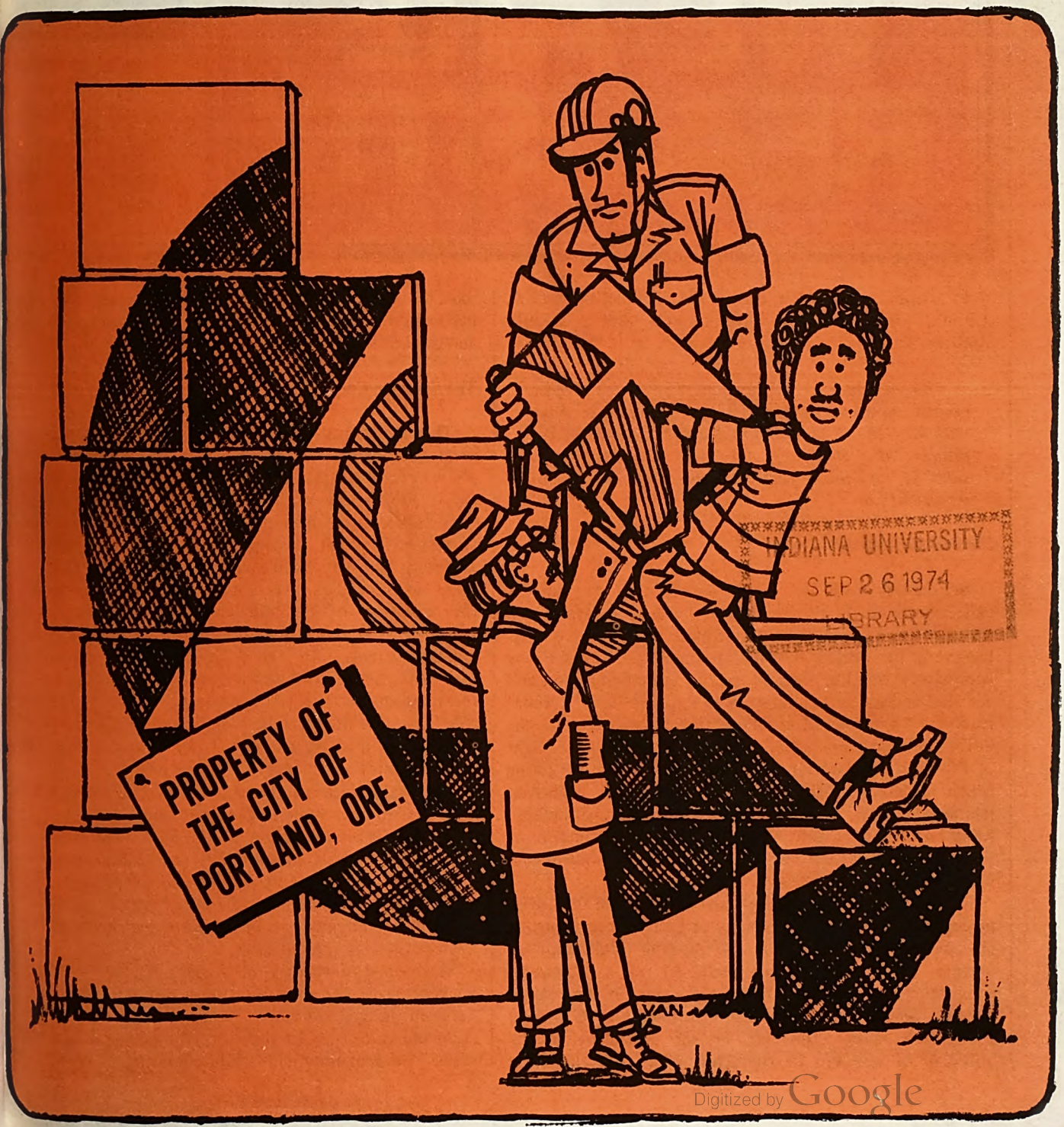
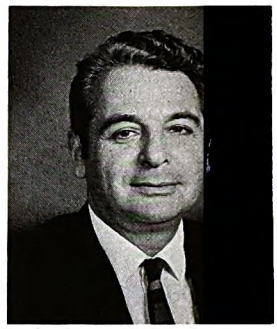


The Soviet View:

'WE ARE REALISTS'



By LEON GOURE

Director of Soviet Studies

Center for Advanced International Studies

University of Miami

In a book published in early 1974, Colonel General A. Altunin, Chief of USSR Civil Defense and a Deputy Minister of Defense, wrote:

> *The preparations of the country's rear for defense against weapons of mass destruction has become, without a doubt, one of the decisive strategic factors insuring the ability of the state to function in wartime, and in the final analysis, the attainment of victory in war.*

Seeking an Answer

Statements such as these, as well as the current exhortations in the Soviet press to further strengthen civil defense (which is already the largest and most comprehensive in the world), the announcement in 1973 of a new compulsory training program for the adult population and the civil defense forces designed to improve their "combat readiness," and indications of additional Soviet investments in civil defense preparation, may appear strange in the light of the second anniversary of the Moscow Summit meeting which ushered in the "era of detente" in US-Soviet relations. Indeed, why this Soviet interest in civil defense when both Moscow and Washington assert their determination to avert a nuclear war or dangerous confrontation and to strengthen the detente?

The answer to this question must be sought in the Soviet perception of the actual character of East-West relations, in Moscow's understanding of the meaning and limits of detente, or as the Russians prefer to call it, "peaceful coexistence," and in the Kremlin's views on the role of military power as the essential instrument of its foreign policy and, along with this, on the possibility of the outbreak of war and its character. What is significant is that, in most important respects, the Soviet views differ markedly from the interpretations and concepts of detente and of U.S.-Soviet relations held in the West.

The Struggle Continues

The agreements signed at the May 1972 Moscow Summit meeting commit the United States and the Soviet Union not to resort to war as a method of settling their disputes and to cooperate in various fields of mutual benefit, ranging from space and medicine to trade and technological exchange. However, the agreements, as Leonid I. Brezhnev, Secretary General of the Soviet Communist Party, and other Soviet leaders take pains to emphasize, do not signify the cessation of the unrelenting and uncompromising struggle for dominance between the capitalist and communist systems, nor the muting of their incompatible objectives. As the Soviet leaders see it, this struggle between the opposing systems is a historical necessity and unavoidable, although there can be temporary changes in the forms or means of this struggle, i.e., it can be waged with greater or lesser resort to violence.

In a major speech in December 1972, a good six months after the Moscow Summit, Brezhnev said:

> *The Communist Party of the Soviet Union always held and now holds that the class struggle between the two systems—the capitalist and the socialist—will continue. It cannot be otherwise, because the world outlook and class aims of socialism and capitalism are opposite and irreconcilable.*

According to *Pravada* of August 22, 1973, "peaceful coexistence," i.e., detente, does not end the struggle between the systems which "will be waged right up to the complete and final victory of communism on a world scale." Consequently, "peaceful coexistence" is defined as

Dr. Goure, a recognized authority on Soviet affairs, was born in Moscow in 1922. He came to the United States from France in 1940, and served in the U.S. Army Counterintelligence Corps in Europe during World War II. He holds degrees from New York University, Columbia University, and Georgetown University.

Prior to assuming his present position at the University of Miami Center for Advanced International Studies, he was a senior staff member for 18 years with The RAND Corporation. Dr. Goure is the author of a number of books, monographs, and articles on various aspects of the Soviet Union.

being merely a "special form of the class struggle in the international arena," a struggle which, according to the Soviet formula, while avoiding a nuclear war, aims at bringing about a shift in the East-West balance of forces in favor of the Soviet Union.

Uses of "Peaceful Coexistence"

In the Soviet understanding of the principles of "peaceful coexistence" and the nature of East-West relations, the detente is not intended to serve as a means for preserving the *status quo* at the expense of the national liberation and revolutionary struggle against the U.S. and the West in general over the long run. Thus, Soviet spokesmen can assert that while "peaceful coexistence" restricts the freedom of action of the West to resist the national liberation and revolutionary movement, it by the same token "widens" the latter's opportunities to pursue the struggle in the non-aligned nations as well as within the capitalist countries. The Soviet viewpoint is that the "strategic purpose of peaceful coexistence is to assure favorable conditions for the worldwide victory of communism."

"Just" and "Unjust" Wars

Although in the Soviet view "peaceful coexistence" excludes resort to nuclear war between the great powers, it does not preclude the use of violence in international relations especially by various groups engaged in what Moscow calls the national liberation struggle. Soviet leaders emphasize, as Brezhnev did in his speech in Havana on January 30, 1974, that they are not "pacifists." They distinguish between "just" wars–i.e., those fought to defend the Soviet Union, its allies and clients and to expand communist influence–and "unjust" wars–i.e., those initiated or fought by capitalist nations whose aims *a priori* are said to be reactionary. The Soviet Union, as repeatedly stated by its leaders, is pledged to support the armed struggle of the "anti-imperialist" national liberation movement. For example, Premier Kosygin has publicly promised that the Soviet Union would "unfailingly assist" all peoples who are struggling "arms in hand" against "imperialist exploitation."

The Soviet government's newspaper, *Izvestiia,* declared on September 11, 1973:

> *War can and must be banned as a means of resolving international disputes. But we must not "ban" civil or national liberation wars. We must not "ban" uprisings, and we by no means "ban" revolutionary mass movements aimed at changing the political and social status quo.*

In recent months Soviet spokesmen have underscored that the Soviet Union regards national liberation wars as "the most important types of just wars" and that it has "consistently provided extensive and varied political, economic and military assistance and support" to the peoples engaged in such wars. As examples of such support, Soviet leaders cite their assistance to North Vietnam and more recently to the Arabs, both prior and during the October 1973 War with Israel, and in fact take credit for having helped to prepare this conflict and for giving their Arab clients every assistance during its course.

Mission of the Military

In conjunction with Soviet support of the "anti-imperialist" national liberation struggle, particular importance is attributed to Soviet military power as a means of deterring, preventing, or "cutting down" Western attempts to resist these movements and to intervene in such wars, or as Moscow calls it, Western effort at "exporting counter-revolution." This mission of the Soviet Armed Forces is said by leading Soviet spokesmen to be "one of the most important manifestations of their external function."

Soviet acceptance of the concept of limited cooperation with the U.S. for the preservation of international stability and avoidance of US-USSR military confrontation does not preclude Soviet involvement in local conflicts and efforts to expand its areas of influence and control at the expense of the U.S. The Soviet leadership recognizes that, as in the case of the 1973 Middle East crisis, there is a continued risk of confrontation with the United States. Consequently, in the Soviet view, detente can reduce but not totally eliminate the threat of war, and therefore, the Soviet Union must remain prepared for dangerous confrontations.

'Of Course We Are Realists'

In a major speech on October 26, 1973, Brezhnev said that "of course we are realists. . . . We all well know that wars and acute international crises are far from being a matter of the past." Subsequently, an article warned that it

would be "utopian" to expect that the detente could "at once rule out any armed clashes" and that "all talk about an end to the 'era of wars' and the arrival of an 'era of universal peace' is premature and dangerous."

Because the Soviet leaders take the danger of confrontation and of a war seriously, they see a need to develop a capability to deter the U.S. and, if the deterrence fails, to fight and win even a nuclear war. In their view, Soviet security cannot be reliably assured by a U.S.-Soviet balance of assured mutual destruction even under conditions of agreed strategic parity. They argue that such a balance is inherently unstable because it can be destabilized by various developments, such as: sudden breakthroughs in weapons technology, radical changes in the political character of leadership in Western countries, irrational decisions by Western leaders to fight rather than give way to Soviet advances. Furthermore, there is the possibility that a local war may escalate into a general nuclear war.

Impact of Power

Consequently, although the Soviet leaders agreed that the agreements signed in May 1972 established the principle of "equal security" with the U.S., they have continued to claim that the United States was "forced" to accede to the detente by the growth of Soviet military power and that more power would be needed to insure that the U.S. is deterred from confrontation with the Soviet Union in the future. In a speech on January 8, 1974, Politburo member and Minister of Defense of the USSR, Marshal of the Soviet Union A. Grechko said:

> *The Party relies not on the peace aspirations of the imperialists (i.e., the U.S.) but on the real correlation of forces, on the economic and defense might of our country. The greater the combat ability of the armed forces of our country, the more powerfully they are equipped and the better the personnel are trained, the more peace there will be on earth.*

This view was endorsed by Brezhnev who acknowledged that the "all-round strengthening of the combat-might of (the) Armed Forces has always been and remains the sacred duty of our Party, of the Soviet Government and people."

Soviets Forecast Victory

The Soviets do acknowledge that a nuclear war would be a great calamity. At the same time, however, they criticize the Western "bourgeois pacifist" belief that such a war would spell suicide for all belligerents and that none could win or emerge victorious. Instead, they argue that the Soviet Union must not only be capable of deterring an attack, but if deterrence fails, of waging such a war, surviving it and emerging victorious. Soviet military leaders in particular have repeatedly said publicly that the Soviet Union would win a nuclear war. For example, on March 13, 1974, Grechko said in a speech that in the event of war the "imperialist aggressors ... will be beaten everywhere." Of course, it is made clear that the greater the credibility of Soviet readiness for warfighting and warsurvival, the more effective also will be the Soviet ability to deter the U.S. and to persuade it to give way to Soviet advances rather than risk a confrontation.

When Soviet leaders speak of the "further strengthening" of Soviet military might, they refer not only to the armed forces but also to civil defense. In the Soviet view, civil defense is an integral part of the overall defense posture and a vital element in the Soviet deterrence, warfighting and warsurvival capability. Soviet spokesmen persist in asserting that victory in a war is impossible without a strong and effective civil defense program because the "attainment of victory depends on the reliable protection of peoples, material resources and cultural treasures." It is said that "a state can survive a missile-nuclear war only if the entire population and the economy are well prepared for it ... if, along with powerful armed forces, the state is strong in civil defense." A recent Soviet publication asserts:

> *Civil defense is becoming a strategic factor which exercises a significant determining influence on the course and outcome of a modern war as well as on the post-war restoration of the economy.*

Civil Defense As a Deterrent

Furthermore, Soviet spokesmen claim that Soviet civil defense "will not provoke, instigate or accelerate the coming of war," but on the contrary, will contribute to the strengthening and credibility of the Soviet capability to deter war. "Improvements in civil defense," says a major Soviet book on defense problems published in 1972, "and an increase in its effectiveness constitute a major obstacle in the way of unleashing a new world war by the imperialists."

Indeed, in a period of general parity in U.S.-Soviet strategic weapons, where quantitative limits have been set by agreement on the offensive weapons held by both sides, the strategic balance becomes more sensitive to asymmetries in respect to other capabilities. The balance may become influenced not only by how much damage each side can inflict on the other but to an increasing degree on how well each side can limit the damage and ensure its survival in the event of an attack. In a confrontation between the U.S. and the U.S.S.R., a significant asymmetry in their respective damage-limiting and survival capabilities –i.e., in civil defense–may affect each side's perception of the strategic balance and, consequently, influence to an important degree the decisions as to which can afford great risks and which is more deterred.

Thus, to the Soviet leaders the value that can be gained from an effective civil defense program, both in peace and in war, is sufficiently evident to justify the continued investment in it of major resources as well as mobilizing the efforts of the Communist Party, the Soviet Government, and the entire population. According to a high Soviet Government official, "In our country, there is not one economic branch or area of social endeavor that is not in one way or another associated with civil defense."■

viewpoint

Enough pipe to lay a pipeline from Washington to Boston.

About $100 million in valuable surplus equipment given for community use in less than a year.

More than 6,700 major pieces of equipment loaned for State and local government use in 2½ years, valued at more than $50 million.

Just a few facts about three of the Defense Civil Preparedness Agency's equipment programs which provide some of the meat and muscle to fill out the framework of State and local civil preparedness organizations. The facts refer, respectively, to our water and power equipment stockpile, the surplus property, and the equipment loan programs.

Their importance is that all of this hardware available to or in the hands of State and local governments and their civil preparedness units helps these governments to help themselves in the critical hours and days right after a disaster.

Take the water and power equipment program. This stockpile of water pumps and purifiers, electric generators, 450 miles of pipe, and other equipment on call at warehouses across the Nation has been used by hundreds of communities in fighting floods, droughts, power failures, and other localized calamities.

Started in 1952 at a cost of only $6 million, this stockpile now has a replacement value of approximately $30 million. In the past two years, we have added about $3 million worth of new pumps, generators, and other items. In fact, a DCPA study of Fiscal Year 1973 usage of this equipment shows that States and communities using the stockpile would have had to pay out $28 million in rentals for comparable equipment in that one year alone, if the stockpile had not existed—almost the stockpile's replacement value.

Or take the program which has funneled more than 7,000 military vehicles and aircraft on loan through civil preparedness channels to State and local governments for civil defense use, in return for their agreement to keep it in good working order. In this way, Department of Defense property is reutilized by civil preparedness, and in addition, property excess to the needs of other Federal Departments is also loaned.

Many a smaller community, for example, has received fire equipment under this program. In the first six months of Fiscal Year 1974, 37 firetrucks were made available, and 40 more were loaned in the period from mid-March through June 1974. From January to June 1974, 35 helicopters were loaned to State and local governments.

Figures can be tedious. But the solid, increased lifesaving capability represented by these statistics is anything but tedious in practice. With governments across the Nation hard-pressed to meet the needs of their citizens, and with many legitimate demands on each tax dollar, it's nice to know that there are still a few bargains around.

John E. Davis
Director

New Industry Guide

Are you ready for disaster?

That question is the title for chapter one, and the theme of the new booklet Disaster Planning Guide for Business and Industry CPG 2-5, published by the Defense Civil Preparedness Agency.

The publication begins with a short description of several kinds of natural and man-made disasters and the actions to be taken immediately, and then explains more in detail some of the long-range planning which must be accomplished for a company to be ready for all disasters.

Chapters include: "Planning for Continuity of Industrial Management," "Protecting Vital Records," "Using Your Plant Emergency Services," "Industrial Mutual Aid Associations for Emergencies," and "Basic Plan Leadership Actions for All Major Emergencies."

The publication may be obtained free of charge by writing to Liaison Services Division, Defense Civil Preparedness Agency, Pentagon, Room 1D543, Washington, D.C. 20301.

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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

Badge of Merit

A total of 40,456 Boy Scouts of America have earned the new Emergency Preparedness merit badge since the program was introduced in 1972.

In cooperation with the Defense Civil Preparedness Agency, the Boy Scouts of America instituted the plan following meetings between John E. Davis, DCPA Director, and Alden G. Barleer, Chief Scout Executive of BSA.

All Scouts across the country are eligible to earn the badge in the same manner as they earn other Scout merit badges–by satisfying the requirements for it. These requirements, established by BSA, are based upon DCPA recommendations.

The merit badge design, worn by Scouts as a two-inch cloth disc, consists of: (1) a red cross signifying first aid and medical care; (2) a house, representing shelter; and (3) an electrical symbol for communications, with International Code spelling out the word "HELP."

Richard D. Dutcher, Program Development Division Executive of BSA, reports that 16,467 Scouts earned the merit badge in 1972 and 23,989 during 1973.

Local civil preparedness officials in all parts of the United States have an essential role in the BSA Emergency Preparedness Merit Badge Program. They have been requested to register with Scouting officials in their areas and serve as merit badge counselors. As counselors, local civil preparedness officials coach those Scouts who are working to earn this badge, personally interview each Scout when his work is completed, and certify to his Scoutmaster that he has met all requirements and is entitled to receive the badge.–**John G.W. Mahanna**

'Heroes of the Airwaves'

Noma Shinrock, Deputy Director of Norfolk-Madison County, Nebraska, Civil Defense, said it well in a recent issue of her newsletter, PREPARE:

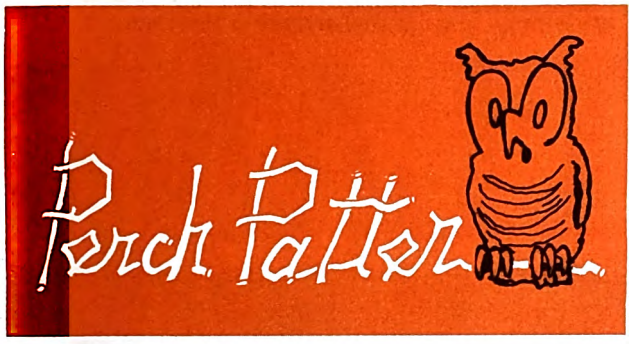
"Norfolk Citizens Band Communications–This is one group that we brag about a lot, and we feel they are deserving of every word of praise we can give them because, in far too many instances, we call them, they go to work without any horns blowing or drums beating, do their job, and go home.

"I'll just give you a couple of 'for instances.' The night before our disaster exercise, my telephone rang about 9 p.m. It was the duty officer at the police station. He told me that a child was lost and had been gone just after school. The Police Department, Sheriff's Department, and Highway Patrol were all looking for this nine-year-old boy, but they had been unable to locate him, and would we help.

"I told him to give us 15 minutes and we would be ready to go to work. In 15 minutes, about a dozen of the CBs were in the operations room, an officer came down and briefed us with all the information police had about the boy, and we went to work. Before the evening was over, 17 units reported for duty, and under the direction of the Police Department, joined in the search. At approximately 11:30 p.m., one of OUR units found the boy, and what a thrill that was! He was located a couple of miles outside of town, so most of us were able to get back to the Police Department before our unit got back with him and were thus able to watch the reunion of the boy and his dad. I want to tell you, there were more than a few damp eyes in the crowd. And that's all the payment these CBers got, or wanted.

"The very next night the CBers were alerted to go to work on the disaster drill, and they again turned out in force and did their usual efficient job of providing us with additional communications beyond what we were able to achieve with the government radios.

"Fortunately, we haven't been called out yet this year on a 'tornado warning,' but the CBers did get called out to watch for flooding and for a possible tornado. Let us be the first to say how much the Civil Defense Department and the government officials in the community really appreciate these 'unsung heroes of the airwaves'."



Aletta . . . Blanca . . . Connie . . . Delores . . . Eileen . . . By any name, a hurricane can spell trouble for people on the Gulf and Atlantic coasts. And since the "season" for the giant storms is on us now and will continue through November, it's a good time to review the weather advisory terminology and safety tips associated with hurricanes.

HURRICANE WATCH means a hurricane may threaten an area within 24 hours. Stay tuned to your radio or television set for further advisories.

HURRICANE WARNING means a hurricane is expected to strike an area within 24 hours. If the hurricane's path is unusual or erratic, the warnings may be issued only a few hours before the beginning of hurricane conditions. Precautionary actions should begin as soon as a "hurricane warning" is announced:

Leave low-lying areas that may be swept by high tides or storm waves. The storm can cause huge waves, tides of 15 feet or more above normal, torrential rains, and flash floods in coastal lowlands.

Moor your boat securely before the storm arrives, or move it to a designated safe area. When your boat is moored, leave it, and don't return once the wind and waves are up.

Board up windows or protect them with storm shutters or tape. Danger to small windows is mainly from wind-driven debris. Larger windows may be broken by wind pressure.

Secure outdoor objects that might be blown away or uprooted. Garbage cans, garden tools, toys, signs, porch furniture can become missiles in hurricane winds. Anchor or store them inside before the storm strikes.

Store drinking water. Your water supply may be contaminated by flooding.

Check your battery-powered equipment. Your radio may be your only link with the world outside the hurricane, and emergency cooking facilities, lights, and flashlights will be essential if utilities are interrupted.

Keep your car fueled. Service stations may be inoperable for several days.

Stay at home (if you haven't been instructed to evacuate) if it is sturdy and on high ground. If not, move to a designated shelter, and stay there until the storm is over. Mobile homes are very susceptible to high winds and you should move promptly into more secure quarters.

Remain indoors during the hurricane. Travel is extremely dangerous during a hurricane because of flying debris, flooded roads, and downed wires.

Monitor the storm's position through National Weather Service advisories.

BEWARE OF THE EYE. If the calm storm center passes directly overhead, there will be a lull in the wind lasting from a few minutes to half-an-hour or more. Stay in a safe place. *Remember*—at the other side of the eye the winds rise rapidly to hurricane force and come from the opposite direction.

Stay away from banks of rivers and streams. Hurricanes moving inland can cause severe flooding over broad areas.

Tornadoes are often spawned by hurricanes, so listen for tornado "watches" or "warnings."

Retarding Fire

Combustible materials form an important and inescapable part of our environment. Cleanup campaigns might reduce or rearrange them, but there will always be some wood or paper or fabric around. Over the years, many commercial approaches to fire retardants have been tried, and some are now on the market. All of these rely on impregnating the wood (or cloth, etc.) with a retardant chemical that coats the combustible molecules.

Fire is a constant threat that requires peacetime and wartime preparedness. Nearly a decade ago the Defense Civil Preparedness Agency began a research effort to identify and perfect methods of reducing the fire susceptibility of homes and offices and their furnishings and other contents. The DCPA approach was to include one provision not needed in the commercial area: the fire retardant had to be something that could be readily applied to existing materials and by unskilled laymen, not through elaborate manufacturing processes.

Anne Lipska, formerly at the U.S. Naval Radiological Defense Laboratory and now at Standford Research Institute, has pioneered a new fire retardant technique for DCPA. Revolutionary in two ways, it has attracted the attention of such prominent potential users as the managers of Mount Vernon, George Washington's historical home, and representatives of the commercial wood shingle industry.

First, the technical aspects of the system are noteworthy in that the retardant is deposited *inside* the combustible molecules, thereby reducing their hazard internally. Second, the application is easy, requiring two spray or brushing jobs that can be handled by untrained people. Thus, in time of crisis (or at any earlier time) people can treat their own shingles, curtains, or other combustible materials, and greatly reduce the incidence and spread of fire.

Weathering tests in old roofing shingles have so far indicated a stable bond for at least five years in the open air. Tests continue, and the program probably will be funded from outside DCPA in the next year.–**James W. Kerr** DCPA Research.

Preparedness in Transition:

THE PORTLAND STORY

Two decades ago many preparedness officials pointed to Portland, Oregon, a city of more than 300,000, as a model for local civil defense programs. Then, in 1963, Portland eliminated civil defense. Today the program is back—and growing. This is the up-down-up story of civil defense in Portland.

By ROBERT G. GROW / DCPA Region Eight

On June 14, 1973, the City Council in Portland, Oregon approved an ordinance creating an Emergency Services Program. This action came almost 10 years to the month after the City Council voted to eliminate funding for civil defense in that city.

What happened and why? The answers are in a series of events, personalities, opportunities—a story of preparedness in transition in a major American city.

Turn the clock back for a moment to July 1951 when Mayor Dorothy McCullock Lee authorized development of Portland's first civil defense program, only six months after the Federal Civil Defense Act of 1950 was signed by President Truman. Under the leadership of Civil Defense Director Jack Lowe and a staff of 12, the Portland civil defense program grew into what many considered to be one of the finest in the Nation.

Early Accomplishments Cited

Portland had one of the first fully protected and operational civil defense Emergency Operating Centers (EOC) in the Nation. Built into the face of Kelly Butte, located on city-owned land outside the city, the underground center was a self-sufficient unit built to withstand a 20 kiloton nuclear blast and capable of housing 300 people for an extended period. The 65-by-185-foot semicircular structure, which was three years in planning and a year-and-a-half in construction, was completed in January 1957 at a total cost of $730,000. Local funding for this project was by means of a specific bond issue voted upon and approved by the citizens of Portland.

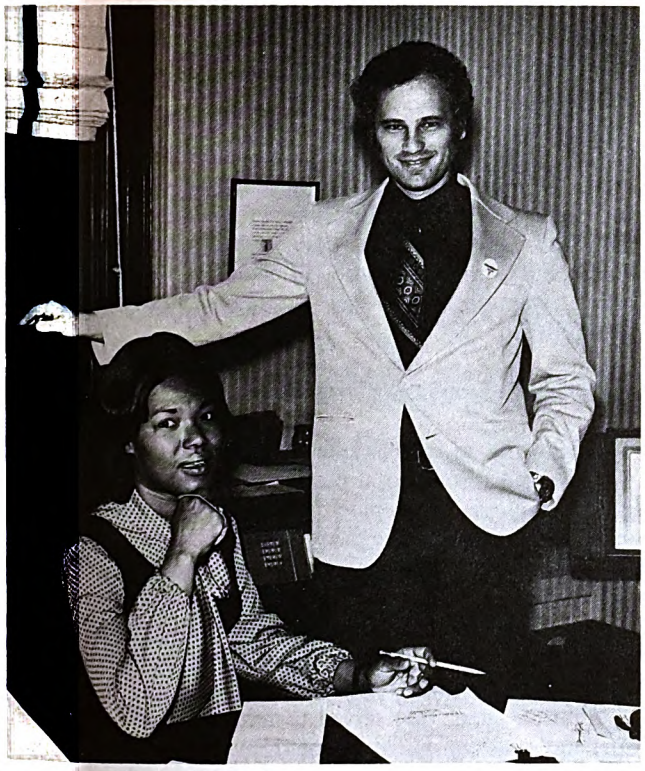
Portland also was the only city of its size (372,000 population) in the Nation to conduct a civil defense exercise in which the entire population was evacuated from 1,000 blocks of the downtown area. This exercise, dubbed "Operation Greenlight," was conducted during a rainy afternoon on September 27, 1955. In three hours, more than 29,000 vehicles and 101,000 people were moved out of the area. The exercise was documented and shown on national television and abroad. Later a film, entitled "A Day Called X," featuring the evacuation exercise, was produced and shown throughout the Nation.

Then the Ax Falls

Over a 12-year period the city participated in Federal civil defense programs, receiving almost $680,000 of Federal financial assistance for authorized civil defense

UNDERGROUND OPERATIONS CENTER / Nearly two decades ago - in 1956 - construction work is in progress for the Portland Civil Defense Emergency Operations Center at Kelly Butte.

EVACUATION EXERCISE / In one-way traffic cars and pedestrians stream across a Wilamette River bridge during Portland's "Operation Green Light" evacuation exercise in 1955.



Portland Emergency Services Coordinator Freddye Petett and Mayor Neil Goldschmidt.

personnel and administrative expenses, hardware, surplus property, training and student expenses, and EOC construction. The local program was pointed to as a model in the Nation, but all of this came to an abrupt halt.

On May 21, 1963, the local funding of $56,000 for the Portland civil defense program was eliminated, effective July 1, by vote of the City Council. The vote was four-to-one with Mayor Terry Schrunk being the lone advocate for retaining the organization. Mayor Schrunk had been Sheriff and Civil Defense Director of Multnomah County (which includes Portland) and was well aware of the need for a strong civil defense posture.

The late City Commissioner Stanley Earl, a staunch opponent of civil defense, led the fight for its elimination. Events at the National, State, and local level were used to support his views. Earl was supported by the late Commissioner William Bowes. The other two Commissioners, Mark Grayson and Ormond Bean, felt that a coordinated countywide agency or committee was needed to prepare for emergencies and disaster relief, whether called civil defense or not, but they went along with Earl and Bowes in the voting.

Events Leading to Council's Action

Prior to the Council's action, Portland Civil Defense Director Jack Lowe had not been supporting the National Fallout Shelter Program because he believed that evacuation was the best protective action in the event of a nuclear attack. In his view it was illogical to expect people to remain in shelters to await destruction by a nuclear blast. Besides that, all of the public fallout shelters were in downtown Portland while the people were mostly located elsewhere, especially at night. In addition, nationally published slides representing possible fallout conditions under prevailing wind patterns for both a spring and fall day just happened to show much of Oregon untouched by lethal fallout. (On another spring or fall day, the slides could have shown all of Oregon engulfed with fallout.)

Meanwhile, dissatisfaction with the civil defense program was growing in other parts of Oregon, capped by events on Columbus Day, October 12, 1962, when a widespread and violent windstorm surged across Oregon and Washington, causing extensive damage. The State Civil Defense Agency did not respond to the problem, and the local organization in Portland was not fully activated because Acting Mayor William Bowes did not consider it necessary. He felt that the city's emergency services performed satisfactorily

during the storm. In spite of this, Commissioner Earl felt civil defense should have been more active, and he began an active campaign for its elimination. Several members of the State Legislature shared his opinion, and in March 1963 State lawmakers threatened to eliminate the State Civil Defense Agency entirely, but relented and finally cut it from a staff of 19 to a staff of only three, reducing the budget from $190,000 to $50,000 for the biennium. Since the State would not fully support the program, this was taken as proof by the City of Portland that the civil defense program no longer deserved its financial support. Portland voters rejected special revenue measures for civil defense in May and again in November of 1962. The voters also rejected revenue measures for schools and other programs, but the civil defense defeats were interpreted as a mandate for elimination of the program, and led to the City Council's action of May 1963.

The Program In Limbo

The Kelly Butte Civil Defense Emergency Operating Center was mothballed. All the communications equipment remained in place and was tested periodically so that it could be reactivated at any time. Tight property control was maintained on all equipment and furnishings which had been funded in whole or in part by the Federal Office of Civil Defense, predecessor agency to the Defense Civil Preparedness Agency. In the interim the EOC was used as a police training facility.

Mayor Schrunk retained his belief that certain elements of the civil defense program should be maintained. He and Multnomah County Commission Chairman Mel Gordon appointed a joint disaster committee charged with the responsibility of presenting to the City-County Coordinating Committee a comprehensive disaster plan in lieu of the former Disaster Relief and Civil Defense Operations Plan. This plan was never fully developed because of disagreement over the inclusion of the public fallout shelter stocking program.

Even though there was no centralized coordinating agency throughout the 10 years of civil defense dormancy in Portland, the Fire Chief was given responsibility for civil defense planning, and individual city and county bureaus had responsibility for maintaining a planning and response capability. However, reaction to suspected or actual major emergencies were handled when they arose. Several potential or actual disaster situations occurred during the period, such as the proposed movement of military nerve gas (1970) over rail lines adjacent to Portland, civil disturbances at Reed College and Portland State University, and a bombing of the Portland City Hall. In 1970 there was the threat of demonstrations and violence in connection with protests against the National American Legion Convention by the Peoples Army Jamboree. An effective command center operation was set up in Police Bureau headquarters staffed by representatives of other city bureaus and private utilities in addition to police. It operated well and pointed up the value of coordinated emergency operations.

The year 1972 was marked with disasters. At first, an extremely heavy snow pack in the mountains caused concern that certain sections of Portland might be flooded by the Columbia River; the Fire Department was tasked with developing a coordinated flood-response plan. Another problem that year was flood and landslide damage to the city's water reservoir at the Bull Run Watershed. Also in 1972 the "unheard of" happened: A tornado struck five miles away in Vancouver, Washington and caused much destruction and several deaths. Had it touched down on the south side of the Columbia River, a large area of Portland could have been affected. All of these situations helped point up the need for a better emergency planning and coordination effort.

Throughout the years DCPA Region Eight and the Oregon State Civil Defense Office maintained contact with Mayor Schrunk, offering assistance in civil defense planning and organization. The atmosphere for disaster preparedness improved in Portland as time passed and old hostilities faded, but Mayor Schrunk, ill much of his last year in office, was unable to get a preparedness organization reestablished.

Preparedness Emphasis Expanded

Meanwhile, at the National and State levels, civil defense was changed from a total nuclear war oriented program to giving emphasis to preparedness against all disasters. This made the program more palatable to Portland officials. The State Legislature, recognizing that a three-man State staff was inadequate, increased the staff to 10, and changed the name of the agency to Department of Emergency Services. It is now the Emergency Services Division located in the Governor's Executive Department.

Another event that served to rejuvenate civil defense in Portland was an announcement in 1972 by the Justice Department's Law Enforcement Assistance Administration (LEAA) of a $20 million high impact program in the city to study ways to reduce stranger-to-stranger street crimes. One of the recommendations of the project was an improved communications capability through a consolidated city-county police-fire communications dispatch center. There were few facilities available to house the system, so the mothballed Kelly Butte Civil Defense Emergency Operating Center was selected as the site for the center.

Mayor Appoints Emergency Coordinator

Shortly after the announcement of the LEAA $20 million project, the people of Portland elected an aggressive young man, Neil Goldschmidt, as their Mayor. Immediately upon taking office, Mayor Goldschmidt began surrounding himself with qualified young staff members and making necessary changes in city government structure and operations. Because the timing was right, he accomplished what Mayor Schrunk had been unable to do: He made civil preparedness an essential executive function by directing the establishment of a Portland Emergency Services Office

within the Office of the Mayor. A local ordinance creating the office and outlining its responsibilities was approved by the City Council on June 14, 1973. It directs that department to coordinate the development of disaster operations plans, and requires that the Council be briefed on this subject in April of each year.

Shortly after this City Council action, Mayor Goldschmidt appointed Mrs. Freddye Petett as Portland Emergency Services Coordinator. Mrs. Petett, 29 and the mother of a nine-year-old boy, is a former data systems specialist for the Portland Model Cities Program and director of a private education and advancement program. She is a graduate of Portland State University and is currently enrolled in the Masters Program in Urban Studies at Portland State University. She had had no previous emergency services experience, and her first year exposure to the program has been an extremely busy one.

First Job: Revitalize the Program

Currently Mrs. Petett has only a secretary assisting her on a parttime basis, but she hopes the staff will be expanded as the program is developed. She is investigating the Civil Defense Mobilization Designee program, and is considering other means to increase her staffing without creating a large organization within the Mayor's office. Her job is to revitalize the program, evaluate the potential, and plan the responses for various kinds of disasters in the city, including major accidents, earthquakes, floods, civil disturbances, and war-caused disasters. With assistance from DCPA, a hazard analysis, based on currently available data, has been prepared for Portland. The analysis also identifies disaster studies scheduled or currently under way by other Federal or State agencies that will provide updated information.

Another step forward was the formation of committee, composed of representatives of city bureaus, to help develop a new emergency operations plan. Mrs. Petett briefed the City Council in mid-May on the status of the plan development, and the Council gave approval to her efforts. She expects to complete the plan and exercise major elements of it in 1975.

Current with the development of the operations plan has been the requirement for liaison with the LEAA High Impact Program, to assure that the communications dispatch center to be installed in the Kelly Butte EOC will lead to increased operational capability for both day-to-day and major emergency operations. This has involved working closely with the architect and the communications consultant. Both an EOC and a Communications Planning Study, to qualify the city for DCPA communications and EOC funding, have been completed and approved by DCPA Region Eight. Since the communications dispatch system will lead to a sophisticated and advanced EOC operational capability that should once again make Kelly Butte a model for the Nation, DCPA Region Eight has approved a project for $250,000 Federal share to assist in the necessary remodeling and renovating of the facility.

Coordinator Attends Staff College

Last year Mrs. Petett attended the DCPA Staff College and completed the first phase of the four-phase Career Development Program. Since then she has been called upon to make numerous speeches to civic groups on the subject of disaster preparedness. Her actual experience with disaster response, however, has been limited to two minor situations—floods last January and a windstorm the next month. As a result of the January flood threat and because of the threat of further spring flooding, she coordinated the updating of the 1972 Flood Response Plan developed previously by the Fire Bureau. She is currently working with the Police Bureau to update its contingency plan for civil disturbances.

Mrs. Petett worked closely with the Oregon Civil Preparedness University Education Program during May in developing a Business and Industry Conference for Portland, and she also assisted the Multnomah County Council of Hospitals to develop and conduct a medical exercise in June. The exercise critique pointed up several deficiencies, and will be used as a tool to guide her planning and coordinating efforts for the coming year.

A Multitude of Tasks

In addition to these activities, Mrs. Petett was selected by Mayor Goldschmidt to chair a Portland-Multnomah County Security and Privacy Committee charged with developing guidelines for the protection of the rights of citizens whose records are a part of computerized police files. She has also been requested to develop an ambulance ordinance to assure uniform equipment and training standards for all city-dispatched ambulances, to work with the County Health Department in developing a City-County Emergency Medical Services Committee, and to develop an air pollution ordinance for Portland.

"The responsibilities of the Emergency Services Coordinator are extremely demanding, but exciting," Mrs. Petett said. "Coming into emergency preparedness with no previous exposure to the process or the problems, I found the two weeks spent in Phase I at the DCPA Staff College very helpful. I came away with the basic knowledge of what should be done, how *not* to do it, and an overall idea of the tough job I had ahead.

Problems Close to Zero

"One of the important things I always keep in mind is that I am a coordinator, not a director. As long as the bureau heads understand that I have no intentions of telling them how to run their bureau in an emergency and that I have the full backing of the Mayor in getting the job of coordination done, problems of cooperation are close to zero."

Just 10 years ago the problems of emergency preparedness in Portland, Oregon appeared all but insurmountable. Today they're being met and solved. ■

BETTER MEDICAL LINKS—Those who work from this dispatch center at the Lebanon County, Pennsylvania, Civil Defense Emergency Operating Center will soon have better ways to link emergency medical service units in the county, thanks to a special grant of nearly $200,000. Standing, left to right, are Edward Biffart, Assistant Administrator of the Good Samaritan Hospital; County Civil Defense Director Walter W. Francis; William A. Shaffer, County Civil Defense Administrative Assistant; and Francis D. Hemler, County Civil Defense Communications Officer. Civil defense dispatch center operators are Raymond L. Leedy, foreground, and Russell Chadwick.

'Just What the Doctor Ordered':

Working for a Grant

By WALTER W. FRANCIS / Director of Civil Defense / Lebanon County, Pennsylvania

Lebanon County, Pennsylvania, Civil Defense has an approved Emergency Operating Center which operates around-the-clock to handle all police, fire, and ambulance dispatching for the county, in addition to our routine and emergency civil defense related traffic. One big gap in our communications capability has been the lack of direct voice contact between hospitals, ambulances, and the dispatching center. We can talk to ambulances by mobile radio on police and fire frequencies, but for an ambulance operator to communicate with a hospital emergency room, he must relay through us by land line.

Recently the Robert Wood Johnson Foundation of Princeton, New Jersey, and the National Academy of Sciences announced the awarding of 44 grants, totaling $15 million, for improving emergency medical services communication systems. ("Emergency Medical Grants," FORESIGHT, July-August 1974). The 44 grants were selected from 252 applications.

One of the successful applicants was Walter W. Francis, Director of Civil Defense for Lebanon County, Pennsylvania. This is his story of how key people in his community worked and worried together to get "just what the doctor ordered" for a modern local emergency medical services communication system.

The Basic Problem

Several years ago, before I was the County Director of Civil Defense, I served on a committee which was studying this problem. Briefly, the main obstacle was this: In spite of a willingness to cooperate, how could six hospitals, which included Federal, State, county, community, proprietary and religious-affiliated institutions, plus 10 independent volunteer ambulance units which provide their own equipment, all get the approval of their various regulatory bodies and budget in the same year to provide the communications hardware necessary to provide a complete new medical emergency network separate from other emergency response frequencies?

After several meetings, this problem was unresolved and, although it was not forgotten, it simmered on the back burner until April 1973, when I received a news release through civil defense channels calling to our attention the announcement, by the National Academy of Sciences that the Robert Wood Johnson Foundation was making available $15 million to fund approximately 50 projects to provide basic support for the establishment of regional medical emergency communications systems.

I sent for and received a packet of informational material from the Academy and carefully studied the requirements. I was impressed by the fact that the problems pinpointed by the Foundation, regarding the flaws in emergency response systems nationally, were essentially the ones our committee in Lebanon County had encountered.

Working for a Grant

To successfully compete for one of these grants would give us "just what the doctor ordered."

Help Needed Now

It was now the second week in May and the first deadline to meet was to file an intention to submit an application by June 1. So far, I was in this alone. I needed help and support and I needed it fast.

First I met with our Lebanon County Commissioners. Commissioners Thomas Behney, Harry Fisher, and Philip Feather, and Chief Clerk Donald Rhine were briefed on the Foundation proposal. I asked for and received their permission to attempt to organize concerned groups and individuals for the purpose of submitting an application.

Consequently on May 11, 1973, a general meeting was held at the County Municipal Building. This was an open meeting but especially invited were elected officials, hospital administrators, ambulance units, police and fire officials, and news media. At this meeting the requirements and priorities set forth in the rules for applying were carefully explained and explored through questions and answers. Response was so favorable that the group agreed to file a letter of intent and a committee was formed to prepare and submit an application.

Civil Defense Leads the Way

It was decided that Lebanon County Civil Defense would be the agency to carry the ball, with all other groups pledging full support. I was asked to chair the committee which consisted of Ed Biffart, Assistant Administrator of Good Samaritan Hospital; James Redmond, Chief of Outpatient Services, Hershey Medical Center; Fred Brock, Chief of Engineering, Veterans Administration Hospital; Francis Hemler, Civil Defense Communications Officer; and William Roof, Al Tribioli and Warren Spancake representing the ambulance units.

Another Deadline To Meet

A new deadline now loomed. The application must be submitted by August 1. There was less than a month to solicit and receive the letters of support needed, gather the statistics, develop a budget, outline training plans, describe existing facilities, and complete all the other details associated with the application. The committee met just three times—once to divide up the work, again to compare notes and insure that nothing was being overlooked, and a final meeting to assemble, edit, and make a final review. We met the deadline and the waiting period began.

The original schedule of the foundation was to announce the recipients of grants by December 15, 1973. However, response was so much greater than anticipated and the Academy was so meticulous in screening the applications that it was soon apparent the final selection would be delayed.

At this point, we were hopeful but far from confident regarding our chances.

I had received a listing which showed 39 applicants in Pennsylvania alone. In October 1973, Dr. David A. McConnaughey of the Academy spoke at our United States Civil Defense Council meeting in St. Paul, Minnesota, and I learned that approximately 250 applications were being considered. When I realized the number and quality of our competition, my hopes began to fade and the committee began to investigate alternative ways of funding our project. We were determined that, having gone this far, we must not give up.

Next came a letter from Dr. Robert M. Heyssel, Chairman of the review committee, informing us that we were among 140 applicants still under consideration and our hopes rose again.

All along I had told our committee, "If we could just get these people to make a site visit to Lebanon County, I'm sure we could sell them on our need and our ability to carry out a successful project."

Investigative Team Arrives

Subsequently and I feel fortunately for us we did receive such a site visit. On March 13, 1974, we were visited by Dr. McConnaughey and Dr. Tamarath Yolles. These two perceptive and knowledgeable individuals reviewed with us every facet of our plan. While asking very penetrating questions, they still managed with their friendly manner to put us completely at ease and give us every opportunity to state our case. The format of the review permitted us approximately one hour to make a presentation of our own, and the remainder of the day we would have key people on hand to answer questions.

I had contacted a representative cross section of concerned people including both those who would deliver an emergency service and those in a support role.

On the morning of the hearing I was indeed pleased to see present our elected officials, hospital administrators, physicians, the president of the ambulance association, the fire marshal, police officials, Chamber of Commerce, the news media, and numerous others.

A Full, Frank Discussion

Our presentation consisted of a slide and tape program of about 15 minutes duration which showed the strengths and needs of our community of more than 100,000 people in southeastern Pennsylvania. For the remaining 45 minutes

allotted to us, we had about 15 key individuals speak. I was especially proud of the way these people each had something relevant and important to say in their two to three minutes on the floor and without repetition—each speaking to his own area of interest and expertise. This and the way they frankly and fully answered the questions put to them by the site visit team was, I believe, a big plus for our chances.

After we had seen Dr. Yolles and Dr. McConnaughey to their planes, I had a good feeling and a reinforced confidence that we would be successful.

The Good Word Arrives

On May 22, 1974, I received the long awaited telephone call and the following day the Foundation's news release showed Lebanon County, Pennsylvania to be one of the 44 recipients of grants.

We received a two-year grant of $197,800, and propose to use the money to provide all the hardware, completely installed, for a controlled emergency medical services dispatching base in our Emergency Operating Center. This will include a two-way radio base at the EOC to communicate with each of the six hospitals in Lebanon County and a two-way mobile and portable radio network for each of 13 ambulances. It will also include biomedical telemetry equipment for transmitting patients' vital signs from the field or disaster area to the emergency rooms of the three major hospitals that operate emergency rooms around-the-clock. Some of the money will be used for the training of personnel and for educating the public on the use of the system. We also plan to install the 911 emergency telephone number system as part of the project.

In accepting this grant we have pledged ourselves to provide our community with the best medical emergency communications system possible and to use this opportunity as a springboard to develop a medical emergency response and treatment system which will be a model for progress as the Foundation envisions.

We are indeed grateful to the Robert Wood Johnson Foundation and the National Academy of Sciences for this rare opportunity, and for the lives that will be saved throughout the country as a result of this philanthropy. ■

International Conference

This year's annual conference of the United States Civil Defense Council (USCDC), to be held in San Juan, Puerto Rico, October 6-10, will be international in scope, according to USCDC President J. Howard Proctor of Decatur, Alabama.

Composed of some 2,200 local civil preparedness coordinators and local government officials, the USCDC is concerned with civil defense and disaster preparedness planning and operations, with emphasis on the identification of common problems caused by major emergencies and possible ways of coping with these.

The 1974 international theme is based on the premise that disasters are not unique to any given part of the world. They can strike anywhere. Because of this, many nations are becoming increasingly aware of the need for more effective cooperation and coordination in coping with disasters. By providing basic orientation and useful exchanges of information on common disaster problems, the USCDC 1974 international conference should assist local, national, and international officials in their disaster preparedness plans and operations, and thus help alleviate the suffering and losses caused by disasters.

In addition to representatives of member nations of the Organization of American States, representatives of other nations and a number of international organizations have been invited to participate in the conference. These include: Agency for International Development of the U.S. Department of State; Organization of American States; United Nations Disaster Relief Office; World Health Organization; Pan American Health Organization; United Nations Food and Agriculture Organization; United Nations International Children's Emergency Fund; Inter-Caribbean Emergency Relief Organization; the Red Cross; and the American Council of Voluntary Agencies for Foreign Service.

Also attending will be representatives of the Defense Civil Preparedness Agency; Federal Disaster Assistance Administration of the Department of Housing and Urban Development; and Office of Preparedness of the General Services Administration.

For instructions on making reservations and other conference information, contact either J. Herbert Simpson, Executive Secretary, USCDC, P.O. Box 370, Portsmouth, Virginia 23705; or Mrs. Edma Santiago de Hernandez, Directress, Office of Emergency Services, P.O. Box 5127,

—Mary U. Harris.

HIGH-RISE FIRES: ONE APPROACH—That urban nightmare—fire in a high-rise building—could hold less fear for skyscraper occupants and firefighting personnel in the future if the space-age technology used to pluck Apollo astronauts from the sea is applied widely to lifting people off the roof or out the windows of blazing tall buildings. Limited by fire ladders with an effective reach of about 10 stories, fire departments in some cities—including Chicago, New Orleans, Los Angeles, and Corpus Christi—have been testing helicopter-suspended rescue nets such as the 4-person model shown here. Other models range up to 10 persons and down to a one-person net for rescue from windows or from water. The alternative: A frightful scene such as victims trying to escape from the burning 22-story Joelma Building in Sao Paulo, Brazil last February 1, which claimed more than 180 lives. Information on various fire rescue devices is available through the International Association of Fire Chiefs, 1725 K Street, N.W., Suite 1108, Washington, D.C. 20006.—**RUSSELL B. CLANAHAN.**

United Press International Photo

LOWERING HIGH-RISE RISKS

By ELBERT YEE

An explosion a few months ago wrecked a 24-story office building in New York. A ruptured water tank broke a gas main, and gas seeped upward in the building through the elevator shafts and stairwells. A match or a spark set off the explosion that ripped off a portion of the wall of the building, and severely damaged a luxury high-rise next door. Seventy persons were injured and more than $10 million damage was done in and around the building.

Nearly 30 years ago a U.S. bomber crashed into New York City's Empire State Building, killing 13.

Fire a Prime Threat

Both unusual accidents and many years apart. But accidents and other emergencies occur in high-rise buildings far more often than one might realize. Fire, for example.

In 1972, two fires within two days claimed 16 lives—six in the Rault Center high-rise in New Orleans, and 10 in the Baptist Towers for Senior Citizens in Atlanta.

Sao Paulo, Brazil, suffered two high-rise building fires almost exactly two years apart. The first in 1972 killed 16 people and injured 375. The second, which took place last February, killed more than 180 and injured more than 100.

In New York City alone an estimated 3,000 fires occur each year in high-rise buildings. The more spectacular ones are widely publicized, but not the large number of smaller fires.

These illustrations underscore the fact that the present system of codes, standards, and criteria developed for buildings contain many good requirements, but because they have been pieced together over the years they are generally far from adequate.

National Competition Held

Attention has been given to modernizing fire fighting and fire rescue techniques. In one effort, an organization known as SCORE (Student Competitions on Relevant Engineering) announced a national competition among college students to design new techniques in fire control. Recently the entries were reviewed, and they ranged from a platform and ladder device that can be erected from an open window on the floor beneath a fire, to the winning entry—a microfiche system in which such vital data as

architecture, contents, fireproofing, etc., of any building is stored in the form of microphotographs, to be used as an instant source of information by firemen.

A leading proponent of new concepts in firesafety systems is Arthur F. Sampson, Administrator of the U.S. General Services Administration, whose efforts led to his being named the first Fire Protection Man-of-the-Year by the Society of Fire Protection Engineers.

Mr. Sampson decries the piecemeal approach to firesafety, pointing out that "we fail because we usually do not have a complete picture of firesafety for a complete building." He believes that firesafety must become a major concern of management.

"A coordinated and sophisticated approach to firesafety requires management attention for several reasons," Mr. Sampson said. "First, it requires articulated policy decisions regarding firesafety, protection of property, insurance and calculated risk. Code officials, building inspectors, architects and landlords should not dictate these policies.

"Second, a comprehensive approach to firesafety takes long-range planning, and top management must be involved to sustain the effort.

"Finally, management must be aware of the problem because it involves money. Improved firesafety is a great bargain in the long run, but even bargains cost money."

International Conference Convened

To develop this new approach, GSA convened an International Conference on Firesafety in High-Rise Buildings in 1971 which gave GSA a completely new way of looking at fire prevention and control—a total system approach. Among the conference conclusions: Total evacuation is impractical in high-rise buildings; areas of refuge should be provided for occupants who remain in a building during a fire. Sprinklers should be used more extensively. An emergency control center should be provided for control of internal fire-fighting. A building maintenance manual should be produced by the building designer before the time of building occupancy. A total protection plan for building occupants should be implemented.

GSA then selected a building to become a prototype of this new total firesafety systems concept. In Seattle, a 37-story Federal Building was to be constructed. Even though design had begun on this building, GSA stopped the plans and redesigned the building to include a total firesafety system.

The Seattle Federal Building was occupied in July, and experience gained from this project is already being integrated into future Federal high-rise buildings, including advanced firesafety system designs for Social Security Administration buildings in Philadelphia, Chicago, and Richmond, California, and an Atlanta Federal Building.

(In the next edition of FORESIGHT, a description of the fire management system designed for the Seattle Federal Office Building.) ■

Designing

The understanding of tornadoes and the technology of tornado resistant design are advancing at rapid rates. Expectations are that, in the forseeable future, a rational process for economically designing structures to resist the effects of tornadoes and extreme winds will be developed.

The anticipated design process will incorporate considerations of tornado occurrence probabilities, building content or function to be protected, and the economics of providing various degrees of protection from the effects of extreme winds. Kansas State University, one of the Professional Advisory Service Centers for the Defense Civil Preparedness Agency, is presently preparing a special case study aimed at developing interim design guidelines for building occupant protection from tornadoes and extreme winds. The interim guidelines will be developed as guidance for building designers.

Interest in Underground Schools

One type of building design, the underground structure, similar to many civil preparedness Emergency Operating Centers throughout the Nation, is resistant to the effects of the high winds in a tornado. Many school officials throughout the Nation have been requesting information from DCPA on schools that have been designed as underground facilities.

The Abo Elementary School was the first completely underground school in the world and opened in Artesia, New Mexico in September 1962. This school was selected for study by the Office of Civil Defense (now DCPA), due to its unique feature providing dual use as both a school and a public shelter. In 1972, ten years after the school opened, a study was conducted to determine the effects, if any, on the pupils attending a completely belowgrade school. One of the study conclusions was that, the Abo Elementary School and fallout shelter had no detrimental effects on the achievement of its pupils. The study also emphasized that parents of the students as well as the general community in Artesia accepted the Abo School as a good elementary school.

Since the construction of the Abo school, other schools have been constructed underground, some primarily for protection from tornadoes. Professor Delbert Ward, at the University of Utah, presently is making a study on underground schools for DCPA for possible use in a technical report. Schools which Professor Ward presently is reviewing for use in this study include the Davis Elementary School at Davis, Oklahoma; North Main Street Elementary School at Pleasantville, New Jersey; Whittier Middle School at Norman, Oklahoma, along with two other schools in Norman of identical designs; and the Chapel Hill Elementary School at North Kansas City, Missouri.

The study on underground schools is focused on energy conservation, noise reduction, reduced maintenance costs,

Safer Buildings

By George T. Goforth
DCPA Engineering

and reduced vandalism as well as protection from natural disasters, such as tornadoes, and the effects of nuclear weapons.

Professor Ward recently completed an excellent study for DCPA on "Schools in Kansas with Tornado Protection" which has been printed as DCPA Technical Report, TR-79. This report describes a school district in suburban Kansas City, Kansas, and how it has planned to safeguard its children in schools from the devastating effects of a tornado. The district program called for upgrading and expanding a number of existing schools to correct educational deficiencies and to provide tornado shelter for pupils. Tornado protection was developed in 14 existing schools and in the design of one new school.

The educational needs of each existing school in the Kansas district were unique due to wide disparity both in construction features and in space arrangements. Several of the schools were in need of library, music, art or science areas; others needed indoor activity areas for the severe Kansas winter climate; two others needed no new instructional areas but because of their light construction appeared to offer no suitable tornado-resistant shelter.

Four Main Design Groups

The design criteria for each school were established by the architects after considerable research into space needs and tornado-resistant design. The architects found that fallout radiation protection was a spin-off benefit in most of the tornado-protected spaces. The designs illustrated in the technical report can be categorized in four distinct groups:

– Addition of new instructional facilities with tornado protection included in belowground space. This was accomplished with reinforced concrete slabs over the basement.

– Addition of new instructional facilities with tornado protection included in aboveground space utilizing reinforced concrete construction.

– Addition of new single-use, tornado protected space belowground.

– Renovation of existing facilities to create tornado-protected areas.

The concept of dual-purpose tornado shelter was followed by the architects. Although most of the schools would not be expected to come through a tornado undamaged, each offers an area of safety for the students—from building collapse, from pressure differential loadings, and from flying debris. These schools gained their protection in a variety of ways, which are described in the report.

In addition, the report also provides an excellent comparison of design considerations for protection from tornadoes and fallout radiation. Shelters which provide protection against tornadoes and nuclear explosions, including fallout radiation, have several common aspects. Foremost is their purpose—that of providing for the safety of people.

The report, *Schools in Kansas with Tornado Protection,* TR-79, is available free and can be obtained from State or local civil preparedness offices or by writing to the U.S. Army AG Publications Center, Civil Defense Branch, 2800 Eastern Blvd. (Middle River), Baltimore, Maryland 21220.

New Educational Films

One of the Defense Civil Preparedness Agency's most extensive educational film series has been completed in time for use during the 1974-75 school year.

The nine-film series, entitled "Your Chance To Live," will be distributed through the civil preparedness education coordinator in those States that have a contract with DCPA to include civil preparedness instruction in the school curriculum.

Each 14-minute film in the series addresses a specific chapter in the DCPA student textbook, "Your Chance To Live," intended primarily for junior and senior high school students and incorporated in the educational programs of school systems throughout the United States. The films support and illustrate the key points of the text. They are designed to be shown after the student has read the corresponding textbook chapter, followed by the teacher's classroom discussion.

The nine films, released as a set, are:

EARTHWATCH (an introductory, overview film).

FOREST FIRE.	WINTER STORM.
TORNADO.	EARTHQUAKE.
HURRICANE.	POLLUTION.
FLOOD.	NUCLEAR DISASTER.

The films are cleared for public exhibition and non-sponsored television. DCPA anticipates that local educational television and cable television stations will be interested in telecasting the series, but at this time distribution plans are not firm for the television medium.

In addition to the films, nine filmstrips on the same subjects will be completed and distributed this winter. The sound track for the filmstrips will be on 10-inch records, and can be transferred to tape cassettes for filmstrip projectors using that type of sound system.

A DCPA Information Bulletin will be issued soon to provide more details on the use of the film series for general public information purposes, the purchase cost of the films and filmstrips, and where they may be purchased.

Personal Views on MOBDES

Two years ago the Defense Civil Preparedness Agency joined with the Army, Air Force, and Marine Corps in a Civil Defense Military Reserve Mobilization Designee program—a program aimed at strengthening Regional, State, and local civil preparedness staffs while offering training and emergency assignments near their homes to Army, Air Force, and Marine officers, warrant officers, and enlisted members of the Individual Ready Reserve.

Colonel Samuels is the Executive Director of the American Society of Allied Health Professions, Washington, D.C. He is also the MOBDES assigned to the Public Information Office at DCPA Region Two, Olney, Maryland.

Frankly, I cringed at the prospect of closing out my Air Force Reserve career as some sort of latter-day air raid warden.

But in my scramble for a slot so that I could continue my participation in the reserve program, the Civil Defense Military Reserve Mobilization Designess program (MOBDES) seemed like the best of the limited opportunities.

That was nearly a year ago. Today the story is much different.

A Vital Program

Now I find that I have become involved in a program that has vitality and provides a self-satisfaction of contributing to my community's welfare, a broadening of my personal as well as professional knowledge base, and allowing for the successful continuation of my commitment to the Air Force Reserve.

Furthermore, I have yet to see an air raid warden.

What may well come as a shock to many Americans, civilian as well as military, is that the civil defense stereotypes no longer exist. In fact, such stereotypes have not been around for years as the volunteer block wardens and the auxiliaries all have settled in the dust of history along with America's first civil defensemen, the famous Minutemen of Concord.

Preparedness for Disasters

The Defense Civil Preparedness Agency (as it officially is called today) is composed of a cadre of experts, each a professional in his own right and prepared to respond instantaneously to a variety of disasters, be they natural or nuclear. The severity or the type of disaster striking a community is not as important as the response mechanism which has been designed to reduce to the lowest possible minimum the loss of both life and property regardless of whether it is an atomic holocaust or a rampage of nature.

Inasmuch as disasters—be they tornado, blizzard, flood, or nuclear war—can strike at anytime and anywhere with virtually no warning, contingency planning is the way of life in today's Defense Civil Preparedness Agency programs. And not only does the MOBDES become a part of this life, but he participates fully with the DCPA professionals.

My own assignment at the Federal Regional Center is Assistant Emergency Public Information Officer. There are 16 other MOBDES also assigned to the huge underground center at Olney, Maryland, fulfilling positions ranging from Assistant Director for Field Operations, to staff slot in Training and Education, Accounting and Fiscal, Technical Services, and Program Analysis.

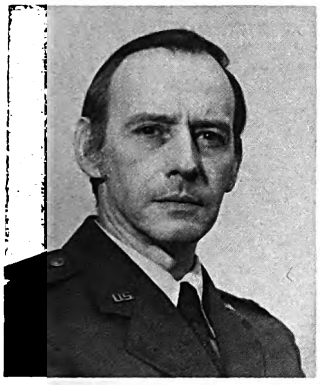
Each MOBDES gives one or two days each month (usually at the MOBDES convenience) at the Center for retirement point credit plus a 12-day annual active duty which includes pay as well as retirement point credit. Additionally, professional courses are available for MOBDES personnel.

"This assignment means more than retirement points and two weeks of active duty," according to Army Colonel Ruben Whitley. "This assignment provides training for me that I would hope to use in some way upon my retirement from government employment."

Colonel Whitley in civilian life is with the Internal Revenue Service. But his assignment at the Federal Regional Center is with the Training and Education Section, which already has afforded him the opportunity to attend a DCPA school course at Harrisburg, Pennsylvania.

As the MOBDES assigned to the Federal Regional Center discussed their reserve assignments, it soon became apparent that Colonel Whitley's remarks represented a consensus.

By and large, each of us find ourselves in assignments that are not related directly to our civilian careers. Yet



By LT. COL. WILLIAM M. SAMUELS, JR.

none was uncomfortable with the responsibilities attached to fulfilling his professional role within the DCPA operational programs, be it working on contingencies or performing during an actual disaster emergency.

"MOBDES is separate and distinct from my civilian career," according to Air Force Captain Richard O. Himley, who completed his two-week active duty tour at the Federal Regional Center solving a particular computer access problem for the Technical Services Office.

"It requires a completely different outlook and set of talents," he remarked, adding, "and, as such, it is refreshing and has a broadening promise."

'A Momentous Decision'

Aside from performing in roles different from each one's day-to-day professional life, the MOBDES assignments also represent for some a break from long-time reserve career programs, as noted by Air Force Lieutenant Colonel Frank T. Trippi, who is assigned as a program analyst.

"In my particular case, taking an assignment with DCPA was a momentous decision for me, as it meant leaving my basic Intelligence career field of over 22 years, both active and inactive duty.

"However, from my very first interview and subsequent discussions with the various officials at Region Two, I knew it would be challenging. And, as far as I am concerned, challenging it has been from the first day I came aboard on my two-week tour of active duty in November 1973.

"My assigned task, which deals primarily with improving our headquarters communications/display capability to respond to any sudden disaster situation, draws heavily on my past and current professional civilian/military experience.

A Job With Mutual Benefits

"What is particularly gratifying is the fact that I am free to work independently, with only broad guidance interjected at the appropriate time intervals by our headquarters operating officials.

"To sum up, I believe that my assignment to DCPA is proving to be of mutual benefit—it allows me to exercise creativeness, the net result of which should be the fulfillment of an urgent headquarters need."

Perhaps the reason among the MOBDES that DCPA assignments are of a mutual benefit is due largely to the attitude of the Federal Regional Center's professional staff. Without exception, the MOBDES agree that they are accepted by the Federal Regional Center staff as colleagues —not fifth wheels—who share with them the pride of professional excellence as well as the challenges of assuring maximum effectiveness and efficiency in the accomplishment of the DCPA missions.

The monthly training periods and the two-week active duty tours are designed to assure the MOBDES involvement in major activities, not in scut work.

Thus, what the MOBDES finds in his DCPA assignment is much more than a reserve slot to help him fulfill his commitments. He finds that he has an avocation. ■

Phonemen Spotters

Brazos County, Texas' civil defense program has gained a valuable new network of mobile weather watchers as a result of a safety meeting with local telephone company service personnel.

After County Civil Defense Director Jake Canglose made a presentation on tornado safety precautions and the importance of on-scene reports in assisting radar observers to make specific identification of severe weather conditions, 30 telephone servicemen signed up for two-hours training on how to recognize potentially damaging weather and what to report to civil defense authorities.

One phone official reasoned that since servicemen, most in radio-equipped vehicles, cover all of Brazos County and beyond, they could be an excellent source of timely reports on local weather conditions.

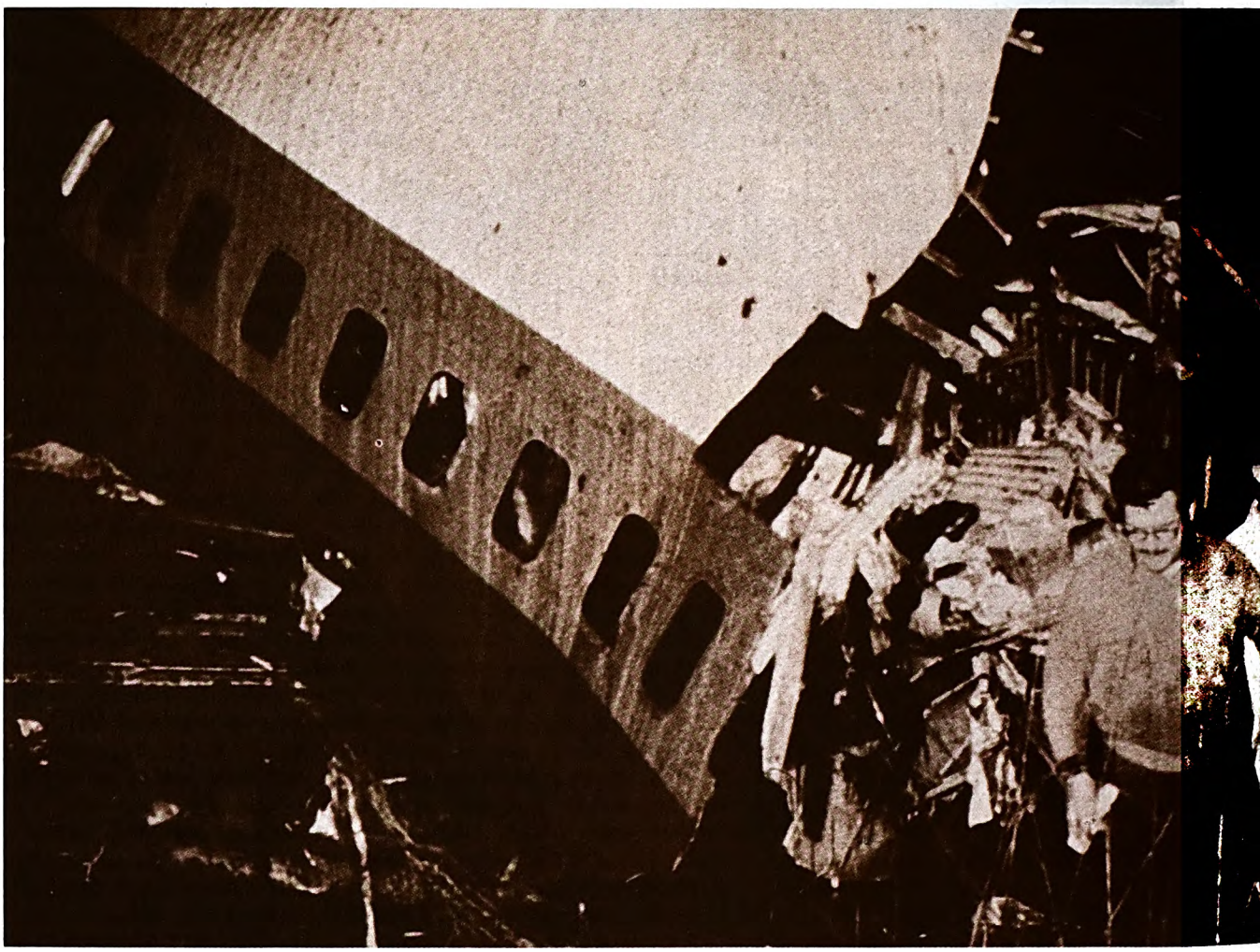
When trained, the telephone men will supplement an existing network of 26 stationary tornado spotters from various communities in Brazos and Burleson Counties.

The system is further augmented by Texas Department of Public Safety patrolmen, local law enforcement agencies, Radio Amateur Civil Emergency Stations (RACES), citizen's band radio operators, Texas Highway Department units, and by representatives of the Federal Aviation Administration.—Dana J. Cessna, DCPA Region 5.

From an Army helicopter, staff members of North Kansas City Hospital rush a "casualty" to the emergency room as part of Kansas City's Operation METROMERGE testing the area's emergency response to a simulated jet crash at the Kansas City Airport. (NKC Hospital Photo)

Those Jumbo Jets

In an Everglades swamp near Miami, rescue workers search for more survivors of a jumbo jet crash. (Miami Herald Photo)



The growing use of jumbo jet airliners in the United States has called to the attention of many communities the need for better emergency plans and procedures at and near major airports in the event disaster strikes with the crash of an airliner with hundreds aboard.

Better emergency plans are being developed, exercised, and sometimes used—as is shown in these two examples:

REHEARSAL—When an airliner crashes at a major airport, hundreds of lives can depend on the right people being in the right place at the right time—and doing the right thing. Kansas City's Operation METROMERGE was designed to test the effectiveness of the area's emergency preparedness response agencies in the event of a crash at the Kansas City International Airport (KCI).

The scenario began with the simulated crash of a commercial jet airliner with 100 passengers aboard. With the initial response by the KCI crash station, METROMERGE began. Through the Kansas City, Missouri Fire Department Alarm Office, notification of the simulated crash was made by telephone and radio to four area fire departments, three military helicopter units, and the Kansas City Area Hospital Association.

Problems of Distance

Like most recently constructed U.S. airports, Kansas City International is located in an area that is removed from the city and its hospitals. Overcoming the airport-to-hospital distance problem and getting adequate medical attention to the "victims" in the shortest possible time was METROMERGE's primary objective.

Eight Kansas City area hospitals participated in the exercise. Military helicopters from Ft. Leavenworth, Kansas, as well as members of the Kansas and Missouri National Guards were involved in transporting "crash victims" to seven of the local hospitals. Additional "victims" were taken by ambulance to Spelman Memorial Hospital in Smithville, Missouri.

Overall coordinator for METROMERGE was Frank H. Spink, Jr., Director of Fire and Emergency Preparedness for Kansas City, Missouri. After the exercise, Mr. Spink told a group of newsmen and disaster response officials that the exercise had pointed up valuable information for emergency implementation.

"We found that, in establishing effective control at the crash site, words rather than symbols should be used on identification vests," Mr. Spink said. "The words 'Doctor' or 'Site Commander' printed on the vests will help workers at the site to identify those in charge."

Mr. Spink said exercise participants also learned there was a need to brief area hospital personnel more thoroughly on helicopter evacuation operations and procedures—to minimize the possibility of accidents while unloading casualties at the hospitals.

"METROMERGE helped all of us involved in disaster response in the Kansas City area to obtain a realistic evaluation of our capabilities in the event of a disaster," Mr. Spink said. "I feel we are well prepared to provide a quick, effective response to a disaster at Kansas City International Airport or any other location in the Kansas City metropolitan area."

REALITY—At 11:42 p.m., less than 49 hours before the start of the then New Year of 1973, a jumbo jet airliner, carrying 175 people and preparing to land at Miami International Airport, crashed in an Everglades swamp 18 miles west of the field.

75 Lives Are Saved

It was the first major disaster involving a widebody airliner in this country. The survivor rescue effort quickly became a massive relief operation involving a large number of helicopters, a commercial ambulance service, and the emergency facilities of six hospitals. Hundreds of personnel from 18 organizations in the Miami area mobilized and responded with amazing speed by aircraft, boat, and land vehicles. Their prompt action saved 75 lives.

Using dramatic, on-the-scene television news footage, the Defense Civil Preparedness Agency has produced a new motion picture, "The Everglades and After," focused on the rescue operation. There were many lessons learned that dark night in the Everglades and at the hospitals. The film tells the story of the operation and shows the need for disaster contingency planning among local governmental units and airport officials.

"The Everglades and After" is in color; running time is 28½ minutes. The film is available on a short loan basis from Regional and State civil preparedness offices, and also from Army Audio Visual Support Center (film libraries). When requesting from an Army Center, refer to the film code number: DDCP55-285. A print and shipping case can be purchased for $115.95 from the National Audiovisual Center, National Archives and Records Service, Washington, D.C. 20409.■

The local coordinator

predisaster planning

BY CHARLES L. MULFORD and GERALD E. KLONGLAN

Research Sociologists
Iowa State University

The Iowa State University Department of Sociology and Anthropology has conducted Defense Civil Preparedness Agency research projects for several years, primarily on aspects of implementing civil preparedness programs in State and local communities.

It is sad but true that the activities of most disaster coordinators do not receive much attention or publicity until an actual disaster occurs. The local coordinator is certain to be criticized if disaster operations are a "bust." Only highly visible and "exciting" activities are likely to be noted, such as rescue, fire fighting, and so on. The planning which went on before the disaster occurred is usually not considered by the public. The coordinator may have difficulty obtaining support for planning before a disaster occurs. The public, however, expects the coordinator to activate a program immediately after the disaster.

Our research with local coordinators who have actually operated in disasters, and the data from our recent national study with local coordinators, emphasize again and again the importance of predisaster planning.

Seeking the Stepping Stones

The importance of knowledge and planning may be illustrated by the story about the local coordinator, the city manager, and his fire chief friend who went fishing. Observing that it was much colder and rainier than he had expected, the coordinator told the other two he was going to "walk to shore and get his coat." He stepped out of the boat, walked to shore—without getting wet—and returned. The city manager was astounded, but not the fire chief who remarked that he, too, was cold and needed a coat. The city manager was equally dumbfounded to see the fire chief repeat the coordinator's remarkable feat. Feeling that he couldn't be outdone, but afraid to ask for help, the city manager said he thought he'd get his coat too. He stepped out of the boat and went straight down—20 feet. After seeing him go under twice, the local coordinator asked the fire chief, "Do you think we ought to show him where the rocks are?"

The question is, how well have typical local coordinators mapped out and located the crucial stepping stones of predisaster plans and preparations? We know for certain that unless local disaster coordinators have been intimately involved in a leadership role in the community and doing predisaster planning, they will be passed over and ignored in actual operations. We know, too, that chiefs of local governmental services will tend to "go it alone" if they haven't been involved in coordinated planning. So, in the event of an actual disaster, many could be working on disaster operations but inefficiently.

Three Key Steps

We know that some coordinators have been successful at predisaster planning. Other coordinators have not developed predisaster plans. Three of the crucial "stepping

stones" in disaster planning that have received emphasis in recent years in DCPA are: (1) local contingency plans; (2) emergency operating centers (EOC's); and (3) emergency operations simulation exercises (EOS's). Consideration of the progress of local coordinators on these plans provides information on the success of local coordinators in predisaster planning. The information also will suggest to coordinators who lack predisaster plans some ideas they might use.

Nearly 80% of the 478 local coordinators in our recent national study stated that a written disaster contingency plan had been developed for their jurisdiction. Although 27% of the coordinators with a plan stated they had developed the plan independently, nearly 72% said that they had cooperated with others in the local executive's office in writing their plan. Only 1% said that someone else in local government had independently developed the plan. So, if a plan exists in the typical American community, a local coordinator helped develop it.

Some Pluses, Some Gaps

Nearly 41% of the local coordinators stated that other local services and representatives from the private sector have also been involved in much planning. The frequency indicates how many of the 478 coordinators said they had worked with each of the services or organizations. For example, 17.8% of the coordinators reported they had worked with departments of local government in order to build the plan. But only 2.2% of the coordinators reported that they had worked with private businesses, and only 2% had worked with representatives of local mass media on their plans—a critical gap since an important aim of civil preparedness is to get official information and instructions to the people in a major emergency.

The typical coordinator is making progress, but the data do indicate some directions for further development, especially planning with private businesses, service organizations, and mass media. The plans that have been developed are typically "all hazards" in nature, capable of being adapted to differing types of disasters.

The question that concerns many people is, "Are the plans only 'paper' ones, or are they realistic; have they ever been tested?" An Emergency Operating Center (EOC) can be used to get relevant people together in pre- and post-disaster situations to evaluate, test, and revise disaster plans. But, do most communities have an EOC?

Most Have an EOC

Surprisingly, we found that nearly 70% of the 478 coordinators in our national sample stated that they had established some sort of an EOC. The major situations that resulted in the EOC's being established were: (1) an actual disaster that showed a need; (2) an EOS that showed the need; (3) availability of Federal funds; and (4) because it was suggested by university extension personnel. Many EOC's are used as an office by civil preparedness staff and/or as a communications center on a day-to-day basis. Nearly 25% said that police and fire officials also used the EOC, and nearly one-third said it was used on a day-to-day basis as a training center.

Many coordinators stated that the EOC had helped them gain community support for civil preparedness. The most important reason for having an EOC, of course, is for coordinating disaster operations. Luckily, many communities will not have a serious disaster in the near future. For all communities, then, emergency operations simulations (EOS's) can provide an effective learning and motivating situation.

We know from those EOS's we have personally observed that they become almost "real" for the participants. But what do local coordinators have to say about EOS's?

Nearly one-half of the coordinators stated their community had run an EOS within the last two years with about two-thirds of the EOS's being nuclear and one-third natural disaster in nature.

One of the direct results of the EOS was that existing plans were often revised or plans developed where none had existed prior to the EOS. Many other benefits and positive results were also mentioned with some of the main ones shown below.

Results of EOS	Percent of Sample
1. Better understanding of disaster operations	44.6
2. Better planning	38.3
3. Other departments appreciate civil preparedness more	38.1
4. Greater community support	27.8
5. Greater contacts with public officials after the EOS	29.7

The picture seems pretty clear to us. Many active and successful disaster coordinators are doing a good job of finding and using the right "stepping stones" for disaster planning and operations. Coordinators have been relatively more actively engaged in planning in the public than in the private sector. If they are to be criticized, it may be that they have not had the time, or felt the need or known how to work more in the private sector. ■

The Apathy Myth

By JOSEPH F. MEALY / Director of Field Operations / DCPA Region Two

Assemble a group of civil defense personnel—Federal, State, or local—and at some point a reference will be made to "public apathy" toward civil defense.

According to Webster, apathy means indifference. In effect, then we in the preparedness business are alleging that the public is indifferent about our mission and the collective efforts of Federal, State, and local governments to be prepared and to act in saving lives and protecting property in large-scale emergencies, including attack.

Is the public truly apathetic, or are we creating among ourselves a popular belief that the public attitude is one of indifference?

Is It a Crutch?

Perhaps the notion of public apathy is nothing more than a convenient crutch for some of us in the civil defense business. Perhaps it is we who are apathetic to the public. Perhaps it is we who are reflecting an insecurity, who are looking for excuses to avoid accountability, or who are seeking comfort and complacency.

While it may appear the public does not seek to know who we are or where we are or what we are doing, the public *does* expect that its governmental leaders and operating officials will respond to its needs in time of emergency. This has been demonstrated time and again during actual disasters. Therefore, we should not assume the public doesn't care whether civil defense exists or not, whether it is effective or not, or whether it is developed or not.

True, there is no clamor or sustained and vocalized demand from the public for civil defense when conditions are normal. Yet there are many signs that the public supports the program and expects the government to operate effectively in any emergency to meet its needs—and this is what "civil defense" is.

High Public Response

The public furnished an extraordinarily high response to a survey of its home shelter capability—a survey clearly related to nuclear attack protection. This was not a sign of indifference.

This same public permitted its property to be licensed and stocked as public fallout shelters during the 1960's—a program also related to attack protection. Most of those facilities, with the permission of building owners, remain an essential part of today's National Shelter inventory. The same public today is permitting updating facility surveys of its property, and these surveys are contributing to an expansion of the shelter inventory. This is no sign of indifference.

Active and aggressive civil defense coordinators report successes in speaking before local community groups. These groups welcome interesting and informative presentations at their meetings—again, no sign of public indifference.

In the past two years the Defense Civil Preparedness Agency has offered on-site assistance to community leaders throughout this country, a process aimed at improving local emergency preparedness plans and procedures. These elected local officials perceive what is acceptable to their communities and their citizens. Not only has the on-site assistance process been welcomed in most areas, it has been deliberately publicized by local public officials who are keenly aware of local public attitudes. This is no sign of indifference.

Civil Defense in the Schools

Educators in nearly all States have seen the value of putting civil defense instructional information into the school curriculum. These same educators face many pressures to advance popular courses and to educate students on subjects of great social concern. Yet civil defense is being taught. This is no sign of indifference.

The news media across the country continue to cover civil defense related stories. If there were public apathy, no story, good or bad, would be considered newsworthy. In addition, there are many examples of local radio and TV stations programming films and interviews featuring civil defense topics. If the media felt the buying and listening audience was indifferent to this subject, there would be no coverage.

Public Expectation, Not Apathy

There are too many signs and too many experiences that contradict a belief the public is indifferent. Therefore, for the sake of truth and for the good of the civil defense objectives we are seeking to achieve, it is time to cease and desist from referring to "public apathy" and using it as an excuse.

There is a *public trust* in the sense of reliance and dependency, not apathy. There is public expectation, not apathy. The trust and expectation is that government, through civil defense at local, State, and Federal levels, is prepared to act effectively in any emergency.

This is the *fact* that is all too frequently obscured by the myth of public apathy. Those of us involved in emergency preparedness would do well to build our programs on a foundation of fact, not fiction. This is what the people expect and deserve. ■

Here's Dedication

By JOSEPH V. QUINN

Uncommon dedication is almost a common virtue in the world of civil preparedness volunteers in many communities—those men and women whose unpaid and often unsung efforts are essential in protecting and helping people in time of emergency.

Charles E. Walker, of Richmond, Indiana, stands out even in this company. Deep personal tragedy has not dimmed his desire to serve his community and his neighbors through civil preparedness.

Walker volunteered to serve with Wayne County civil defense eight years ago as an auxiliary policeman and moved up to the post of shelter officer.

In October of last year, the trouble he was experiencing with his left leg was diagnosed as amyotrophic lateral sclerosis, sometimes called "Lou Gehrig's disease" because it was the affliction that ended the career of the great Yankee first baseman. The disease causes degeneration of the leg nerves and shrinkage of their muscles.

With the aid of a leg brace and cane, Walker was able to maintain mobility and keep up his shelter work for awhile. Early this year, however, he was forced to switch to sedentary duties in the civil defense communications center in the basement of the Wayne County Court House.

In May, Walker's leg became worse, and he had to resort to a wheelchair. Still, his determination to serve was undaunted, and he continued to man the communications console with James Downs. His help is especially valuable during tornado watches and warnings.

Later in May, Walker went to the Veterans Hospital at Dayton, Ohio for examination and got the news he would be confined permanently to a wheelchair. But County Civil Defense Director Paul Smith, a longtime friend and coworker of Walker, emphasizes: "It hasn't diminished his determination to work with us, and we need him. He's an essential member of our staff."

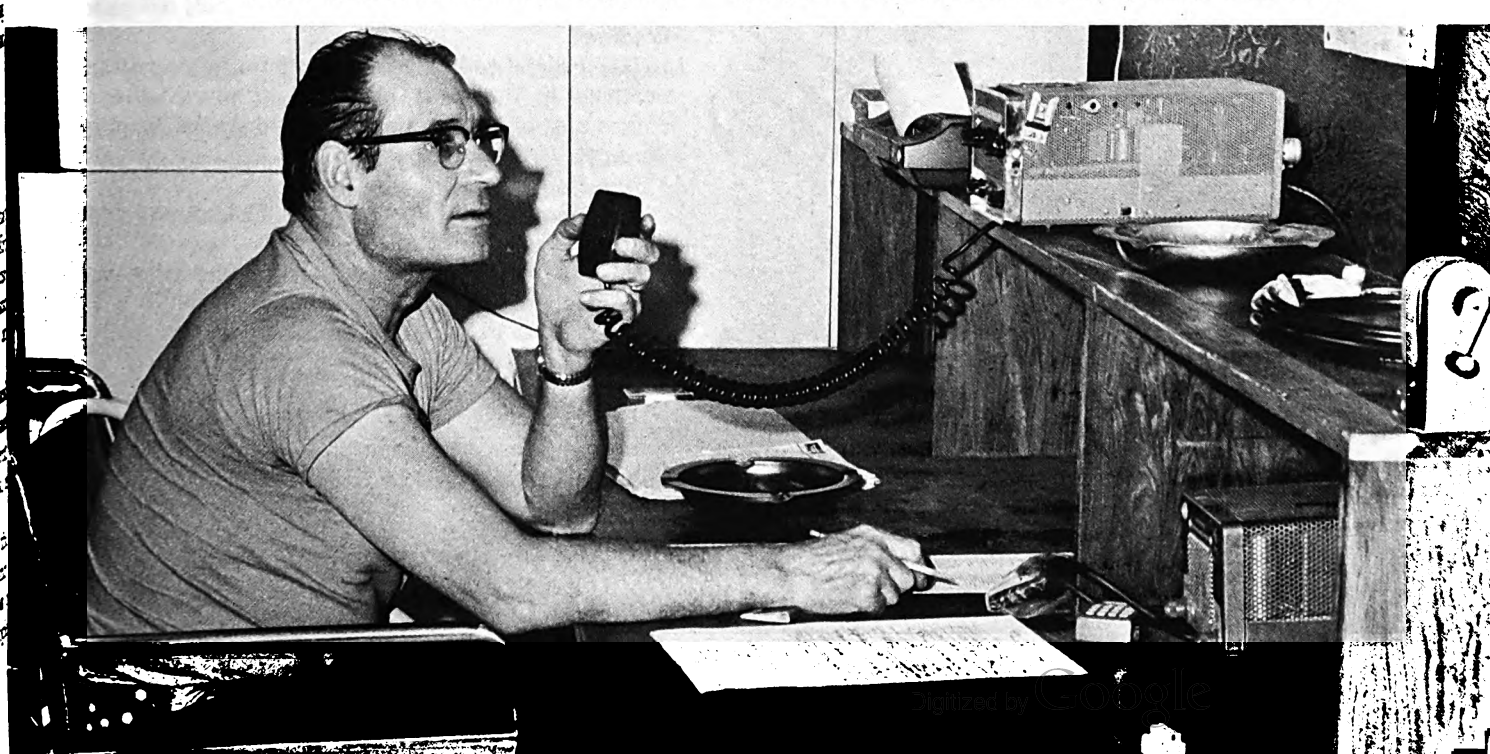
Interviewed by Steve Truitt of Richmond's *Palladium-Item* newspaper, Walker expressed this attitude toward his life and work: "I don't complain about it (having the disease). I've still got a long life to live, and I'm going to live it fully even if it's in a wheelchair."

A native of Kentucky, Walker got into civil preparedness through his experience as a Citizen's Band radio enthusiast. Today, as he maintains net control at headquarters, this experience serves him well in monitoring communications from the country's tornado "spotters," many of whom are in contact with him via CB radio.

One of the spotters, operating a CB radio at home, is Walker's wife, Helen. Her dedication was tested, too, when she fell and broke a leg while her husband was away at the hospital. Although she also was confined to a wheelchair while the leg healed, she continued to operate in her spotter's post.

Two of a kind—people who get things done simply because they believe there's an important job to do and they should do it.

Dedicated Charles Walker on the job in the communications center of Wayne County, Indiana, Civil Defense. (Palladium-Item Photo)



The following information on the National Flood Insurance Program is provided by the Department of Housing and Urban development.

Q – What is the National Flood Insurance Program?

A – It is a federally-subsidized program authorized by Congress in 1968 to protect property owners who up to that time were unable to get coverage through the private insurance industry. The program, for the first time, made flood insurance available to individuals at affordable rates In return for the Federal subsidy, State and local governments are required to adopt certain minimum land use measures to reduce or avoid future flood damage within their flood-prone areas.

Q – Has the program been changed since then?

A – Yes. In December 1973 Congress passed the Flood Disaster Protection Act, greatly expanding the available limits of flood insurance coverage and imposing two new requirements on property owners and communities.

Q – What are the new requirements?

A – First, after March 2, 1974, property owners in communities where flood insurance is being sold must purchase flood insurance to be eligible for any new or additional Federal or federally-related financial assistance for any buildings located in areas identified by HUD as having special flood hazards. Second, all identified flood-prone communities must enter the programs by July 1, 1975.

Q – What happens if a property owner fails to buy the required insurance, or a community fails to meet the deadline?

A – Federal and federally-related financial assistance for buildings in the flood plain will be unavailable to any community or property owner that does not comply with the Act.

Q – What is generally meant by Federal and federally-related financial assistance?

A – All form of loans and grants, including mortgage loans and disaster assistance loans, from either a Federal agency such as FHA, VA, or the Small Business Administration, or banks or savings and loan institutions.

Q – Who is eligible to purchase flood insurance?

A – Any property owner in a community that has had its application approved by HUD.

Q – Where can a property owner obtain a policy?
A – From any licensed property and casualty insurance agent or broker.

Q – How does a community become eligible for the program?
A – By submitting a completed application to the Federal Insurance Administration, HUD Building, Washington, D.C. 20410. As part of the application the community must certify that it is requiring building permits for all construction, and it must also adopt certain minimal measures to regulate building in its flood-prone areas so as to limit damages from future floods.

Q – Must a community adopt zoning ordinances for the entire area within its jurisdiction to initially qualify?
A – No, HUD does not require comprehensive zoning. The minimal land use measures required may be in the form of a resolution adopted by the community as part of its application. At a later date, additional land use measures must be enacted for the flood-prone areas. These could be either made part of existing codes or ordinances or incorporated into new ones.

Q – How can a property owner find out if and when his community qualifies for the program?
A – Once the community's application is accepted, usually within a week of receipt of a complete application, notice of eligibility is announced publicly through the local press media. That information is also available from your insurance agent or broker, the nearest HUD office, local and State authorities, or from the insurance company that services your State.

Q – When can a property owner buy his individual policy?
A – Policies are effective immediately upon purchase for the first 30 days after the community qualifies. After that there is a 15-day waiting period for the policy to be effective.

Q – What recourse does an individual have if his community fails to take steps to qualify, thereby depriving him of coverage?
A – No recourse is specifically available under the Act. But in at least one community residents who suffered uninsured flood losses filed suits against local officials who failed to take action to enter the program.

Q – What type of structures are eligible for coverage?
A – All types of buildings and their contents.

Q – What type of losses are covered?
A – Losses caused by (1) a general and temporary flooding condition of normally dry land areas or (2) erosion resulting from abnormally high water levels in conjunction with a severe storm, or (3) flood-related mudslides involving a mudflow.

Q – How much coverage can I buy, and what will it cost?
A – Under the expanded program the limits of subsidized coverage are doubled, tripled, or more, while rates have been substantially reduced. For example, the homeowner may purchase $20,000 of flood insurance coverage for as little as $50 a year. Property owners already protected under the original program can greatly increase their coverage at a very low cost. If you live in a community where HUD has already completed a rate study, you can further increase your protection by paying the actuarial (non-subsidized) premium rates for the additional amounts of coverage.

The following table sets forth the limits of subsidized coverage and the applicable premium rates:

Limits of Coverage and Subsidized Rates

Types of Structure	STRUCTURE Coverage	STRUCTURE Rates Per $100 of coverage	CONTENTS Coverage (Per Unit)	CONTENTS Rates Per $100 of coverage
Single Family Residential	$ 35,000	$0.25	$ 10,000	$0.35
All Other Residential	$100,000	$0.25	$ 10,000	$0.35
All Non-Residential*	$100,000	$0.40	$100,000	$0.75

*Includes hotel and motels with normal occupancy of less than six months.

Here's a digest of news items on civil preparedness topics:

FORECASTS—"From the standpoint of severity, 1974 is shaping up as possibly the worst tornado year in American history," reports the Associated Press. U.S. government weather experts blame the numerous twisters on the "capricious behavior of one of the two jet-streams that help determine America's weather." There have been 371 deaths (as of late June) and possibly 5,000 injuries from 658 twisters this year. Even if last year's numerical record is not exceeded, says Meteorologist Allen Pearson, Director of the National Severe Storms Forecast Center at Kansas City, Mo., the severity of this year's storms will set a new record. "The average tornado in 1974 has been running for ten miles on the ground—compared with about five miles last year," Pearson said. These high-intensity, long-lived tornadoes have been causing more damage than the average twister of last year . . . Dr. Robert Simpson, former director of the National Hurricane Center, has predicted that a hurricane may take as many as 50,000 lives before the end of this century because of the explosive population shift in coastal areas without enough "escape routes" inland. He advocates stricter building codes in coastal communities to "eliminate structures which would shatter into debris which in turn destroys other buildings." (UPI Washington wire) . . . Meanwhile, "Alabama's Civil Defense officials are taking a long look at the population buildup along the State's coast and mapping out evacuation plans for the coming hurricane season," reported the Birmingham *News*. State Director C. J. Sullivan has dispatched experts to Mobile and Baldwin Counties to help set up disaster plans. Officials estimate that as many as 50,000 people might have to be evacuated if a hurricane struck the Alabama coast.

IN THE WAKE OF DISASTER—"The federal government will pay half the cost of new disaster-warning sirens for Owensboro (Kentucky)," the *Messenger & Inquirer* reported, "but the equipment may have to be protected from vandals. Someone had cut the wires of two sirens which failed to sound during a tornado alert two weeks previously. CD Director Robbie Roberts theorized that an irate resident cut the wires to silence what the person considered more of a nuisance than a protection," the account says . . . A week previously in the same paper Director Roberts and his deputy, George Wilson, addressed the subject of tornado shelters. "Roberts and deputy director George Wilson," the newspaper reported, "were adament yesterday in warning citizens not to use Civil Defense shelters to shield themselves from tornadoes." The officials noted that places designated as shelters are approved only as acceptable protection from radioactive fallout, and made from concrete block, which is usually the first type of structure to crumble in a tornado. Wilson pointed out the best tornado shelter is a basement . The Milwaukee Common Council's Public Safety Committee unanimously approved a resolution by Ald. Robert A. Anderson to use the city's 240 civil defense sirens to warn residents of impending tornadoes, reports the *Journal* . . . "Another look at an early warning system for McCook (Nebraska) will be taken by the city council." The council appointed a committee "to look into setting up a civil defense organization including what federal funding is available," the *Gazette* reports . . . Civil Defense Director Walter Hischke has asked the city to seriously consider allocating money out of next fiscal year's general fund to buy and install a disaster warning system more modern and with more coverage than the city presently has, the St. Charles, Missouri, *Banner-News* reports. Hischke told officials the most desirable new system "would cost approximately $50,000 with half the cost being provided through Federal funds." The story also notes that Federal revenue sharing funds cannot be used as local matching funds . . . "The Clark County (Kentucky) Council approved spending $5,000 to hire a civil defense director for the last six months of 1974," the Louisville *Courier-Journal* reports. "Council President Herbert Baker said the action was prompted by the county's experiences after tornadoes raked Indiana and Kentucky last April 3." . . . Editorial comment in the Milwaukee *Sentinel*: "The proposal that civil defense sirens be used to alert the public at the approach of a tornado deserves endorsement. The suggestion could be adopted in every part of the state where sirens are available. Use of the sirens to alert the public could result in saving many lives." . . . The Bismarck, North Dakota, *Tribune* reports award of a contract for installation of an additional civil defense siren in that city . . . Larry Arnette, plans and operations officer for the Kentucky State Civil Defense Office, told the Frankfort *Journal* that his office has been "flooded with requests for new warning systems," since the April 3 tornado disaster. "In the past, they didn't feel it was necessary."

NEW AND NOTABLE—In Perry County, Pennsylvania, the Civil Defense Department will be moving into a new, larger headquarters and communications center in about 18 months, reports Director Charles Hostetler. The Center, to be financed with Federal (DCPA) matching funds, "will probably be one of the most modern and complete for any county its size in Pennsylvania," reports the Harrisburg *Patriot* . . . Cass County, North Dakota has indicated its

intention to construct a new EOC at Fargo. County Director Leonard Caverly announced that DCPA funds will be made available on a matching basis (*Forum*, Fargo)... Williamsburg (Iowa) city council has voted to apply for Federal (DCPA) funds to buy a new civil defense siren system. "The Federal Government stands ready to pay half the estimated $6,000 to $7,000 cost of the system," reports the Cedar Rapids *Gazette*... The Pueblo County, Colorado, Civil Defense Agency offers a new kind of service to the public—emergency medical cards for children in school. The ID card bears a photograph and name of the student and the names of legal guardians, preferred doctor and hospital, and religious affiliation (*Chieftain*, Pueblo)... In Tulsa, Oklahoma, the Salvation Army's city commander, Major Jack Waters, said a proposal will be made to State civil defense to stock eight SA shelters with cots and food for use as "instant disaster centers." (*Tribune*)... "CD MANNING POLLUTION HOTLINE" says a headline in the Bethlehem, Pa. *Globe-Times*. CD Director Mark Farrell of Northhampton County will supervise a 24-hour hotline to receive citizen complaints of air and water pollution and relay them to conservation and environmental agencies in the county.

NUCLEAR ASPECTS—A *New York Times* headline points out: "Nuclear Club Could Add 24 Nations in 10 Years." Pentagon correspondent John W. Finney reports: "With the accelerating spread of nuclear technology, perhaps two dozen nations could acquire atomic weapons over the next decade unless the technicai and political barriers are strengthened, in the opinion of United States arms control officials." Nuclear weapons are within the immediate reach of Japan, West Germany, Argentina, Brazil, Pakistan and South Korea, the officials say. The remaining deterrent to nuclear proliferation, they stress, is a political one. The nations would have to be induced to renounce the development of nuclear weapons and to accept international controls over their nuclear activities... Prior to the Moscow summit conference and arms limitation efforts, *New York Times* military analyst Drew Middleton summed up the strategic picture as follows: "There has been no evidence since 1972 of any reductions in Soviet military strength... The Russians have carried out an intensive program to improve their strategic nuclear position within the numerical limitations imposed by the arms agreement of 1972—1,610 launchers for ICBM's, and 950 launchers for submarine-based ballistic missiles." Middleton notes the Soviets have flight tested two large new missiles (SS-17 and SS-18) carrying from two to six multiple independently-targeted re-entry vehicles, or MIRV's... Following a Pentagon news conference by Secretary of Defense James R. Schlesinger, the *AP* reported: "The Secretary acknowledged that (under the 1974 Moscow agreements) the Russians will be able to deploy megaton-size warheads on their new missiles as a result of underground tests which may continue for another 21 months before the new limitation on testing takes effect." Schlesinger added that "The growth of our strategic development will be based on the pace of their developments." Following the same news conference, UPI noted that "Schlesinger has frequently said his greatest concern is that the Soviets would marry MIRV technology to their huge missiles." Schlesinger told the press that, technically speaking, deployment of Soviet MIRV's could begin early next year... The extensive system of undergound shelters in China's cities was again the subject of press comment. A *Reuters* dispatch from Peking quotes a visiting Indian official as follows: "It (the shelter system in the city of Talien) makes the great wall of China look like a toy castle." Says *Reuters*: "The Chinese told him that civil defense shelter systems similar to that in Talien existed throughout China."

SURVIVAL FOODS—The *New York Times* headed the story: "Civil Defense Biscuits Feed Drought Victims." It reported: "Millions of pounds of nutritious biscuits are being distributed these days to drought victims in Niger and Chad." The biscuits in question were fallout shelter stocks put in place more than 10 years ago and donated to CARE by New York City. CARE Executive Director Fred Devine noted that, despite their age, the supplies were in excellent condition. "They really became survival biscuits," he said... Janice Tomlin, staff writer for the Dallas, Texas *Times Herald*, recently wrote a report on the city's fallout shelter system: "Although the food supply in some Dallas shelters admittedly is 12 years old, random checks by the U.S. Army veterinary corps have given it a healthy seal of approval."

ADD ON-SITE ASSISTANCE PROJECTS—The *Record*, York, Pa., reports: "Municipal officals of York County communities have been invited to meet with Federal and State civil defense officials at the York County courthouse to review emergency and disaster programs... President Commissioner Charles A. Stein, Jr. said the main purpose of the session is to revitalize the CD program." ... The Reno, Nevada City Council has authorized an OSA project for the city, reports the *State Journal*. Robert A. Gregory, Director of Civil Defense, points out in the news story that Federal (DCPA) funds are available for the service... In Tennessee, Sullivan County Civil Defense Director Wallace Pardue announced that he and State civil preparedness officials will meet with the safety committee of the county court to discuss On-Site recommendations from a survey conducted last January. Pardue noted that a warning system and a mutual assistance agreement among the various counties and cities in the area will be among the recommendations to be discussed. (*Va.-Tennessean*, Bristol).-**Joseph V. Quinn.**

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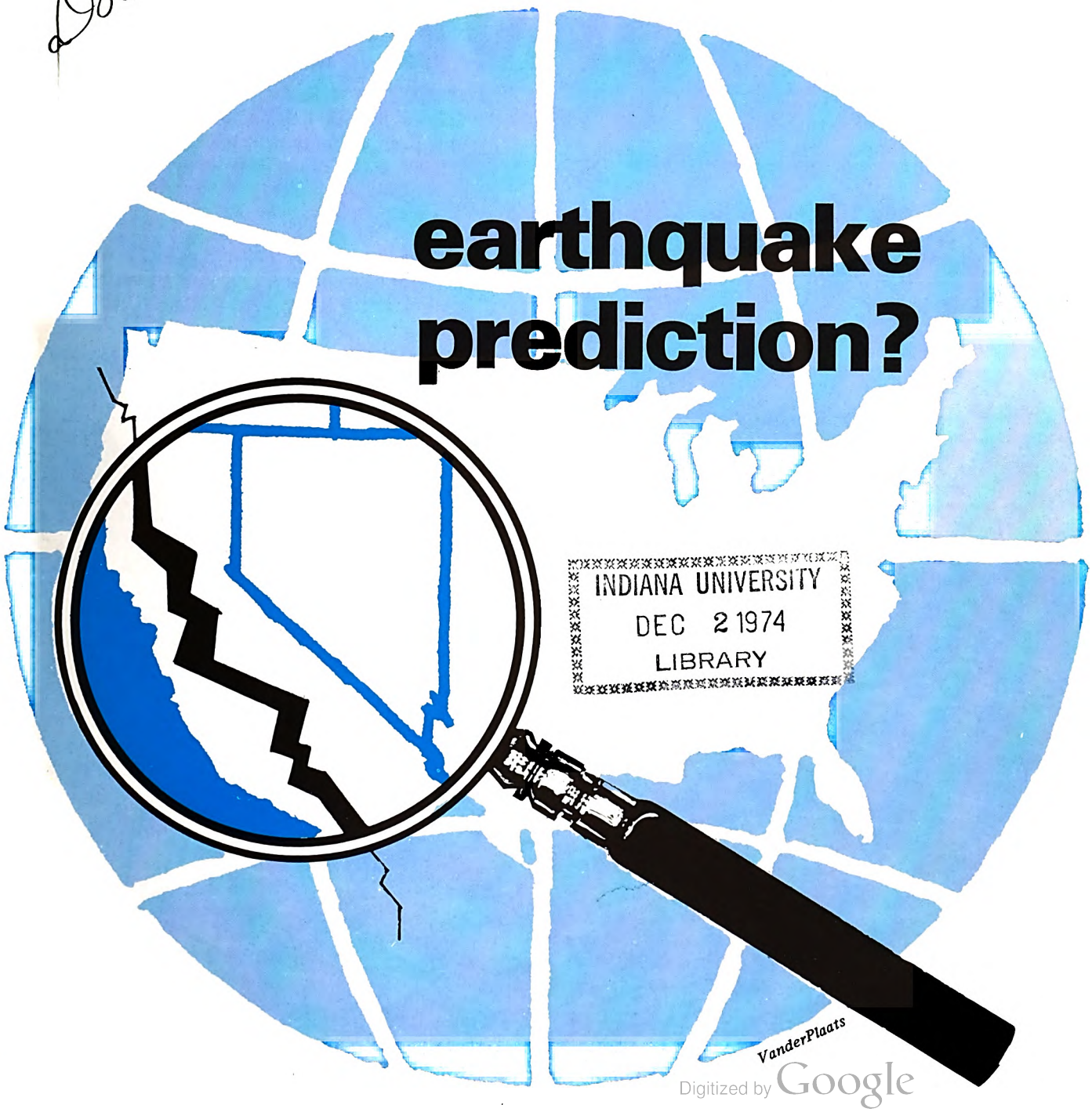
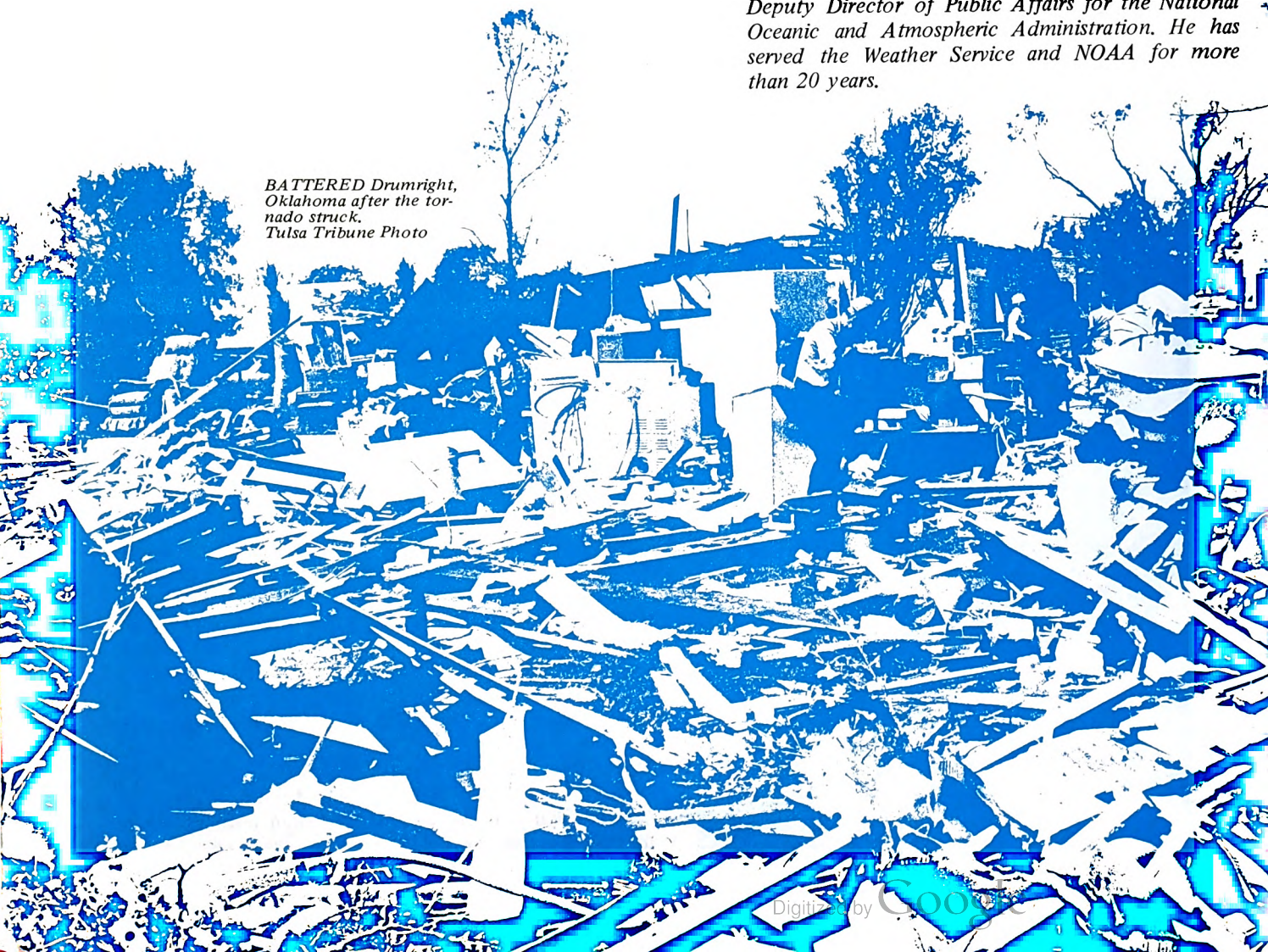
earthquake prediction?



By HERBERT S. LIEB / National Weather Service / National Oceanic and Atmospheric Administration

PREPAREDNESS ACTIONS SAVE LIVES

Mr. Lieb recently was appointed to the newly created post of Chief of the Community Preparedness Staff at National Weather Service Headquarters. His job is to develop community preparedness plans against natural disasters in coordination with other agencies, including the Defense Civil Preparedness Agency. Prior to his new assignment, Mr. Lieb was Deputy Director of Public Affairs for the National Oceanic and Atmospheric Administration. He has served the Weather Service and NOAA for more than 20 years.



BATTERED Drumright, Oklahoma after the tornado struck. Tulsa Tribune Photo

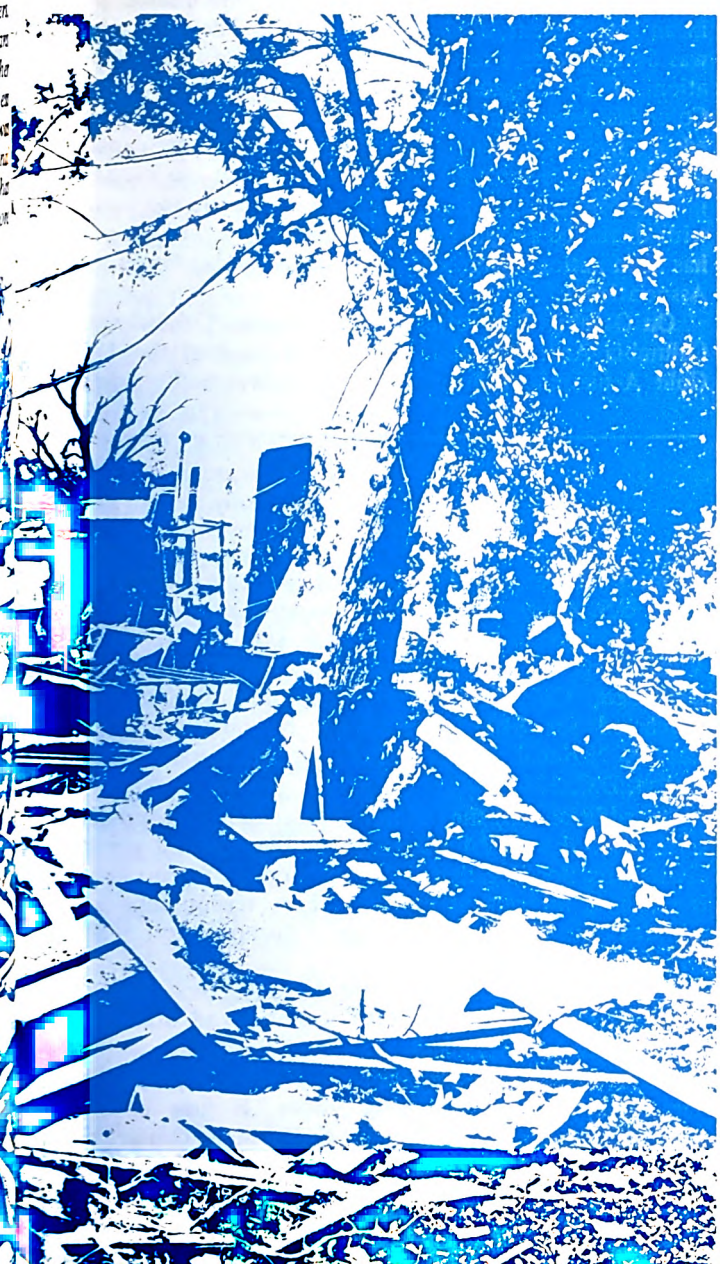
A reliable siren warning system and responsible implementation of preparedness planning often spells the difference between grateful life and grim death in time of emergency.

Cases in point: June 8, 1974, a tragic day when Drumright, Oklahoma, a town of 4,000 persons, and Tulsa, Oklahoma, a city of 350,000, were struck by the worst tornadoes in their history.

The tornadoes were part of a major outbreak that began in early afternoon in central Oklahoma.

14 Deaths, Extensive Damage

The Drumright tornado hit at about 5:00 p.m. CDT. Thirteen deaths were directly attributed to the storm.



About 130 were injured and damage was estimated at $3.5 million. More than 400 homes were damaged with about 94 totally destroyed. The Drumright Nursing Home, with 102 patients, was one of the buildings demolished. Seven elderly people were killed there.

The Tulsa tornadoes were in the city between 7:14 and 7:38 p.m. A man, 70, was the only fatality. About 70 persons were injured. Damages were estimated at $30 million. More than 90 homes in five areas of Tulsa were destroyed, and an additional 1,200 homes received major or minor damage. Record-breaking floods accompanying the storm added extensively to the damage.

As devastating as the tornadoes and floods were, officials and residents of the two cities were thankful and proud that the death toll was as low as it was.

A 'Textbook Performance'

They had a right to be proud. Their actions on June 8 were a textbook performance of preparedness and implementation of strategic warning systems by civil defense organizations, by the mass news media, by tornado spotters, police and fire departments, the National Weather Service, and many other individuals.

Officials and residents of both cities agreed that the death toll would have been in the hundreds but for the actions taken.

Tulsa Civil Defense Director John Wilson was especially impressed with the effective response of the population to the city's siren warning system.

"It was the first time in my 13 years in civil defense that I've observed such responsible public reaction to a warning system," he declared.

Tulsa presently maintains 23 operational warning sirens and has 16 more on order. According to Wilson, the additional sirens should give the city "a 95 to 100 percent warning coverage." He said the city plans to request an increase of one or two sirens each year.

Weather Service Awards Presented

Dr. George P. Cressman, Director of NOAA's National Weather Service, made the point that the lifesaving actions taken before, during, and after the tornadoes had their beginnings hours, months and, in some cases, years before the disasters through effective planning and organization. He presented the National Weather Service's Public Service Award—the agency's highest award—to the cities of Tulsa and Drumright, as well as to more than 25 organizations and persons for actions or plans that kept the death toll down.

In Tulsa, Mayor Robert J. LaFortune received the award on behalf of the city. Dr. Cressman cited the extensive and effective civil defense siren warning system installed by the city. On June 8, the decision to sound the sirens was made at 7:03 p.m. During the next hour,

(concluded on page 28)

foresight
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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

* * * * *

In the March-April edition of FORESIGHT the cover story, "Disaster's Mental Casualties," was a description of a cooperative effort in emergency response between the Richland County-City of Columbia Office of Civil Defense and the Columbia Area Mental Health Center.

This article focused on the use of the joint disaster plan in an actual event, a school bus accident. The plan, which was developed as a result of the initiative and close cooperation of Dr. Peggie Shealy, Associate Director of the Columbia Area Mental Health Center, was realistically tested. We have been most satisfied with our response capabilities in using a mental health center to meet our needs of information control, the prevention of rumor, and coping with disturbed people in a major emergency. The program has been nationally recognized by the American Psychiatric Association.

On October 3, in ceremonies at Denver, Colorado, the Columbia Area Mental Health Center received the 1974 Gold Achievement Award from the American Psychiatric

Survival in the Winter Storm

A new 27-minute motion picture, *Survival in the Winter Storm*, has been released by the Defense Civil Preparedness Agency for public exhibition, including non-sponsored television.

Forty of the 50 States experience varying degrees of winter storms. These severe weather conditions cause personal and property damage, some of which can be avoided by knowing what to do when faced with such an emergency. The 16mm color film attempts to aid those persons living in normally warm areas who would find it difficult to adjust to the living and driving hazards which accompany freak winter ice or snow storms. The film also may serve as a refresher course for those living in States where storms are a normal part of winter weather.

Copies of *Survival in the Winter Storm* have been sent to Regional and State civil preparedness offices. In addition, the film may be obtained (ordering code: DDCP 20-286) on loan after mid-November from any of the four major Army Audio-Visual Support Centers: (1) First U.S. Army, Audio-Visual Support Center, Fort George G. Meade, Maryland 20755; (2) U.S. Army, Audio-Visual Support Center, Fort McPherson, Georgia 30330; (3) Fifth U.S. Army, Audio-Visual Support Center, Fort Sam Houston, Texas 78234; (4) Sixth U.S. Army, Audio-Visual Support Center, Presidio of San Francisco, San Francisco, California 94129. The film also may be purchased for $109.50 from the National Audiovisual Center, National Archives and Records Service, Washington, D.C. 20409.

In addition to the winter storm film, a shortened version of the 'DCPA documentary film, *Storm*, on the disasterous flooding that followed Tropical Storm Agnes, is available for general use. The short version runs 14½ minutes compared with the original documentary of 28½ minutes.

The short version of *Storm* (ordering code: DDCP 20-287) also has been sent to Regional and State civil preparedness offices, and after mid-November will be available on loan from the same four major Army Audio-Visual Support Centers listed above. It may also be purchased from the National Audiovisual Center for $58.25 a print. ■

Association. This award is one of the most coveted awards in hospital and community psychiatry. Annually, only one such award is given by the Association in each of three mental health categories: hospitals, institutes, and mental health centers. The award to a mental health center is given to a facility that has maximized its resources to establish innovative and creative programs.

The fact that the program initiated here by Dr. Shealy was recognized by FORESIGHT of the Defense Civil Preparedness Agency was obviously a major factor in the achievement of this recognition. As a colleague in preparedness of Dr. Shealy, I am delighted to see that she has been recognized in her own field for something which is so valuable to the attainment of effective civil preparedness.

James W. DeLoach, Director
Richland County-Columbia Civil Defense
Columbia, South Carolina

* *

I was very much impressed with two articles in the July-August issue of FORESIGHT—"Estimating the Damage" by Billy R. Manning, and "MOBDES at Fort Worth."

We have been working for some time on damage assessment and I believe we have an efficient combination at present. Our Damage Assessment Team consists of the following: (1) Director of City Planning, (2) County Tax Assessor, (3) City Building Inspector, (4) City Engineer, (5) Director of County Planning, (6) three MOBDES officers who either are or have been in the insurance business, and (7) County Extension Leader.

Briefly our plan is as follows: Upon notification of a disaster, all members of the team will report to the Emergency Operating Center. Based on preliminary reports by radio to the EOC from police, fire, rescue, and County Supervisor, the chief of the team (City Director of Planning) will dispatch damage assessors equipped with mobile and walkie-talkie radios to the field. The field personnel will report percentage damage by buildings to the EOC by radio (or assigned frequency used only for this purpose). The team chief relays this information to the County Tax Assessor who will determine dollar values, based on official appraised values, within a few minutes. The County Extensions Leader, with his assistants, is responsible for reporting farm and livestock damage.

We feel the use of county and city personnel who have no direct or supervisory responsibilities for any phase of disaster recovery, plus the use of MOBDES officers, gives a most valuable combination for a Damage Assessment Team.

M. Alex Foster
Director-Coordinator
Department of Civil Defense
Spartanburg, South Carolina

Being prepared can make all the difference in coping with winter storms, especially blizzards. Here is some good advice to help you beat old "jack frost" to the punch.

KEEP POSTED ON WEATHER CONDITIONS

Even a few hours warning may enable you to avoid being caught outside in a severe storm or at least be better prepared to cope with it.

BE PREPARED FOR ISOLATION AT HOME

Keep an adequate supply of heating fuel on hand and use it sparingly as regular supplies may be curtailed by storm conditions. If necessary, conserve fuel by keeping the house cooler than usual, or by "closing off" some rooms temporarily. Also, have available some kind of emergency heating equipment and fuel so you could keep at least one room of your house warm enough to be livable. This could be a camp stove with fuel, or a supply of wood or coal if you have a fireplace. If your furnace is controlled by a thermostat and your electricity is cut off by a storm, the furnace probably would not operate and you would need emergency heat.

■ Stock an emergency supply of *food and water*. Your supplies should include food that requires no cooking or refrigeration and emergency cooking facilities in case of power failure.

■ Check *battery-powered equipment* before the storm arrives. Make sure you have a battery-powered radio and extra batteries as well as a flashlight.

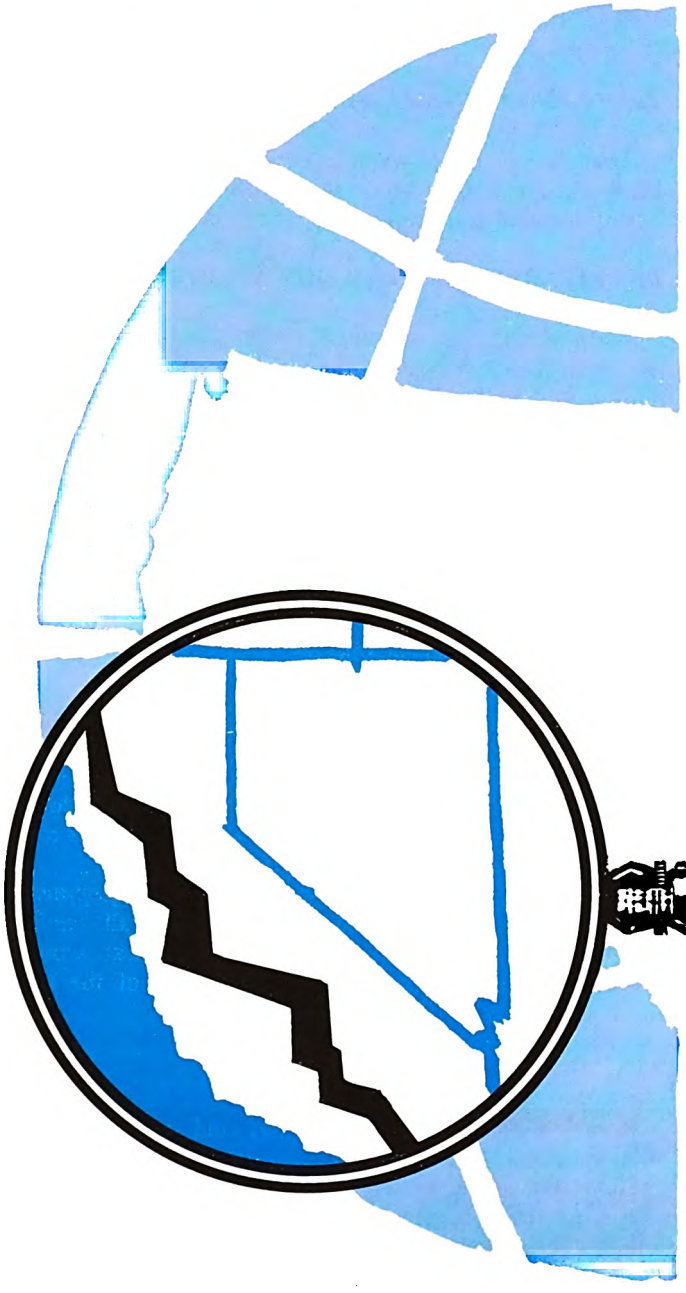
■ Keep on hand the simple *tools and equipment needed to fight a fire* and be certain that all family members know how to take precautions that would prevent fire at such a time when the help of the fire department may not be available.

STAY INDOORS DURING STORMS

■ Stay indoors during storms and cold snaps unless in peak physical conditions. If you must go out, avoid overexertion.

■ Be careful shoveling snow. It is extremely hard work and can bring on a heart attack, a major cause of death during and after winter storms. *(concluded on page 19)*

EARTH WATCH



toward earthquake prediction

By RUSSELL ROBINSON
U.S. Geological Survey / Department of the Interior

On August 3, 1973, a small earthquake (magnitude 2.5) occurred near Blue Mountain Lake in the Adirondack region of northern New York State. This seemingly unimportant event was of great significance because it was *predicted.*

Seismologists at the Lamont-Doherty Geological Observatory of Columbia University accurately foretold the time, place, and magnitude of the event. Their prediction was based on certain pre-earthquake processes that are best explained by a hypothesis known as "dilatancy," a concept that has injected new life and direction into the science of earthquake prediction. Although much more research must be accomplished before we can expect to predict potentially damaging earthquakes with any degree of consistency, results such as this indicate that we are on a promising road.

Former Research Cited

In the past, a large portion of the research on earthquake prediction has been concerned with determining the pattern of seismicity in a given region and searching for either regularities or deviations from the pattern that might suggest a forthcoming earthquake. For example, the 1972 earthquake at Sitka, Alaska (magnitude 7.3) occurred in a seismic "gap," a relatively quiet region within a belt of known seismic activity that had previously been identified as a likely place for an earthquake to occur. However, no prediction had been made of *when* the earthquake would occur or of its magnitude.

Identifying regions where earthquakes are highly likely to occur is useful, of course, but today a larger portion of the research effort on earthquake prediction is directed towards more specific results. The underlying principle behind this research is that, in the region of an impending earthquake, the slow, steady buildup of elastic strains that precede its occurrence is accompanied by certain other phenomena. If these other phenomena do exist and can be detected, earthquake prediction might be possible. The problem has been to determine what the physical processes that accompany strain buildup are, how to detect their existence, and to explain why they precede an earthquake.

Soviet Tests Provide Impetus

The search for earthquake premonitory phenomena was given new impetus with a report from the Soviet Union concerning investigations there of the variation of the velocity at which certain seismic waves travel through the earth. The Soviet results indicated that significant changes in seismic wave velocity occur within a region of an impending earthquake and that it might be possible to predict an earthquake by detecting such changes. It was just such a variation in velocity that led to the successful prediction of the earthquake in New York.

Seismologists at Stanford University explained the results reported from the Soviet Union by means of a process known as "dilatancy"–the tendency of rocks strained almost to their breaking point in the laboratory to swell or dilate as small cracks form and begin to open. This process, combined with the effects of the resulting flow of ground water into the newly formed cracks, could explain the Russian observations.

Although the theory of dilatancy is complex in detail and not yet generally accepted as the best or only explanation for such observations, it has been used to predict or explain other precursory phenomena such as variations in electrical and magnetic properties, changes in the flow of ground water, and anomalous tilts and uplifts of the earth's surface. All of these precursory effects are being investigated by the U.S. Geological Survey.

Still More Promising Results

Along active sections of the San Andreas fault in central California, a dense network of seismograph stations operated by the Geological Survey is yielding promising results. Changes in seismic wave velocity have been observed in the central California area. For example, it is now known that significant changes in velocity occurred before the magnitude 5.0 Bear Valley earthquake of 1972. Plans are under way to try to detect such changes as they occur in the hope of predicting earthquakes. The network of seismograph stations in central California is also being used to make a detailed study of the pattern of seismic activity with respect to both location and time of occurrence so as to identify "gaps" or anomalous changes in the pattern of activity.

Another promising line of research is the measurement of very small tilts of the ground surface. Significant changes in the direction of tilt apparently occur before some earthquakes. Also being investigated are changes in the magnetic field near active faults preceding earthquakes.

Many Approaches Taken

Laboratory and theoretical studies are also being carried on by the Geological Survey. These studies include detailed investigations of the dilatancy process and the mechanics of faulting in various rock types under conditions of high temperature and pressure. Computer simulation of conditions in the earth is another approach being used to derive models of earthquake processes in the hope of learning more about the properties of the earth that control when and how slip along faults will occur.

The present research effort of the Geological Survey is directed toward the prediction of the relatively numerous small earthquakes (magnitude 3 to 4) that occur along the San Andreas fault in central California. As confidence is obtained in the techniques developed and our understanding of the earthquake process improves, more effort can be directed towards the long-term goal of predicting large, damaging earthquakes. An important question that remains, of course, is to what extent the processes preceding small earthquakes will also characterize the large earthquakes. Only time and a lot of work will tell.

quake quandary

how to handle warning?

Dr. V.E. McKelvey, Director of the U.S. Geological Survey of the Department of the Interior, believes that earthquake prediction in some areas of the United States

will be possible "in the very near future." But he emphasizes that the transition to a prediction capability will not be a smooth one.

"We will have notable successes and well-publicized failures," he said. "We expect that earthquake prediction will be entirely different in nature from weather prediction. One need only note that premonitory phenomena are thought to commence about 30 years before a magnitude 8 earthquake. Whenever indications of an impending earthquake are detected, additional studies will be undertaken to refine the prediction, so any prediction would be steadily updated and re-evaluated as new data are acquired."

Dr. McKelvey said it is not easy to determine how best to use earthquake predictions. "It is conceivable that the disaster preparedness achieved over time through a combination of identification of hazardous areas, zoning ordinances, seismic safety design, and improved building codes might be so advanced that the steps required to implement a prediction might be selective and few—such as emptying a reservoir and the installation of emergency capabilities—and of such a nature that they would not disrupt community life," he said, adding that, in coordination with the U.S. Geological Survey and the Federal Disaster Assistance Administration, the National Science Foundation is funding "significant studies on the social and economic impact of earthquake predictions."

The problems of how to handle possible earthquake predictions also have been assessed by Dr. Robert M. Hamilton, Chief of the Office of Earthquake Studies of the U.S. Geological Survey.

"Those of us engaged in earthquake studies are quite concerned about the potential impact of predictions on people and their activities in a given area, and as might be expected, views are divergent," Dr. Hamilton said. "Some people even believe that earthquake prediction should not be pursued as a national goal because they feel the predictions might cause more harm than actual earthquakes. Others feel that it is worthwhile to work on earthquake prediction, but that the public predictions should not be made until a system with high reliability is established. Still others feel that predictions should be pursued with all the successes and failures laid open for public view."

Dr. Hamilton emphasized that the possible impact of an earthquake prediction warrants careful consideration. "Certainly, the particular situation and the manner in which the prediction is made will be important factors," he said. "The assumption behind the negative view of prediction is that people may panic in the face of an imminent serious threat to their lives. I think, however, that history shows that people generally behave sensibly and courageously during extreme emergencies such as hurricanes, shipwrecks, fires, or potential dam failures, provided that they are informed of the proper action to minimize the danger, even if the danger remains great."

He noted that, as in other areas of science, "the ability to predict is a good test of understanding," adding: "The ability to predict earthquakes will be a direct result of our improved understanding of the physics of the earthquake source and of related phenomena; consequently, research on earthquake prediction must be pursued on a broad basis. I am confident that by exercising caution in the use of these predictions, scientists and government officials can greatly reduce the impact of destructive earthquakes."

8 years to go?

Two astronomers predict in a new book that a rare alignment of the planets in 1982 will trigger a great earthquake along California's San Andreas fault system.

"In particular, the Los Angeles region will, we believe, be subjected to the most massive earthquake experienced by a major center of population during this century," say Drs. John R. Gribbin and Stephen H. Plagemann.

They say the San Andreas fault system, which runs from north of San Francisco down to the Gulf of California, is under great strain just waiting for something to kick off major earth movements.

That nudge, they argue in their book, *The Jupiter Effect*, is likely to occur in 1982 when all the planets will be lined up on the same side of the sun for the first time in 179 years. At the same time, sunspot activity is expected to reach its maximum level in an 11-year period.

The authors say the combination of tidal forces of the planets on the sun and the normal periodic increase in solar activity will generate great outbursts of solar radiation which will disrupt the earth's weather and air circulation to such an extent that the forces of atmospheric friction will disturb the earth's rotation.

"There will be many earthquakes, large and small, around susceptible regions of the globe," the authors predict. "And one region where one of the greatest fault systems lies today under a great strain, long overdue for a giant leap forward and just awaiting the necessary kick, is California."

Dr. Robert M. Hamilton, Chief of the Office of Earthquake Studies of the U.S. Geological Survey, observed that anything that could affect the rotation of the earth could have an effect on earthquakes. But he emphasized that significant changes in the earth's spin rate would be necessary to trigger quakes "and ultimately the validity of their argument hinges on that." ■

Feds at City Hall

"The problem with those Federal people is that they just don't understand the problems of local government."

"The problem with local government people is that they just can't visualize the bigger—the Federal—picture."

Which view is correct?

The answer, of course, is there are elements of truth in both viewpoints. And as in most problems involving people, a major step toward a solution is to get the people talking with each other, working together.

People-To-People Program

That's a primary aim of the Intergovernmental Personnel Act of 1970—exchanging personnel among Federal, State, and local governmental units and thereby improving the base of understanding among governmental people through personal, on-the-job experience.

Among those who have taken advantage of the act is Mrs. Frances K. Dias, Director of the Defense Civil Preparedness Agency Region Seven office at Santa Rosa, California, a regional office responsible for providing civil preparedness advice and assistance to State and local governments in California, Nevada, Arizona, and Hawaii, as well as American Samoa and Guam.

Mrs. Dias, who served two terms as Mayor and 10 years as a member of the City Council of Palo Alto, California prior to her appointment as Director of DCPA Region Seven, is acutely aware of the need for DCPA staff members to become more sensitive to the day-to-day problems of local government. She arranged to have two young Regional field specialists on her staff, Norman D. Smith and Nicholas B. Nikas, assigned for 30 days to work with the governments of two of northern California's more progressive cities. Mr. Smith was assigned to work with Santa Rosa, which has a population of 62,000, and Mr. Nikas with San Rafael, which has a population of 45,000.

First-Day Problem

On his first day of duty at Santa Rosa, Mr. Smith was handed a sensitive problem by City Manager Kenneth Blackman: an analysis of what the financial impact would be on Santa Rosa from a proposed parking surtax by the relatively new U.S. Environmental Protection Agency.

"Here is a good example of how a Federal agency can affect local government," City Manager Blackman told Mr. Smith in making the assignment. "We need to know the financial impact of this proposed surtax. Your job is to develop the data and present it to the City Council."

With the next session of the City Council as his deadline, Mr. Smith soon felt the sense of urgency which prevailed throughout his stay with the Santa Rosa government. Just as his findings were completed, EPA announced it was withdrawing the parking surcharge provision from its transportation control plan. "But the study was still of interest to the City Council," Mr. Smith said, "and I reported the findings."

For the rest of the month Mr. Smith worked with the Santa Rosa planning department and the assistant city attorney in revising an ordinance on environmental impact proceedings.

Was he considered a close member of the Santa Rosa governmental team? Not exactly. "Even a month's association can't always overcome the strong reluctance on the part of some to speak openly with a Fed," Mr. Smith said.

Involved in Urban Renewal

At San Rafael, Mr. Nikas was assigned as an assistant to City Manager William Bielser where he was able to observe and participate in the day-to-day activities of all the city's departments, including attending staff meetings and taking an active part in staff discussions.

One of the highlights of his tour of duty was his involvement in the development of plans to implement the initial stages of an urban renewal project in San Rafael that will take years to complete, cost millions of dollars, and dramatically change the appearance and character of the core of the city.

On his first day at San Rafael, Mr. Nikas was asked to study the desirability and the feasibility of instituting a system of centralized dispatch of the city's police, fire, and public works vehicles.

Experience Holds Future Dividends

"Carrying out this assignment brought me into close contact with the city's field elements and gave me a chance to observe first-hand how a local government reacts to routine emergencies in day-to-day operations," Mr. Nikas said. "This knowledge will be of great benefit to me when, as a Regional field specialist, I work with officials of other cities in developing procedures required to cope effectively with extraordinary emergencies."

Mr. Nikas feels that one month is too short a period to learn how a municipality functions. "But I certainly acquired a keen appreciation for the unique pressures under which a local government must work," he said. ■

Few people have worked in civil defense in all governmental units–Federal, State, and local. George B. Owen, Arizona's first State Director of Civil Defense, is one of the few. Now back in his native State of New Mexico, he's still in there pitchin' in his own special way.

George is still doing it

By DANA J. CESSNA / DCPA Region Five

At a time when most dedicated practitioners of civil preparedness would have stepped aside to let a younger person carry the load, dynamic and soft-spoken George B. Owen is still going strong at 68.

Owen, currently Civil Preparedness Coordinator for Chaves County in southeastern New Mexico, makes no bones about the success of his professional longevity.

"Involving yourself in something you enjoy doing will keep you productive, no matter how old you are," he explained enthusiastically.

Productive Years in Preparedness

For George Owen, the business of civil defense has been a productive success since 1951 when he was named the State of Arizona's first civil defense director. For the next four years, he parlayed enthusiasm for his job into a record of commendable accomplishments highlighted by his being named chairman of the Far Western State Civil Defense Directors' Association. It was during this time that the hydrogen bomb was developed and Owen became closely involved with establishing a policy of evacuation in his area.

It was also during this period (August 1951) that Owen attended and successfully completed the third civil defense staff college course presented by the then Federal Civil Defense Administration (eventually changed to the Office of Civil Defense and, most recently, to the Defense Civil Preparedness Agency).

"Principles of Civil Defense Administration" was the title of the two-week course. Olney, Maryland, now the headquarters of DCPA's Region Two, was the location.

State Director at 'Rescue Street'

It was here that Owen vividly recalls the unique "Rescue Street," a boulevard of demolished buildings and underground tunnels patterned after a bombed-out section of World War II London. "A perfect setup for simulating a city under attack and for instructing State and local civil defense officials about the intricacies of shelter management and rescue techniques," was the way Owen described it.

In 1954, all employees of the national Federal Civil Defense Administration (FCDA) received orders to move their operation from the Gelmark Towers in Washington, D.C. to Battle Creek, Michigan where quarters were set up in the former Percy Jones Hospital which had been deactivated by the Army. To better coordinate the entire scope of the Nation's civil defense program, it was decided to also establish the Battle Creek facility as headquarters for Staff College, which up until that time had decentralized its activities as far away as California and New York.

A year later, in 1955, a new political administration took over in Arizona. Owen, always raising his sights toward increased challenges, resigned as State Director and accepted a regional field officer's position with FCDA's Region Two located in Westchester, Pennsylvania (now at Olney, Maryland). Not a bad move for a man who, up until 1951, had spent 22 years in the retail credit business.

Key Roles in National Agency

During the latter part of 1955, Owen transferred to Battle Creek to work in the national office's evacuation division. The following year he was named Director of the Survival Projects Office, an operation responsible for managing $13 million of the Federal agency's total budget.

"It was an extremely interesting challenge," Owen said of his job. "We were responsible for directing the development of evacuation plans for all critical target areas and the accompanying reception and care support areas. Included was a shelter study just in case there was not sufficient time to evacuate the area. I became particularly interested in shelter planning for blast and radiological fallout protection. We had over 1,000 professional planners employed at the peak of activity."

In 1962, the national office (then named the Office of Civil Defense in the Department of Defense) moved its head-

quarters back to Washington, D.C. Owen moved with it and took over as coordinator of the nationwide rural civil defense program, working closely with Department of Agriculture officials. Later he held a key position in the emergency public information phase of Community Shelter Planning. In 1972, Owen retired from Federal service and with his wife, Mary, moved back to his native State of New Mexico.

Becomes Local Coordinator

In George Owen's case, it's an understatement to say you can't keep a good man down. And you can't keep him retired, either. In May, 1973, Roswell and Chaves County, New Mexico officials ended their search for a responsible civil preparedness coordinator when they selected Owen to fill the city-county post.

One of Owen's first major challenges in the local preparedness job was to establish a new Emergency Operating Center (EOC) in the Roswell police station, an accomplishment recognized in formal dedication ceremonies this past spring.

Under Owen's leadership and experience, the EOC has been transformed into as modern and well-equipped a preparedness facility as there is to be found anywhere in the Nation. Up-to-date communications gear, wall maps, and all the paraphernalia necessary to operate an EOC are evident throughout the facility. The EOC and Owen's personal files provide one of the most complete civil defense libraries in existence today.

Asked to whom he would give the most credit for helping build civil defense into the active business it is today, Owen listed two former colleagues: Val Peterson, former FCDA Administrator during President Eisenhower's administration, and Virgil Couch, former director of the national office's industrial preparedness program.

Credits Role of Val Peterson

Of Peterson, U.S. Ambassador to Finland from 1969 to 1973, Owen said, "He really put civil defense into business. What we're now building on was started by Val Peterson. He made 'civil defense' household words."

Couch, who retired from Federal service in 1972, was credited by Owen with helping promote civil defense in business and industry. "Virgil Couch did more to gain confidence in civil defense among the Nation's officials than any other individual," Owen said.

In 1961, Couch appeared on the cover of *Time* magazine above the simple tagline, "Mr. Civil Defense."

George B. Owen: Professor of Preparedness

What of civil defense today?

While the threat of nuclear confrontation appears to be lessening, Owen agreed that a gradual and more distinct awareness of natural disaster—of preparing for all types of potential disasters—was shaping up.

"This is good for civil defense," he said. "It's giving us a better opportunity to build the public's confidence in civil defense." ■

SMOKE BILLOWS from a railroad car explosion that rocked the Wenatchee, Washington area less than two months after the community had conducted a civil preparedness exercise to perfect emergency response in a similar type of disaster.

Wenatchee World Photo

Exercise Pays Off

By MILLARD IRELAND / DCPA Region Eight

On June 20, 1974, Jack Harrington of Wenatchee, Washington, known throughout the west, at least, as the "Apple Capital of the World," presided over an emergency exercise in his home town. Mr. Harrington is Emergency Services Director of Chelan County in central Washington, of which Wenatchee is the principal city.

The simulated disaster drill was designed to test the emergency preparedness of Wenatchee's fire and police, doctors, and hospitals. Thirty youngsters acted as casualties in a simulated theater explosion, and all services immediately went to work with zest.

Getting At the 'Bugs'

Many bugs were discovered in the emergency response. Evaluations were made. The whole process was critiqued. Procedures were amended to make the response and handling of multiple casualties work more smoothly. It was well they did.

In promoting the exercise, Director Harrington said: "We've never had a major exercise in this valley with a lot of injuries. We can practice on this one, and learn what to do to improve our system. We're striving for perfection. We want to get the quickest response by the greatest turnout of people and have the operation run smoothly." He also said something to the effect that the exercise would prepare emergency crews for the day they hoped would never come.

Well, it did – and not too much later.

On August 6th, less than two months later, at 12:35 p.m., when virtually everyone in town was at lunch, a tremendous explosion rocked the valley. Startled residents poured from buildings to observe a tremendous column of smoke pouring hundreds of feet into the air, the scene less than two miles from the center of downtown Wenatchee. Windows near the center of town were caved in. The center of the explosion appeared to be on the bank of the Columbia River in the Burlington Northern Railway Company switch yard.

Emergency Plan in Action

Even before Director Harrington could arrive on the scene 20 minutes later, the emergency action plan, evolved as a result of the June 20 exercise, was put in motion. Ambulances responded as did fire and police units. Hospital staffs reported for emergency duty. Doctors jumped up from their lunches to carry out their part of the plan.

It was soon learned that a railroad tanker, containing a sensitizer for a new type of explosive, had gone up. The explosion killed two persons and injured more than 60, who required immediate treatment. All were handled smoothly, and within a little over an hour the injured had been removed. By 8 a.m. the next day, when Director Harrington finally decided he could leave the scene, the tremendous fire following the explosion had been quenched and grass fires, which had been set for miles around, were brought under control.

The *Wenatchee Daily World* newspaper commented later that many letters had been received thanking police, fire, emergency services, and the medical community for their prompt and efficient responses. A number of people remembered the previous exercise and were convinced that many lives were saved and the injured relieved of much suffering because Wenatchee had practiced the art of preparedness. ■

School Safety Sales

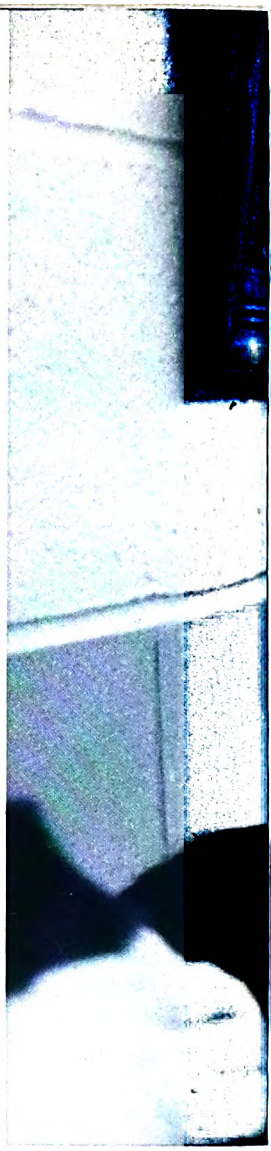
By **ESTHER KELLNER** / Wayne County, Indiana, Civil Defense

In addition to her duties with Wayne County Civil Defense, Mrs. Kellner is a nationally known writer, former editor of a national magazine, author of 12 books, and three times winner of the Indiana University Award for distinguished fiction. She is listed in "Who's Who of American Women" and similar references here and abroad.

Long before Christmas bells start to ring, Paul D. Smith, Director of Civil Defense for Wayne County, Indiana, begins his race to reach the schools ahead of the tornado season.

Richmond, Indiana, in the mideast part of the State, where his office is located, and its surrounding communities are subject not only to tornadoes but to other destructive spring and summer storms. Therefore, Smith makes early contacts with the 45 schools in the county so that civil defense training for students can be either introduced or reinforced, with time to spare.

He has devised and is using a school plan which has been very successful in training children to protect themselves and in getting teachers and parents interested in safety measures.



PRACTICING TORNADO SAFETY / At Charles School, Richmond, Indiana, the third grade teacher, Mrs. Jean Bradway, guides her class through a tornado drill. The school has no basement and the children take refuge in central corridors in the event of a "tornado warning."

Richmond Palladium-Item Photo

School Survey Held

For starters, Director Smith's office sends a double-faced postal card to every school in the county. One side asks the cooperation of the principal in a tornado preparedness effort. The other side, to be filled out and returned as promptly as possible, has a brief questionnaire:

"Have you given any civil defense course or instruction?

"Have you had any tornado drills during the past year?

"Do you plan to have tornado drills this year? If so, when will these start?

"Do you have a civil defense plan?

"Do you have school bus evacuation drills?

Basing his plans upon the results of the School Survey, Director Smith makes a variety of services available to local schools. They include school safety evaluations, tornado programs for schools, and programs for school-related adults. All are promoted through local television and radio broadcasts and through stories in local newspapers.

Personal Visits Made

On request, Smith or a trained assistant visits a school that is making a disaster plan for the first time, inspects the building, and suggests the best shelter areas. If the school has never had a tornado drill, he explains the procedures to the school staff and supervises a simulated drill. If a school reports some doubt about its preparations, Smith observes a drill and either approves the procedure or suggests changes.

As part of a tornado safety educational effort, special programs are presented to schools. These might be presented to separate classes or to the entire student body if the school is a small one. For this project, Director Smith often uses seasoned speakers (volunteers) who are accustomed to working with children, sometimes a team, man and woman, for the larger schools. Among the participants are members of Richmond's fire and police departments.

The program opens with a brief talk about the nature and danger of tornadoes and the need for a safety program to protect school children. This is followed by a

showing of the National Weather Service 15-minute film, *Tornado!*, which always fills the young audience with awe and respect for this most deadly of countryside storms. After the film, the boys and girls are invited to participate in a question-and-answer period. It's always a success.

As a follow-up, teachers often ask their classes to write poems, stories, or short essays about tornadoes. Students who have actually experienced such storms, or who have heard first-hand accounts of them, are encouraged to share these with their classmates. Sheets of tornado safety information and instructions are given to the children to be taken home to their parents.

Director Smith makes similar tornado programs available to teachers' meetings, mother's groups, PTA delegates, and other adults working with school children, such as teacher aides and school bus drivers.

Major Problem: A Warning Gap

One of the major problems facing many midwest communities is the lack of adequate warning facilities, a lack which has consistently plagued Wayne County. At present, in accordance with the Wayne County civil defense program, "tornado watches" and "tornado warnings" are channeled to Director Smith through the State police radio and WKBV, a local radio station with a direct weather line.

Civil defense personnel are immediately alerted by telephone, and report to the Emergency Operating Center, as do a staff of radio operators and volunteer secretaries from the Business and Professional Women's Club. All spotters and schools in the county are alerted by a special civil defense network of radio and telephone bulletins.

But Director Smith feels that the success of such a setup must depend upon pure luck – that all citizens, especially those in schools, need an accelerated alerting system for real protection. The installation of a county-wide siren warning system is a major project on his civil defense agenda.

Of course it will be costly – an estimated $135,000 to alert 45 schools and 13 small towns plus Richmond, where more than half of the county's 80,000 people live. But not so costly as a tornado that takes children's lives. ■

The California Plan:

nuclear powe

By VERNE PAULE / DCPA Region Seven

With increased emphasis on the development of nuclear power plants in California, the State has recently updated its Nuclear Power Plant Emergency Response Plan.

It is a fact of life that, although highly improbable, an accidental release of radioactive material could occur from a nuclear reactor in a power plant. This could result in airborne radioactive contamination (most probably in gaseous form) being carried outside of the boundaries of the reactor site. If this situation occurs, then the State's Emergency Plan would be put into operation.

Largest Concentration in the West

There are presently two nuclear power plants in operation in California, three more are being built and six more are planned – the greatest number of nuclear power plants in any State west of the Mississippi River.

Earlier this year, the California Assembly Subcommittee on Energy Policy invited the California Office of Emergency Services (OES) and the State Department of Health, Radiological Health Section, to participate in hearings on the hazards and safeguards of nuclear power plants.

John J. Kearns, Radiological Defense Officer, and Everett Blizzard, Chief of Planning Operations, OES, attended and participated in the Assembly hearings.

As a result of these hearings, the OES was asked by the Committee, along with the State Department of Health, to review and revise the State Plan for emergency response at nuclear power generating plants.

Plan Completed and Tested

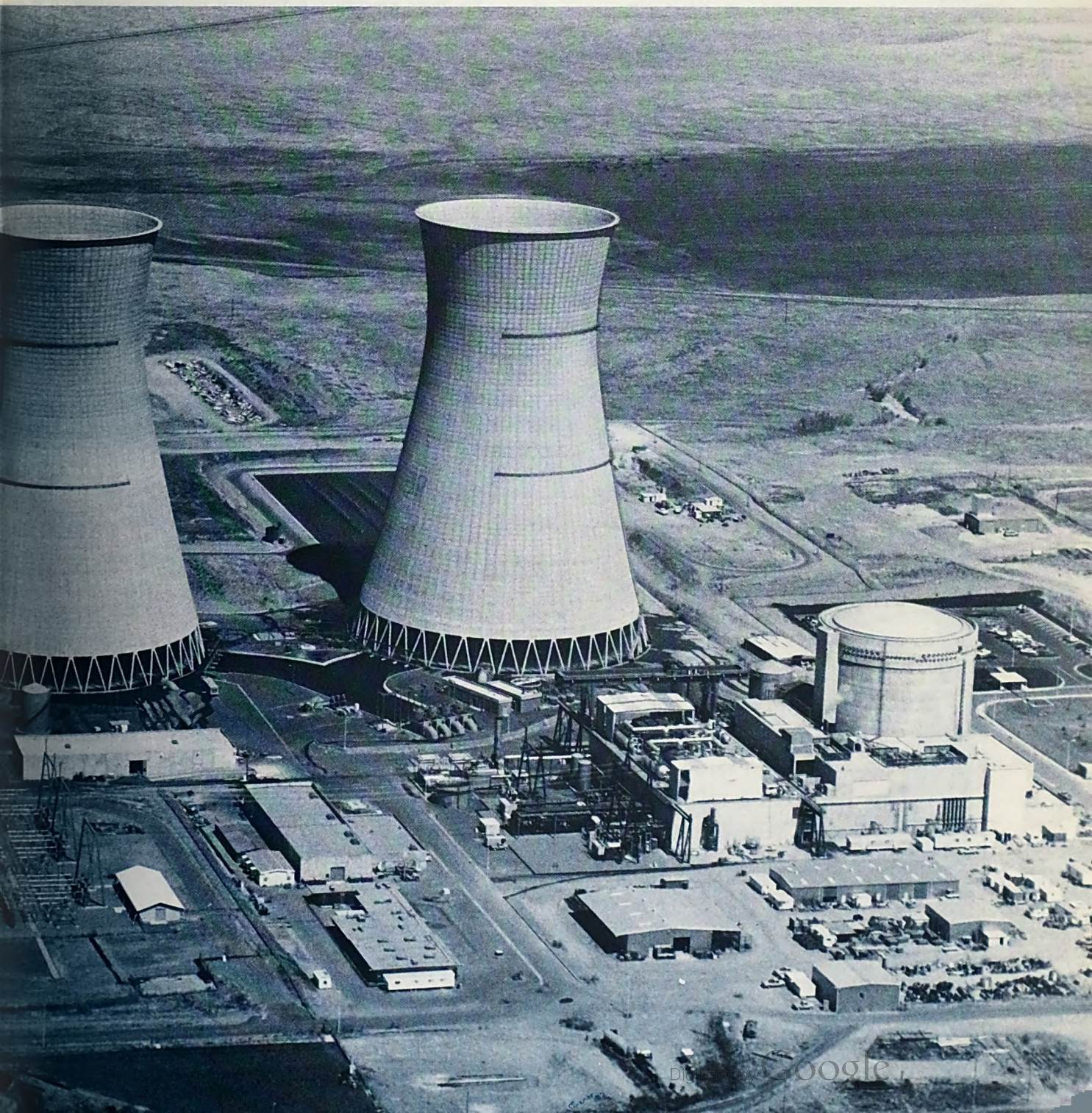
Now, several months following the hearings, the OES has completed its Response Plan, tested it, and has presented it to the Assembly Committee.

The Plan's purpose is to "establish Federal, State, and local responsibility and actions required to minimize radiation exposure and environmental contamination in the event of a radiological accident at a nuclear power plant."

In the revision process, the OES entered into an agreement (memorandum of understanding) with the Sacramento Municipal Utilities District (SMUD) outlining each agency's role and responsibilities in the event of a nuclear reactor emergency. *(continued on page 18)*

r plants

A NEW NUCLEAR POWER PLANT, located on the Sacramento Municipal Utilities District 2,480-acre Rancho Seco Reactor Site 30 miles south of Sacramento, will provide electricity for a 656-square-mile area of central California. The most prominent features of the plant are the two 425-foot-tall hyperbolic cooling towers which cool the water used by the plant's steam turbines through the process of evaporation, and recirculate it for repeated use.



Also, a full-scale, seminar-type exercise was held in mid-June. The exercise simulated a nuclear accident at the SMUD Rancho Seco Reactor Site about 30 miles outside of Sacramento.

Federal, State, and Sacramento County officials participated in the exercise along with civil preparedness observers from San Diego, Orange, San Luis Obispo, and Humboldt Counties; and representatives from the Atomic Energy Commission from Washington, D.C.; Oak Ridge, Tennessee; Livermore, California; and San Francisco. Also attending was an insurance official from Farmington, Connecticut, whose company insures the Rancho Seco nuclear reactor facility. In all, a total of 110 persons representing 48 different agencies participated.

The exercise included radiological monitoring teams that were dispatched from the OES to areas near the power plant involved in the simulated accident. An on-the-scene command post was established at the Ione State Forestry Station near Rancho Seco. Information from the command post served as a basis for problem solving by the representatives of the participating agencies. Problems considered were evacuation, traffic control, security, health and safety, medical, decontamination, and fiscal responsibility. A useful critique was conducted following the exercise.

Kearns called the exercise "a resounding success." He said its success was "directly attributed to the interest and participation of the utility company, the State Health Department, and the California Office of Emergency Services."

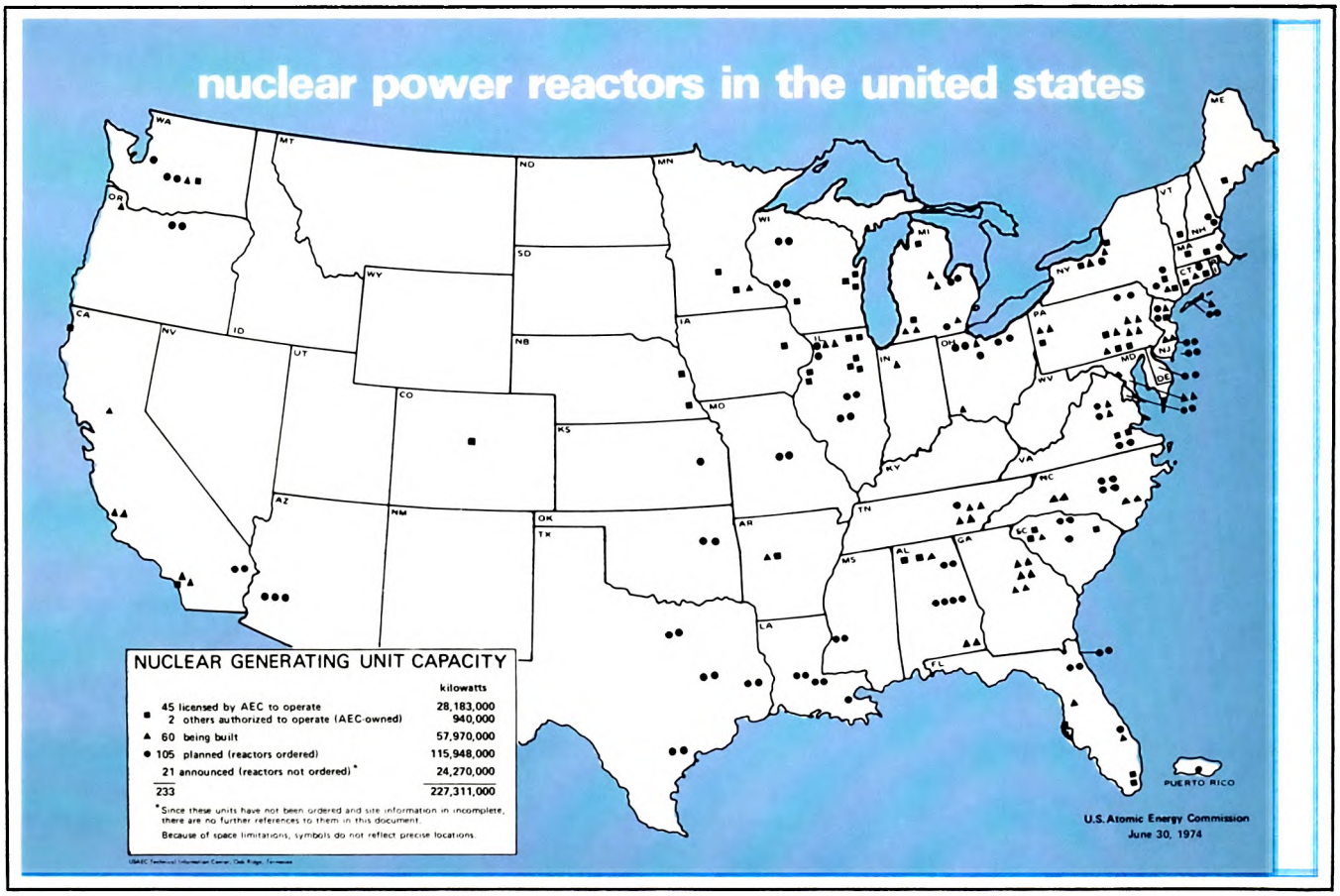
A representative of the Atomic Energy Commission said that the planning and testing California is doing on its nuclear power plant Emergency Response Plan "is evidence of progress and they are moving toward increasing their emergency radiological response posture. It is a positive step in the right direction."

* * * * *

New Publication, Special Training

To assist local governments in planning for effective response to possible peacetime nuclear incidents, the Defense Civil Preparedness Agency recently issued a publication, *Nuclear Facility Accidents* (coded "Change 1 to CPG1-6"), which is an addition to the DCPA publication *Disaster Operations: A Handbook for Local Governments* (CPG 1-6).

Developed in cooperation with the Atomic Energy Commission, *Nuclear Facility Accidents* suggests four categories of nuclear incidents, ranging from minor to severe, and describes basic emergency operational actions steps for each.



In addition, at the request of the Atomic Energy Commission, the DCPA Staff College will develop a special course for assisting State and local governments in preparing plans and procedures for coping with possible peacetime nuclear incidents. In developing the course, technical assistance will be provided by the Department of Health, Education, and Welfare, the Federal Disaster Assistance Administration, the Environmental Protection Agency, and the Atomic Energy Commission. Also, DCPA is working with these agencies to set up a special Federal field cadre of people who will work directly with States that now have operating nuclear power plants, assisting the States in perfecting their emergency response plans. ■

Student Surveyors

About 200 college students surveying up to 10,000 buildings. That's the prospect for the Defense Civil Preparedness Agency National Shelter Survey Summer-Hire Program for the summer of 1975. And eligible college students should begin thinking about it now.

Students selected for the program will work in small teams surveying buildings in selected communities to assess the protective capability of the structures against nuclear weapons effects also natural disaster effects. This includes collecting structural information and measurements on the construction and the surrounding terrain.

The information they gather will be processed at the DCPA Computer Facility at Olney, Maryland, and sent to the local communities for use by local officials.

This year, students from 100 universities did survey work in 50 communities throughout the Nation.

To participate in the program, college students must have completed at least one year of undergraduate work, or its equivalent, in an engineering or architectural program, be United States citizens, meet U.S. Civil Service Commission eligibility requirements for summer employment, and successfully complete a DCPA Fallout Shelter Analysis or a Shelter Survey Technician course. Information on these courses and related matters is available by writing to the Defense Civil Preparedness Agency, Research and Engineering, The Pentagon, Washington, D. C. 20301.

A number of benefits accrue to college students participating in the program. Most of the work is out in the field where they meet and talk with a wide variety of people: building owners, custodians, building managers, school officials, hospital administrators, bank presidents, plant supervisors. They become familiar with building construction and have an opportunity to learn a great deal about building materials, architectural details, public relations, and office management. And at current rates, the pay for their 12 weeks of work during June, July, and August is $138.80 a week. – **Gilbert C. Johnson.**

Pearch Patter *(continued from page 5)*

DRESS TO FIT THE SEASON

If you do go outdoors, wear loose-fitting, lightweight, warm clothing in several layers; layers can be removed to prevent perspiring and subsequent chill. Outer garments should be tightly woven, water repellent, and hooded. The hood should protect much of your face and cover your mouth to ensure warm breathing and protect your lungs from the extremely cold air. Remember that entrapped, insulating air, warmed by body heat, is the best protection against cold, so layers of clothing are more effective than a single layer of thick clothing. Mittens, snug at the wrists, are better protection than fingered gloves.

TRAVEL ONLY IF NECESSARY

■ Get your car winterized before the storm season begins and keep water out of your fuel by maintaining a full tank of gasoline.

■ If you must travel, select primary and alternate routes. Before starting out, tell someone where you are going, your approximate schedule, and your estimated time of arrival at your destination.

■ Have emergency "winter storm supplies" in the car such as sand, shovel, windshield scraper, tow chain or rope, extra gasoline, booster cables, flashlight, blankets, extra clothing, high-calorie nonperishable food, compass and road maps, knife and first-aid kit.

IF A BLIZZARD TRAPS YOU IN YOUR CAR

Avoid overexertion and exposure. Stay in your vehicle. Turn on the done light at night to attract road crews. Keep fresh air in your car. Freezing wet snow and wind-driven snow can completely seal the passenger compartment. Beware the gentle killers: carbon monoxide and oxgen starvation. Run the motor and heater sparingly, and only with the downwind window open for ventilation.

Perspective on Crisis Relocation Planning

By JOHN E. DAVIS
Director
Defense Civil Preparedness Agency

> "Since it is quite possible that a period of intense crisis would occur before an attack, it may be feasible to relocate non-essential personnel from cities and high risk areas during such a period. Accordingly, some preliminary contingency planning is being undertaken for this purpose."
>
> James R. Schlesinger
> Secretary of Defense

The contingency planning referred to by Defense Secretary Schlesinger in the "U.S. Strategic Forces and Programs" section of his annual Defense Department report to Congress for Fiscal Year 1975 will be carried out by the Defense Civil Preparedness Agency, in coordination with concurring State and local governments, under a plan of procedure entitled Crisis Relocation Planning (CRP). The purpose is to develop plans to relocate people from likely target areas to protective shelter in less dangerous areas in the United States during a period of intense international crisis. This type of planning also can result in improved readiness on the part of State and local governments to carry out peacetime emergency operations, such as the movement of people away from areas threatened by severe flooding or a hurricane.

Why is this concept being undertaken now, particularly in an environment of detente between the United States and the Soviet Union—a detente that includes the negotiation of a strategic arms limitation treaty (SALT) between these two great powers?

In simple terms the answer is this: Crisis Relocation Planning makes good sense. If a nuclear war should occur, millions of Americans could be saved if residents of major cities had been evacuated before the attack and provided shelter protection in areas beyond the probable direct effects of the weapons. Although few people believe that nuclear war is inevitable, or even particularly likely, as long as men and nations continue to have conflicting interests, it is only prudent to recognize that wars between them could occur, and as long as the arsenals include nuclear weapons, a nuclear war is a possibility.

The need for Crisis Relocation Planning has been recognized by the Soviet Union. Today CRP is an integral part of Soviet defense strategy. Other countries, including non-Communist nations, have developed detailed civil defense plans that include the option for city evacuation. For example, the telephone directories for the larger cities in Norway contain detailed instructions and maps showing people where to go and how to get there, if city evacuation should be ordered.

CRP does not stem from an increased fear of a nuclear attack. Rather, it is based on the recognition that a nuclear exchange *could* occur, and if it does, Crisis Relocation Plans could greatly reduce the consequences. CRP offers another option for the protection of the population; it is not a

substitute for in-place protection but rather provides an alternative course of action.

How CRP Differs from the City Evacuation Plans of the 1950's

With the development in the mid-1950s of thermonuclear weapons having an explosive power a thousand times greater than the atomic bombs of World War II, the United States recognized that, without having a National Shelter System, the only practical way of protecting the American citizenry against a nuclear attack was to evacuate the larger cities. At that time, the threat consisted of nuclear weapons delivered by inter-continental bombers. The flight time of the bombers after being detected by early warning radar and before reaching U.S. cities was expected to be in the order of a few hours. This amount of time was considered to be available for getting people out of cities, and indeed, exercises were conducted demonstrating that at least some of the major U.S. metropolitan areas could be emptied in a few hours time. Some metropolitan areas such as New York City, of course, presented special problems due to the size of the population and the limited number of exit routes.

In the language of the defense planners, a city evacuation plan to be triggered at the time an actual enemy attack is detected is called "tactical" evacuation.

The "tactical" evacuation plans became obsolete by the early '60s because of the advent of large inter-continental missiles. The time between the detection and arrival of a barrage of incoming missiles would be far too short to permit people to move out of likely target cities. In fact, an attempt to evacuate cities under such circumstances could increase exposure to the effects of nuclear weapons and increase the number of casualties. The experience of Hiroshima and Nagasaki in World War II provided dramatic evidence that the worst possible place to be at the time of a nuclear bomb burst is in the open with no protection from the heat and flying debris that would be created by the thermal and blast waves.

Crisis relocation, as the name implies, would offer a strategic option and could be employed during a period of an international crisis–a period involving a confrontation between nuclear adversaries in a circumstance in which there appeared to be a serious threat of a nuclear war. Some have considered the Cuban Crisis of 1962 as an example of such a confrontation. Arthur Schlesinger, in his book "A Thousand Days–John F. Kennedy in the White House," suggested that during that crisis the President thought the probability of nuclear war was about 50-50. Others have argued that the degree of international tension during the Cuban Crisis was far below the level that would constitute a serious threat of nuclear conflict. Hypothetical scenarios have been developed whereby escalations of the crisis levels lasting over many weeks could reach a scale far above that of the Cuban Crisis. To illustrate, such scenarios have included the detection by the U.S. of the evacuation of major Soviet cities. Certainly, after the receipt of information that Soviet cities have been evacuated, a decision by the U.S. authorities for crisis relocation in the U.S. could be considered as one kind of response.

Without Crisis Relocation Plans, it is possible that during some future crisis a U.S. President could be confronted with the knowledge that Soviet cities had been evacuated while the residents of his own cities were still concentrated in possible target areas.

The tactical evacuation plans that were developed in the 1950s do provide a useful legacy for today's Crisis Relocation Planning. Many components of those plans, such as traffic routing, hosting area identification, plans for the reception and care of evacuees, and the like, may provide excellent points of departure. Other parts of the older plans will require major updating and will benefit from the results of research that currently is underway.

If "tactical" is the proper term for the evacuation plans of the '50s, "strategic" is the term that best defines crisis relocation of the '70s. The term "strategic" applies in two senses: first, in terms of the longer times available for implementation and completion; and second, in terms of expanding the options for a President's strategies for negotiation during some international crisis.

Relationship to the Fallout Shelter Program

As the tactical evacuation plans of the 1950s became obsolete due to the Soviet shift from bombers to ICBMs, the possibilities of protecting against the direct effects of nuclear explosions seemed very dim. In addition to the lack of time for protective action, it was thought that little, if any, blast protection could be found in existing structures within the cities. Further, the construction of special high-performance, blast-resistant shelters was not seriously considered because of the high expense in dollar terms. For these reasons, the provision of protection against all effects of nuclear weapons–a goal perceived to be completely impractical–shifted to the goal of protecting against radioactive fallout.

It was known that exposure to fallout radiation would cause radiation sickness and possibly death to millions in addition to those who might become casualties from the direct effects of nuclear weapons. Protection against fallout is relatively inexpensive and, in fact, vast resources for providing protection were known to be available in existing buildings. It seemed only sensible, therefore, to identify the naturally existing fallout protection and to develop plans to use it.

The fallout shelter program that was emphasized during the '60s had two major components: The first was locating and identifying the naturally existing fallout protection in structures. This was called the National Fallout Shelter Survey (NFSS). The second component involved plans for actual use of the fallout shelter spaces. This part of the program was called Community Shelter Planning (CSP).

Thus, if the central theme for civil defense in the '50s was best characterized by the term "tactical evacuation," the central theme for the '60s would best be characterized by the term "in-place fallout protection."

The fallout threat today is even more severe than it was in the '60s. Nuclear weapons are more plentiful and the yields are higher. The areas that could be subject to fallout are much larger, but much less predictable, than are the areas at risk from blast. The fallout threat is not limited to large cities and military targets; it encompasses all parts of the country, depending on points of weapon impact and prevailing winds. Severe radiation levels could occur hundreds of miles from the location of the bomb burst that produced the fallout. Further, the locations of high-level fallout could be in any direction depending on which way the winds happened to be blowing at the time.

Fallout protection must continue to be an integral part of civil preparedness, including Crisis Relocation Planning. People relocated from higher blast-risk areas still might face a serious hazard from radioactive fallout.

A great deal of study and experimentation has shown the best ways to provide fallout protection. The possibilities include: the already existing protection in large buildings found in the National Fallout Shelter Survey previously mentioned, and the protection in mine shafts, caves and in below-ground basements of residential structures. Also, many structures with inadequate fallout protection can be readily upgraded. As a final resort, if none of the above is available or if the spaces they provide are insufficient for the number of people requiring radiation protection, single-purpose expedient shelters can be constructed. Many different types, varying from covered trenches to large hasty-bunkers, have been designed and tested. According to Soviet civil defense manuals, expedient shelter is an important component of their civil defense plans.

Radiation protection will continue to be a critical requirement of U.S. civil preparedness programs. Crisis Relocation Planning will build on the developments and achievements of the 1960s.

CRP's Place in Other Civil Preparedness Programs

Crisis relocation is only one civil preparedness option. It is not intended to replace existing programs for protection against nuclear attack.

Most defense planners believe that a nuclear exchange, should one occur, most probably would follow a substantial period of international crisis. However, although highly unlikely and perhaps overly bizarre in concept, possibilities for a rapidly developing crisis do exist. For example, a nuclear accident, equipment malfunction or miscalculation might cause a nuclear detonation in another's territory. Hopefully, such a suddenly developing event would be identified for what it is in time to avoid a war.

No doubt there are other "bizarre scenarios" that could be imagined in which a rapidly developing crisis would provide insufficient time for city evacuation. But perhaps the most persuasive reason why in-place protection plans are necessary and why Crisis Relocation Planning cannot become the sole civil preparedness option is that in some international crisis the actual seriousness might be misjudged and an evacuation order not implemented when it should have been. Or, in other circumstances, city evacuation might seem too dangerous because of concern for how it might appear to the other side. (Would it appear, for example, to constitute a deliberate escalation, and thereby, an added threat?) Evacuation might be taken as a sign of offensive intent, counter to efforts to reduce the crisis through diplomacy.

Civil preparedness contingency planning must be flexible. No one can predict the course of history, and how or whether a nuclear war might develop. Who could have predicted that World War I would start because of the assassination of an obscure Austrian Archduke in Serbia, and who would have thought that the U.S. would be drawn into World War II as a result of a surprise enemy attack on Pearl Harbor? Contingency plans are needed for differing types of threats. Crisis Relocation Planning is one contingency option. In-place protection is another. Either or both might be needed in an actual crisis. The concept of CRP, together with in-place protection, provides alternative courses of action.

Method of Deployment

The Defense Civil Preparedness Agency, in coordination with concurring State and local governments, intends to deploy the Crisis Relocation Planning effort "with all deliberate speed." Defense Secretary Schlesinger described the approach briefly in his March report to Congress:

> **"Training of DCPA personnel and State and local personnel in handling relocation is currently underway. During the latter portion of Fiscal Year 1974 we will be conducting some eight to ten pilot projects to provide on-the-job experience and to field test techniques. Concurrent with the pilot projects, research and development efforts will be initiated to**

provide planning guidance for State and local planning of (among other things) food distribution during the relocation period, provision of fallout protection in host areas, and emergency services support."

Initially, the following cities have been selected for and have agreed to pilot study projects:

Colorado Springs, Colorado.
Dover, Delaware.
Duluth, Minnesota.
Great Falls, Montana.
Macon, Georgia.
Oklahoma City, Oklahoma.
Springfield, Massachusetts.
Tucson, Arizona.
Utica and Rome, New York.

Each of these locales is considered a possible target area since key military facilities or industrial complexes are located within or contiguous to these geographical areas.

The terms "Mark I" and "Mark II" for Crisis Relocation Planning are being used to differentiate between its two phases. Planning projects in the cities listed above are Mark I projects.

Mark I involves the allocation of personnel from those cities considered to be at high risk to nuclear weapon effects to areas in smaller cities, towns, and the countryside considered at much lower risk. This allocation begins with a computer-processed initial assignment which minimizes travel distances and avoids assigning evacuees from more than one high-risk area to the same host area. Also indicated is the ratio of the super-imposed evacuee population to the normal host area resident population.

The initial computer allocations have to be adjusted by hand analysis to account for such things as highway traffic capacities and possible interdictions by mountains, rivers, or lakes that the computer would not recognize. Detailed plans are developed to describe *who* uses *what* routes to go *where*. The *who* part of the allocation process could consist of grouping all residents within, for example, a Zip Code zone, or a census tract; another possibility would be to group people having the same telephone prefixes. The *by what route* designation might be a particular highway or rail line. The *where* part of the allocation—the destination for the evacuees—could be a town name or a county, or perhaps some prominent landmark.

An example of the results of the allocation process might be the following public instruction to be issued in a crisis period: "All residents of City W with Zip Code xxxxx should proceed South on US highway yy to the town of Z. More detailed instructions (written before CRP implementation) will be provided there."

The completion of Mark I plans will involve Federal, State, and local planners, but need not (and probably will not) involve participation by the general public.

Mark II requires the development of far more sophisticated plans, including detailed plans for taking care of the evacuees in the host areas. Included would be plans for feeding, developing fallout protection and radiological monitoring, and establishing medical, police, fire, and welfare services.

Mark II also requires detailed plans for the high-risk areas—the areas from which people would be relocated. Some personnel would have to remain behind for essential caretaking purposes such as fire fighting. Others would be needed to keep critical industries such as utilities, and food processing and pharmaceutical plants functioning, and possibly to continue essential production for national needs.

Detailed plans also would be required under Mark II for the in-place protection of non-relocated personnel. Protective measures must consider not only the threat from fallout, but also the blast and heat effects of nuclear weapons. DCPA surveys of existing structures, in addition to evaluating fallout protection as was the practice of the '60s, now also evaluate the relative protection afforded against the direct effects of nuclear explosions. Priority attention for these all-effects surveys is being given to the cities selected for prototype Crisis Relocation Planning.

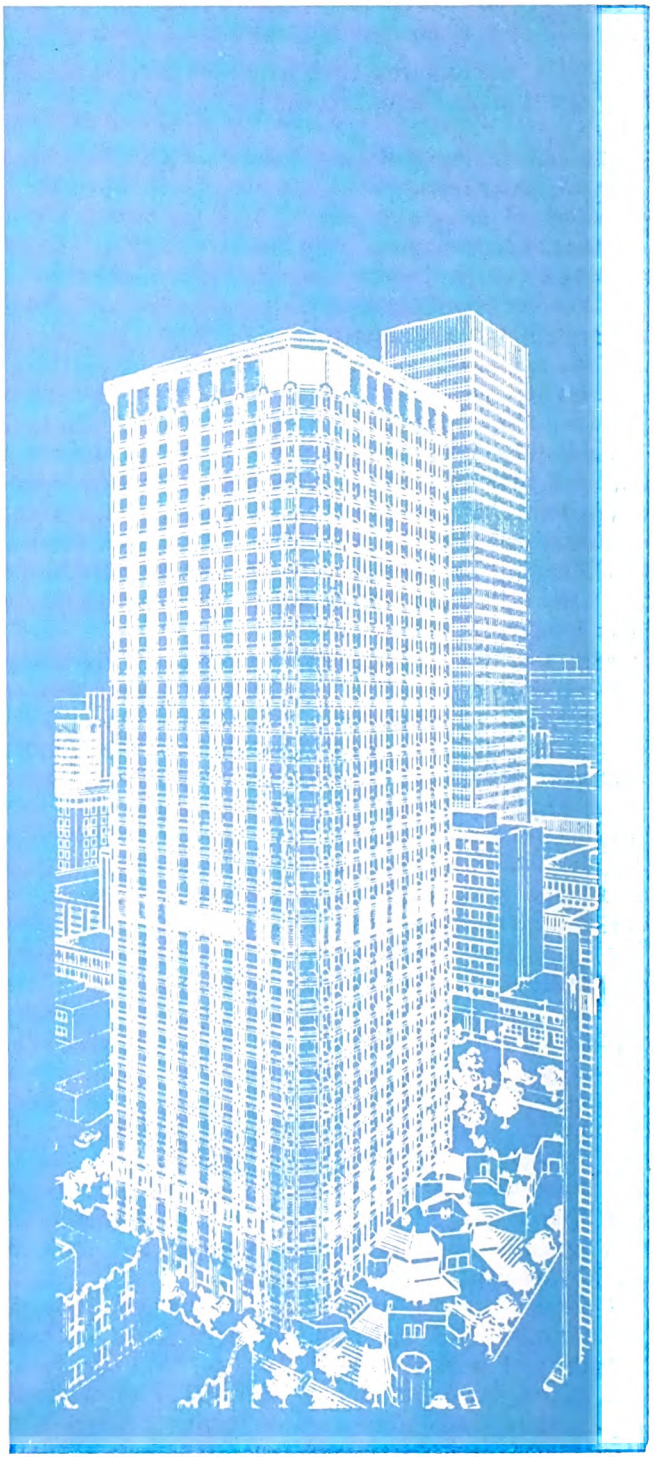
Research over the past few years has produced improved methods for identifying "all-effects" protection. This research has shown that, although little if any high-grade blast protection naturally occurs in existing structures, there is a substantial amount of what might be termed "moderate protection." Those people remaining in the evacuated cities would have a far higher chance of survival if they utilized this *moderate* shelter space than if they did not.

A firm commitment to develop complete sets of Crisis Relocation Plans that are truly national in scope will not be made until the results of the pilot projects have been studied. This must involve a careful assessment of the estimated time and resources required to carry out such a program.

Let me emphasize that CRP (1) will not replace or be a substitute for any of our current civil defense programs, including in-place shelter; it will be a contingency plan which will offer another option to be considered should the need arise, (2) will generate, as a bonus, an improved readiness on the part of participating State and local governments to conduct coordinated peacetime emergency operations, and (3) will only be undertaken in and for those areas wherein State and local government officials have concurred in the effort and have indicated their willingness to support CRP—participation by State and local governments will be on a voluntary basis. ■

A firesafety

In the last edition of FORESIGHT, the writer pointed out the need for a comprehensive approach to firesafety in designing new high-rise buildings. ("Lowering High-Rise Risks") This concept, adopted by the General Services Administration, led to the inclusion of a modern prototype firesafety system in the new $42½ million Seattle Federal Building.



No building, even one built of concrete and walled with fire-retardant panels, can be considered firesafe, just as no city, even one situated in the most peaceful of environment, can be safe from disasters. Safety in either case must come from intelligent planning, proper implementation of the plans, and effective action in carrying out the plans at a time of emergency.

Faced with the responsibility for more than 10,000 Federal buildings nationwide and with protecting the lives of 810,000 workers and visitors in those buildings, the General Services Administration under Administrator Arthur F. Sampson has become a leading proponent of developing new concepts in firesafety design. Three years ago GSA convened an International Conference on Firesafety in High-Rise Buildings, involving leaders in management, engineering, design, fire protection, control and prevention. From this conference GSA developed a completely new way of looking at fire prevention and control – a total system approach. This approach dictates that total firesafety analysis be carried out at the design stage of a building.

Redesign New Building

Putting principles into practice, GSA stopped the planning of a 37-story building in Seattle, and redesigned the building under this new concept – the first building designed and built by GSA to incorporate a total firesafety system.

Key to the fire protection system in the now-occupied Seattle Federal Building is the central emergency and communications control center. The center automatically and constantly monitors the entire building, its environment, security and emergency systems. At the first hint of a fire or any emergency, the center goes into action, carrying out a variety of emergency functions, including:

■ Receives and analyzes all emergency messages and signals to provide directions for building occupants, either by pre-recorded tapes or actual voice commands.

first By ELBERT YEE

■ Maintains external communications with organizations such as the Seattle fire and police departments, hospitals, and health officials.

■ Calls the fire department in case of fire, spelling out where in the building the fire is located.

■ Lights up a silhouette of the building on one of its panels, pinpointing the location and type of emergency signal (fire, smoke, medical, security, mechanical malfunction).

■ Flashes color-coded schematics on four screens, showing the layout of the trouble area plus step-by-step instructions on what to do in coping with the problem.

■ Brings all endangered elevators to the street floor and, at the same time, through recorded messages tells occupants in each elevator where they are going and why.

■ Plays similar recordings on the fire floor, telling people how to leave and where to go; also informs people in adjacent areas to expect people from the fire areas.

■ Starts or stops fans, opens or closes dampers to pull smoke out of fire areas while flooding adjacent areas with fresh air.

■ Provides communications between operators and emergency personnel in the troubled area.

Other Pluses Cited

Besides this control center, also included in the high-rise structure are: a total sprinkler system; smoke control for removal of unwanted products of combustion; fire-safe exit stairwells, and safety zones within the building from which fire, smoke, and toxic fumes are limited and to which people in danger zones can be moved. In constructing the building, fire-resistant or non-combustible materials were used throughout.

With all of its modern firesafety equipment and automated emergency equipment, the firesafety concept in the Seattle Federal Building would not be complete without the involvement of people. A facility self-protection plan establishes an organization of agency personnel to carry out specific duties in case of an emergency. The organization specifies such positions as emergency coordinator, firefighting and evacuation officer, floor warden, bomb search and reconnaisance officer, first-aid officer, utilities officer, handicapped person monitor, and rescue officer.

"Smoke, heat, and panic are natural enemies," GSA Administrator Sampson emphasizes. "We must mount a national campaign to master them in the modern buildings where we live and work. Doing that will depend on management – top management in business, industry, and government."■

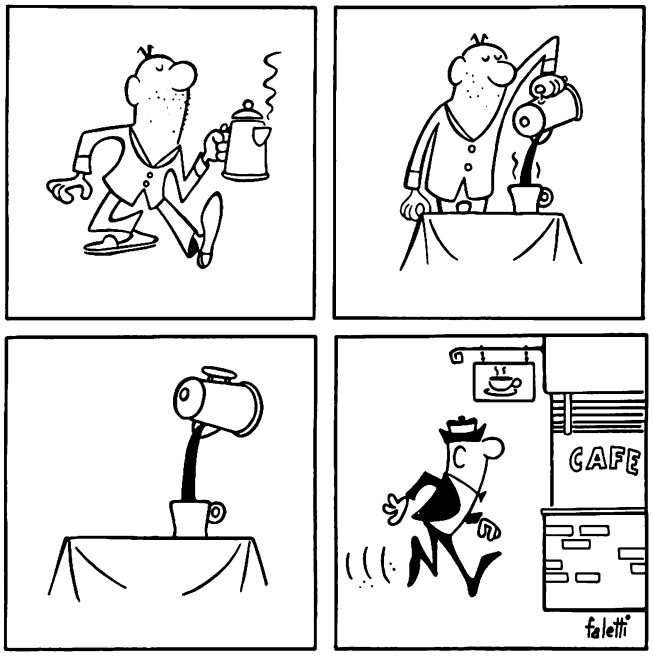
HAZARDOUS MATERIAL SEMINAR

A seminar will be held in Denver, Colorado, January 21-24, 1975, devoted to the preparation of training programs for police, fire, highway personnel, and others with responsibilities in handling transportation accidents involving hazardous material. The seminar will be directed to those people in each State who could be instrumental in setting up similar training programs in their State.

Colorado has had its training program going for more than a year, financed with Highway Safety funds through the Governor's Highway Safety Representative. (See *Controlling Hazardous Shipments,* FORESIGHT, May-June 1974.) Response to the Colorado program has indicated there are other States interested in conducting similar programs. Therefore, it was decided to hold a seminar passing on Colorado's experience to representatives from other States.

The seminar will cover those classes of hazardous material most likely to be involved in transportation accidents, and how to organize local training courses in the most effective ways for coping with this problem.

The registration fee will be $100 per attendee. For details on the Denver seminar, contact Milnor Senior, Colorado Division of Highway Safety, 1845 Sherman Street, Denver, Colorado 80203.



Regional Roundup

MANHATTAN, KANSAS

Radio Stations KMAN and KMKF of Manhattan, Kansas are combining a "Welcome to Kansas" promotional leaflet with weather safety instructions—and with good results.

General Manager Lowell E. Jack said the leaflet was designed mainly for newcomers to the State who are generally concerned about tornadoes, but it can be informative to anyone.

The single-fold leaflet starts with a "Welcome to Kansas," pointing out: "Many who move to Kansas are concerned about tornadoes yet the large majority of Kansans have never seen a tornado! However, they do occur and Radio Stations KMAN and KMKF have prepared this information for your information and safety."

The leaflet describes the normal operating hours for the two stations (one AM and one FM) and points out: "Both stations have stand-by power generators and can remain on the air if the commercial power fails. So you should have an AM-FM portable radio that operates with batteries in case *your* power should fail. We will do our best to keep you informed and hope you have a healthy respect for what the weather can do, but we also hope you will enjoy life in Kansas and not become unduly alarmed every time we have a thunderstorm." Then the leaflet describes the meaning of "Tornado Watch" and "Tornado Warning," together with protective actions to take should a tornado threaten.

"We are distributing the leaflet to all newcomers through Welcome Wagon, to all foreign students, and to the list of newly-hired professors and instructors at K-State," Mr. Jack said. "Copies also have been given to the city and county clerks, the Chamber of Commerce office, and the Recreation Commission office, all of whom have contact with newcomers. The piece has been very well received."

ATLANTA, GEORGIA

The Atlanta-Fulton County Civil Defense has formally presented 12 full sets of Scuba diving equipment, plus a boat, motor, and trailer to a newly organized Scuba Diving Team with the Atlanta Fire Department.

William E. Smith, Director of Atlanta-Fulton County Civil Defense, said the equipment was purchased entirely with local funds.

"The organization of this fully equipped team provides the City of Atlanta and Fulton County with the capability of meeting an urgent need for efficient body recovery and other underwater operations," Director Smith said.

NORTH KINGSTOWN, RHODE ISLAND

Federal excess property, loaned to State and local governments to increase their capabilities to cope with a disaster, can be a major asset in increasing a community's preparedness posture. And nowhere is this more evident than in North Kingstown, Rhode Island, a Providence suburban community of 31,000 people on Narragansett Bay.

Included in the rejuvenated equipment are two fire trucks, one fashioned from an Army truck and the other from a Navy gasoline tanker, and a 35-foot personnel boat from a decommissioned aircraft carrier. The boat, repainted and radio equipped, was assigned to the town's harbormaster as a back-up vessel.

"A number of people drowned here in 1938 and 1954," notes North Kingstown Civil Preparedness Director Robert P. Phelan, a retired Navy officer with more than half-a-lifetime's experience in the Seabees. "The only answer is warning and preparedness to evacuate certain areas."

Captain Jerry Arnold, Fire Department maintenance officer, operates out of a "traveling machine shop" to renovate and repaint the emergency equipment.

SAGINAW, MICHIGAN

When water seeped into underground telephone lines and disrupted all telephone service at St. Luke's Hospital in

Saginaw,.Michigan, Saginaw Civil Defense acted to provide emergency communications for the hospital.

For some four hours, volunteer civil defense members of the local Radio Amateur Civil Emergency Services (RACES) unit operated a mobile radio unit at the hospital, relaying messages and requests to an Emergency Operating Center where they were dispatched to the concerned parties.

CAMDEN COUNTY, NEW JERSEY

One hundred Camden County staff members have been trained in the emergency use of heavy equipment under a program promoted by Philip H. Farrow, Coordinator of Civil Defense and Disaster Control for the county.

Mr. Farrow said the men, all volunteers, have been trained in the use of heavy-duty equipment, such as tractor-trailers (up to 16 wheels), 2½-ton vehicles, fork-lift, back hoe, bull-dozers, and other related equipment especially needed for emergency work on earthen dams, creating fire breaks, and debris removal after a disaster. The special training program is administered by American Training Services, Inc., a Camden County firm.

The special program was started to obtain faster and more efficient use of the heavy equipment during emergencies, Mr. Farrow said. ■

Professional Volunteers

By LINDA J. PEPA

This article by Columnist Linda J. Pepa was published in the weekly newspaper, "The Crossings" of Hammonton, New Jersey, shortly after a surprise fire-rescue exercise was carried out under the direction of Edward ("Bud") Duble, Director of Civil Defense and Disaster Control for Winslow Township in Camden County, New Jersey.

It is reprinted here by permission of "The Crossings" with only one change: In the newspaper the column was headed "Pretty Lucky." An accurate heading. But FORESIGHT also considers the column to be a perceptive view of those PROFESSIONAL VOLUNTEERS.

A city friend of mine was at my house one day when the emergency siren stationed on our corner erupted in one of its familiar ear-piercing blasts (the kind that usually come in the middle of the night).

As she saw the unmarked cars with the portable blue lights inside whiz past on the way to the firehouse, she asked me how the fire and rescue units were set up here in the suburbs. She was aghast when I explained these emergency units were made up entirely of volunteers and the cars she'd seen had been racing to answer the call. "Isn't that taking a chance?" she asked. "Suppose no one is available or the people who do come aren't capable?"

Boy, how little she knew about volunteer workers. From my experiences in meeting rescue workers here in lower Camden County, as well as in my hometown of Runnemede and the other suburban towns where I've worked, the courage and dedication displayed by these people has surpassed anything that can be secured with a salary and union card.

Last week's civil defense drill in Winslow Township was an example. In minutes after the sirens first went off, fire trucks and ambulance crews converged on Edgewood Senior High School for what was thought to be a boiler room explosion. Even after everyone knew it was just a drill, they still hustled. And despite the inopportune timing—6:15 p.m. (for when does a real emergency worry about interrupting the dinner hour?)—there everyone was: the men who just came home from work and probably wanted nothing more than to relax; and the women, just returning from work themselves or exhausted from a hard day with the kids.

This leads me to ask several questions. Why do these people do it? And why do they give up so much of their time, not only to be on call, but to train themselves in fire-fighting and emergency medical treatment? And do the residents they serve realize what a mess they'd be in if people like these didn't exist?

What really intrigues me the most, however, is the universality of this dedication. In towns throughout New Jersey and the entire country as well, there are people selfless and compassionate enough to take on these monumental responsibilities. And for nothing in return.

The next time one of us gripes because it's time to donate to the local ambulance squad or fire company, let's think for a minute how much it would cost to finance "professional" departments.

And I use the word "professional" only to distinguish those who do these jobs for a living from those who do them as volunteer work, for their skills are equal. How lucky we are these people care. ■

PREPAREDNESS ACTIONS *(continued from page 3)*

the sirens were sounded four times on the basis of sightings as two tornadoes moved through south Tulsa.

Broadcasters Get Out the Word

Ten radio stations and four television broadcasting companies in Tulsa were also recipients of the Public Service Award. The National Weather Service Office at Tulsa notified the media of the possibility of severe weather during the early morning hours of June 8 and urged area broadcasters to make frequent broadcasts of watches, warnings, and safety rules. A steady flow of weather advisories and educational tornado tips were broadcast for more than seven hours before the tornadoes hit.

For a time when tornadoes were ravaging Tulsa, only one radio station–KRMG–had electrical power. Lloyd Spyres of the National Weather Service Tulsa office, sent a message over the NOAA Weather Wire asking any of the news media to call in. KRMG responded, and for the next two hours an open telephone line permitted live broadcasts of the latest warnings and storm position to Tulsans and nearby areas.

The people of eastern Oklahoma are also much indebted to the Tulsa Repeater Organization. The Repeaters, an amateur radio group of 100 members, makes up the Tulsa Spotter Network. On June 7, the Repeaters provided two persons at the Tulsa Weather Service Office to monitor the two meter band. They remained all day and night with contacts open at highway patrol posts and police headquarters where other members of the group were stationed. More than 40 other Repeaters were stationed at strategic visual outposts. They collected and transmitted vital reports at frequent intervals throughout the day and night. Thomas Shaw, president of the organization, accepted the Public Service Award on behalf of the Repeaters for "hundreds of reports and members' first-hand sightings of severe weather which undoubtedly helped save many lives." The Repeaters have been providing this excellent service to the National Weather Service and Oklahomans for nearly 15 years.

Newspaper Pitches In

Seldom, if ever, has a newspaper had the opportunity to give advance notice of short-fused tornadoes and flash floods. But at 2:00 p.m. on the afternoon of June 8, the *Tulsa Tribune* hit the street with a front-page headline: "Area Flooding Forecast," and also prominently featured a "tornado watch" weather bulletin for the area.

The Public Service Award for the City of Drumright made special note of a comprehensive siren warning system and a weather watch tower used in Drumright preparedness plans. The watch tower, erected by the citizens of Drumright in 1966 on one of the highest points in the southwest section of the city, was manned early on June 8, and a sighting resulted in quick activation of the clusters of sirens and subsequent protective actions by an alerted citizenry. At the nursing home in Drumright, the 102 patients were moved to interior hallways.

Gene Garrett and Fred Fleschute served as spotters at the weather watch tower. Mayor Cleo Hutchinson of Drumright was on a high hill overlooking the city. They were in radio communication with one another and with police headquarters. Their sighting of the tornado southwest of the city gave Drumright five to eight critical minutes to "take cover."

Mayor Hutchinson received two awards, one on behalf of the city and its preparedness efforts, and another for providing some of the first sightings of the tornado and for the sounding of the warning sirens.■

Radio Signs for Motorists

A new Radio-Weather Information sign has been approved by the Federal Highway Administration for use along rural Federal-aid highways in areas where weather commonly creates driving hazards.

The signs will display local radio station frequencies from which motorists can receive weather and travel information.

Federal Highway Administration criteria for the signs:

■ Radio-Weather Information signs will make use of a white legend and border on a blue background.

■ Only the numerical indication of the radio frequency will be used to identify a station broadcasting weather travel information.

■ A maximum of four frequencies can be shown on each sign.

■ Any radio station, whose frequency is shown on a sign, should have a signal strong enough to serve 70 miles along the roadway.

■ Signs should be spaced according to needs, but ordinarily not closer than 30 miles apart for each direction to travel.

■ A particular radio frequency may be shown a maximum of twice in one direction along the main line.

■ Only radio stations whose signal will be of value to the traveler and who agree to carry the following two items are to be identified on weather information signs: (a) periodic weather warnings at no more than 15-minute intervals during periods of adverse weather, and (b) road condition information affecting the roadway being traveled once every half hour when required, supplied by an official agency having jurisdiction.

■ The stations to be included on the signs should be selected in cooperation with the association(s) representing major broadcasting stations in the area to provide (a) maximum coverage to all motorists on both AM and FM frequencies, and (b) consideration of 24-hours-a-day, 7-days-a-week broadcast capability.

The Federal Highway Administration said additional criteria may be developed by individual States. The signs are to be installed at the option of State highway departments.■

Emergency Food for Bangladesh

As in 1970, when a cyclone left many homeless and hungry in Bangladesh, (formerly East Pakistan), the Defense Civil Preparedness Agency was able to respond to an urgent requirement this year for civil defense survival biscuits by the Agency for International Development (AID), Department of State, to feed the victims of devastating floods in that country. The government of Bangladesh asked for the survival biscuits by name.

In meeting this emergency, DCPA canvassed civil defense and emergency preparedness officials throughout the United States to determine what quantities of survival biscuits stored in public fallout shelters could be made available for immediate shipment to Bangladesh.

Responding to an urgent call from DCPA Director John E. Davis, the eight DCPA regional directors personally supervised collection of offers for this humanitarian cause. State directors called on local directors. Their pooled efforts soon resulted in the availability of some 17 million pounds of the survival biscuits, or 5 percent of the total stored in shelters throughout the country. The quantity shipped to Bangladesh will feed one million persons for 30 days.

Transport of the biscuits to ports of debarkation was handled by Defense Supply Agency and the General Services Administration. During the month of September, 7,000 tons—a total of 14 million pounds, or 400 truckloads—were on the way to Bangladesh from Seattle, Houston, San Francisco, and other ports. An additional 1,500 tons—principally from California, Hawaii, and Puerto Rico—were donated to CARE because AID was unable to transport them in the time allotted.

Inland and ocean freight charges for the shipment to Bangladesh were paid by the Disaster Relief Office, AID.

The civil defense survival biscuit was especially developed for long storage without appreciable depreciation in nutritional value. Although some have been stored for over 10 years, because of their packaging in airtight tins, periodic inspections have found them to be in good to excellent condition.

Research into emergency feeding of large numbers of people in shelters has reduced reliance by the United States on the survival biscuit formerly considered a necessity as a shelter supply item. Greater reliance is now placed on food which can be taken into shelters if a crisis develops and on food resources already available in buildings designated as public shelters.—**Mary U. Harris.**

SURVIVAL BISCUITS being loaded aboard a ship bound for Bangladesh.

Here's a digest of news items on civil preparedness topics:

NUCLEAR CONCERNS – Atomic scientist Eugene P. Wigner gave a lengthy interview to reporter Carl A. Vines of *UPI*. Dr. Wigner's views: Western world defenses are far behind those of the Soviet Union and China; few western nations, with the exception of Sweden and Switzerland, have workable civil defense programs; the U.S. position is seen as most perilous, not only to this country but to the defense of western Europe. Wigner went into detail on the extensive Soviet civil defense effort. He expressed fears that "easy acceptance of ... detente between this country and Russia has lulled the American people into a false sense of security." ... Another leading nuclear scientist, Dr. Edward Teller, also provided a grim picture. "The danger (of a nuclear war) is greater than it was a decade ago," Teller says in *People Magazine*, and he believes Americans are not sufficiently concerned about it. "Reliable deterrents don't exist," Teller says. "We must be satisfied with an uncertain future where there is at least a chance for peace."

VIEWS OF STATE OFFICIALS – E. Erie Jones, Illinois Director of Civil Defense, says he has made assessments of the leading sources of potential accidents, and he rates railroads high on the list. "We have not yet suffered the dramatic accident that makes clear the need for government and social attention to the problem. We're going to get a bad one." In the same *Chicago Tribune* story, U.S. Department of Transportation officials note that two billion tons of hazardous materials are shipped across the United States each year... Virginia's Lt. Gov. John Dalton told the State's Civil Defense Association: "The success of the ... Association lies in the high level of community orientation in the program... I have always believed that if any government program is going to succeed, it must succeed at the town and county and community level." Dalton is one of 200 young Americans whom *Time* magazine recently recognized for leadership potential. (*Daily Progress*, Charlottesville).

CIVIL PREPAREDNESS IN SCHOOLS – Floyd County, Indiana CD Director E. H. Allen surveyed the county's schools for tornado protection. He had harsh views about trends in school design, saying of one structure: "This is a classic example of modern design – glass, and basementless school buildings. There is no reasonably safe area. The tornado would pull off the roof and outer skin of the building and shatter most or all of the glass ... I don't know of a solution short of tearing it down." (*The Tribune*, Albany, Indiana) ... About 1,400 Kentucky schools will be provided with a diagram locating the best tornado shelter area in the schools as a result of a special survey, reports the Louisville *Courier-Journal* ... A six-week study of tornado protection in schools began in Aiken County, S.C., reported the *Standard & Review*. The same paper reported that classroom instruction in civil defense in Aiken County "is a first in the State of South Carolina." The project was begun as a part of recommendations made by an On-Site Assistance team. Aiken CD Director L. C. Greene said the program would "make Aiken County a pilot county" for the State's new civil defense education program.

FEDERAL ASSISTANCE – In Appleton, Wisconsin, the *Post-Crescent* noted: "Federal officials have given final approval to a $77,859 grant to help Appleton build a new police station." The grant is to pay half the cost of constructing a Civil Defense Emergency Operating Center in the new building ... "Paul Leese, Director of Lancaster County (Pa.) Civil Defense, this morning unveiled a plan to establish a $300,000 ... civil defense headquarters in the old and new courthouses by 1978," the *News* reported, adding that "County commissioners listened to a report by Leese on the plans and voted to accept the offer from the federal government for assistance." ... Various news items report acquisition of helicopters (through the excess property loan program) by Cleburne, Texas; Orlando, Florida; Birmingham, and the State of South Carolina. Senator Thurmond and Congressman Olin Teague were among those backing the projects. ... A tornado threat moved the town of Superior, Nebraska to apply for Federal matching funds for a new four-siren alarm system, reports the *Express* ... "The Association of Bay Area Governments will apply for a $30,000 federal grant to begin development of a regional information and planning system covering a variety of natural and man-made disasters," the San Carlos, California *Enquirer* notes.

CP OVERSEAS – The *National Enquirer* looked into the status of civil defense in Switzerland and Sweden. "The entire population of Switzerland can now be protected during a nuclear bomb attack – in a vast, nationwide system of underground shelter built under a government program," the newspaper reported. A Swiss civil defense official told the *Enquirer*: "Swiss law requires that almost all new buildings, including private homes, contain a shelter," with the government reimbursing 70 percent of the cost. The Swiss have spent more than $1 billion on shelters, says the report. Sweden has built shelters for 50 percent of its population and will complete its program by the end of the 1980's, the Swedish military attache in Washington reported . . . The Military Governor of Paris expressed concern that "panic, rumor, sabotage and rioting during a nuclear crisis could break a nation's will to resist." He urged civil defense and other efforts be augmented by 20,000 armed forces reserve officers in the Paris area. (*Military Review* magazine) . . . Col. General Alexander T. Altunin, deputy defense minister and chief of Soviet civil defense, sharply criticized school teachers and education officials for "painting a dark picture in describing modern weapons of mass destruction." Altunin said schools should instill "deep faith" in the effectiveness of civil defense against nuclear attack. He called for instruction of Soviet school children in the use of full-scale and improvised shelter. (*Christian Science Monitor*, from an article in the Soviet publication, *Military Knowledge*).

GROWING THREAT: PROLIFERATION – *The New York Times*: "A group of leading American scientists and Canadian disarmament experts . . . warned today that the threat of world nuclear destruction had taken on frightening new proportions." Members of the Pugwash conference of scientists on world affairs, the experts cited the detonation of a nuclear device by India, the offer of nuclear power plants to Israel and Egypt, new missile developments, and the estimates that as many as 24 nations could be members of the so-called "nuclear club" within 10 years as causing a "rude awakening" from the complacency which has grown up over the last decade . . . The New Orleans *Times-Picayune* reported: "The third U.S.-U.S.S.R. summit conference has suddenly taken on increased importance with the dawning recognition that the age of nuclear proliferation has arrived. Apprehension over the spread of nuclear weaponry was apparent among West European leaders gathered (in Brussels) for a pre-summit meeting." . . . A Harvard University economist and strategic defense expert, Dr. Thomas Schelling, has warned U.S. defense planners to consider military threats from countries other than the Soviet Union in designing defense systems," reports *UPI*. Schelling said: "No one can take for granted there will be peace between France and Germany or Japan or China" over the next 25 years.

NUCLEAR POWER PLANTS – "The Atomic Energy Commission today signed a new formal agreement with the State of South Carolina outlining a cooperative program for emergency preparedness with the AEC's Savannah River Plant," the *People Sentinel* (Barnwell, S.C.) reported. Agreement was signed by Fred C. Craft, State Director of Disaster Preparedness, and Nat Stetson, AEC plant manager. Stetson said: "Cooperation among State and Federal agencies is vital to the smooth operation of government, but perhaps nowhere is it more important than in the area of emergency preparedness." Citing the plant's excellent safety record, Stetson noted, however, that "Good management dictates the necessity for contingency plans in the unlikely event of a major incident." . . . The *Dispatch* (Clinton, Iowa) reported: "Iowa Civil Defense officials complained this morning they were not notified soon enough after a recent incident at the Quad-Cities Nuclear Generating Station, and asked a plant official to cooperate in improving communications between the plant and local officials. Henry Bocella of the State office asked for a direct communications line between the State office and the plant as essential if it were necessary to evacuate residents in the event of a radioactive discharge into the atmosphere."

ON-SITE ASSISTANCE – "Representatives of city and county governments signed into effect Monday a full county disaster preparedness plan which has been developed over the past three months by the local civil defense unit and the Indiana University Civil Preparedness Center," the Richmond, Indiana *Palladium-Item* reports. Wayne County Civil Defense Director Paul Smith, Chairman Wambo of the County Commissioners, and Richmond Mayor Byron Klute were instrumental in putting the project across . . . A 14-member Federal-State disaster planning team will conduct "a survey to determine whether the people of Marguette County (Michigan) could save lives and property during a major community disaster," the *Mining Journal* reports . . . Joe N. Hopper, administrative assistant to Tennessee Governor Winfield Dunn, headed a delegation which presented On-Site survey findings to Sullivan County officials, says the *Virginia-Tennessean* of Bristol, Va., adding that the report is designed to evaluate the ability of Sullivan County to react to a serious emergency. – **Joseph V. Quinn.**

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MARCH/APRIL 1975

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The Safety Business

Mr. Manning was General Counsel for the Defense Civil Preparedness Agency prior to his retirement last year from Federal service. He is now Director of the Disaster Assistance Project for The Council of State Governments. Mr. Bottoms, a 1966 honors graduate of Auburn University, is Mr. Manning's assistant in the project.

NEEDED NOW:

By **CHARLES M. MANNING** and **GLEN D. BOTTOMS** The Council of State Governments

Some States by virtue of their location, exposure, and climate are more disaster-prone than others. But it is abundantly clear that no State is immune to disasters. Consider:

■ Only one State – Utah – has never had a disaster severe enough in damage and cost to warrant a Presidential declaration of a "major disaster."

■ In 1973, more than a quarter of the Nation's counties were hit by disasters in which the expenditure of Federal funds exceeded three-quarters-of-a-billion dollars in assistance to States, local governments and their citizens in 31 States under 46 Presidential "major disaster" declarations.

■ In 1972, 48 "major disasters" hit 23 States and caused approximately $3.5 billion property damage. Over $2.5 billion in Federal funds was expended in recovery efforts.

■ Insurance underwriting losses alone for tornadoes in the Spring of 1974 are estimated to exceed $150 million.

■ The costs to the President's Disaster Relief Fund in 1973 are estimated to exceed $176 million for the 46 declared "major disasters," and for the 46 in 1974 to total $153 million. And these totals do not include disaster expenditures by other Federal agencies.

Only Part of the Disaster Loses

The content in which the foregoing must be considered is that the Federal Government's efforts are to *supplement* the disaster relief efforts of State and local governments. Or to put it another way, actual disaster losses are much greater than disaster-relief expenditures by the Federal Government. Awesome, but why do States need to take legislative action now?

Every State in the Union has an existing disaster law. The majority of these are broadened civil defense laws, expanded by definition to include peacetime disaster efforts – laws first enacted in the early 1950's upon the recommendation of the Council of State Governments in its *Suggested State Legislation* program as the "Model State Civil Defense Act." These laws were aimed primarily at the enemy attack (nuclear) threat, not designed to treat specifically with the problems of disaster prevention, preparation, mitigation, response, and recovery efforts of the States and their local governments in peacetime emergencies. To meet the greatly increased involvement of the Federal Government in disaster relief measures, the Council of State Governments developed, in a cooperative effort with the former Office of Emergency Preparedness, the "Example State Disaster Act of 1972." This was issued as a special report and carried as a part of the *Suggested State Legislation – 1973* program as an aid to State officials in considering legislative action to strengthen and modernize their disaster legislation.

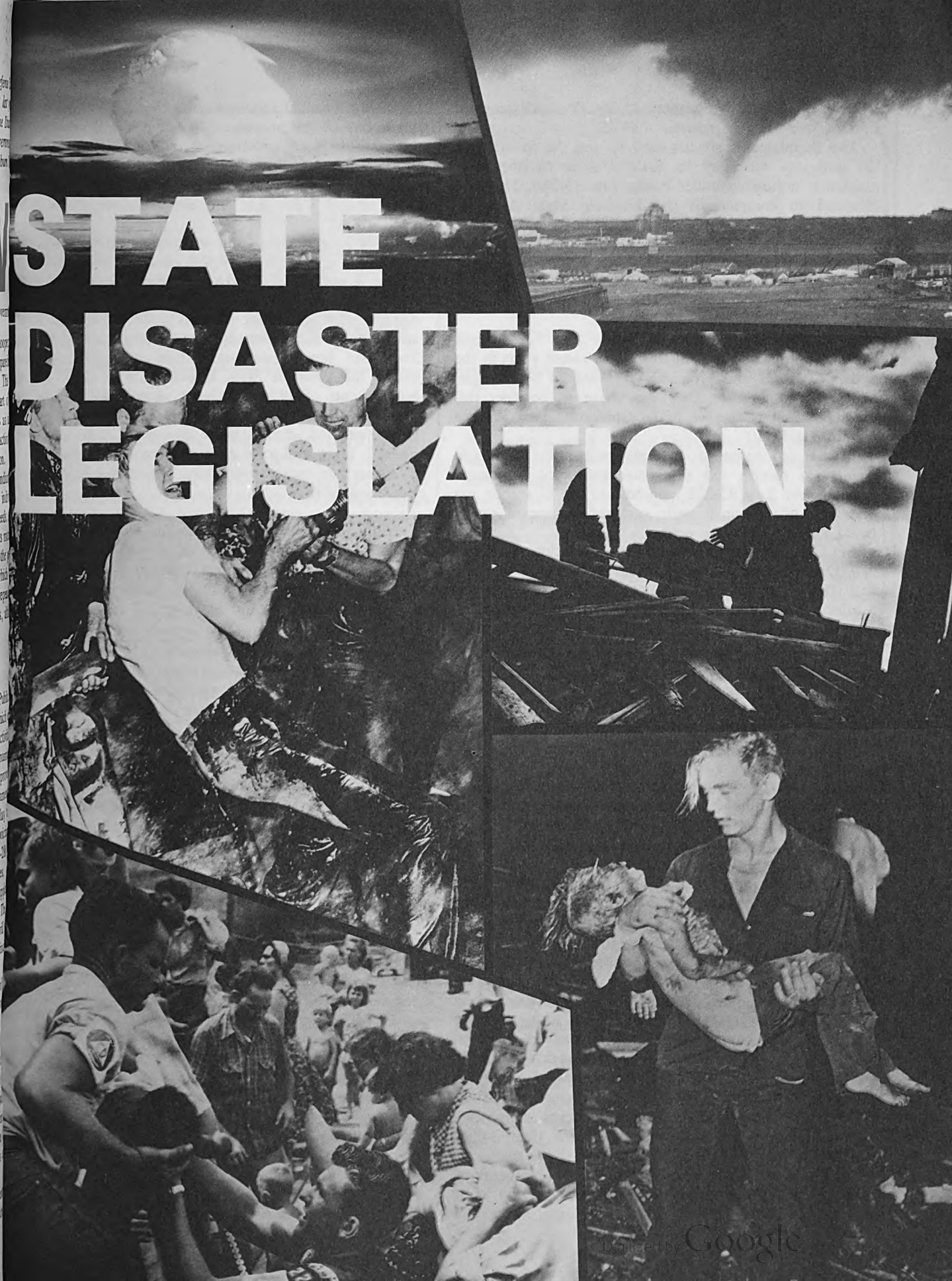
The Example Act is drafted as a compendium of provisions which can be adapted separately by individual States in accordance with their particular needs. It is consistent with the civil defense statutes, and is mutually reinforcing or aimed at situations peculiar to the peacetime disaster problem. Of the 14 States which have adopted the Example Act to date, none have repealed or materially modified their civil defense statutes, although some pertinent sections have been combined.

New Law, New Guidance

On May 22, 1974, the President approved Public Law 93-288, the "Disaster Relief Act of 1974," which established a new statutory base for the disaster activities of the Federal Government. The law contains a number of new features and programs intended to improve the capabilities of Federal, State, and local governments to cope with disasters, and to respond without delay to the needs of communities, families, and individuals victimized by disasters. The clear thrust of Public Law 93-288 is to impose greater responsibilities on the States, while expanding the Federal assistance available to supplement the efforts of State and local governments. The Act clearly contemplates that Federal assistance will flow through and be administered by the States, principally through the instrument of the Governor.

The Disaster Assistance Project of the Council of State Governments, in a cooperative effort and under contract to the Federal Disaster Assistance Administration (continued from the OEP effort by FDAA), analyzed the provisions of the Disaster Relief Act of 1974 to ascertain whether the Example State Disaster Act was still a valid recommendation to the States. The conclusion was that the Example Act was still basically sound but there was a need for supplemental recommendations for some of the new programs, or to fill out voids in programs carried over from Public Law 91-606.

Four Supplemental Example Acts were presented to the Council's Governing Board for consideration, and



were adopted as a Supplement to the Council's program of *Suggested State Legislation – 1975.*

The Supplements are intended to arm the States with the authority necessary to qualify for or to administer assistance authorized under Public Law 93-288. They are intended to complement the Example State Act, not supplant it. The Example Act is considered still to meet the basic need of States seeking an adequate statutory base from which to conduct disaster-mitigation activities.

Three Reasons for Action

With the changes made by Public Law 93-288, and considering the many changes made in recent years in the Federal statutes and programs, why should State Legislatures act now when they may have to consider this question again next year or in subsequent years? Three reasons stand out:

FIRST and foremost, to make certain the State can qualify to receive and administer assistance authorized under Public Law 93-288, and to arm the Governor and State executive branch with a clear-cut basis of operational and administrative action.

SECOND, legislation as a means of attacking problems is a dynamic thing. It seldom reaches the desired goal the first time around; changing conditions or experience usually point up needed improvements or modification. Legislation enacted today may be changed tomorrow, but this is one of the purposes of Legislatures. To assure that the State, its local governments, and its citizens have the advantage of an adequate base to conduct disaster activities, each State should consider the recommendations in the Example State Act and the Supplements of 1975 now.

THIRD, as a part of the one-time State Planning Grant application of up to $250,000 under Section 201(c) of Public Law 93-288, FDAA regulations provide for a review and analysis of the statutory base of the State's disaster activities to identify gaps or deficiencies, to devise an action plan to remedy any defects, and to improve State and local disaster-mitigation capabilities. To the extent the Example State Disaster Act of 1972 and its Supplements of 1975 have been adopted by a State, the planning funds and efforts can be put to work on procedures and administrative arrangements to implement Federal, State, and local disaster operational requirements.

Altogether, rather compelling reasons for State disaster legislation NOW.

(For additional information on the Example State Disaster Act and the 1975 Supplements, write to The Council of State Governments, Disaster Assistance Project, 1225 Connecticut Avenue, N.W., Suite 300, Washington, D.C. 20036, attention Mr. Manning.)

Saving Rainy Days

A quarter-of-a-million dollars was saved during last fiscal year by the National Oceanic and Atmospheric Administration (NOAA) through its program of reconditioning and re-using data measuring devices attached to weather ballons.

NOAA's National Weather Service uses these small instruments, radiosondes, to obtain information about the upper atomsphere – data which is vital for preparing forecasts.

Out of about 80,000 radiosondes carried aloft by weather ballons last year, 20,000 (25 percent) were recovered by the public, returned to the Weather Service, reconditioned, and placed back in service. Although some weather stations averaged less than 14 percent recovery, the top ten averaged more than 60 percent. Bismarck, North Dakota, and Peoria, Illinois chalked up a 70 percent record.

Each day the Weather Service launches about 300 radiosondes from a network of 130 stations. Helium-filled ballons lift them to about 90,000 feet above the earth. During their rise, instruments inside measure temperature, pressure, and humidity at various levels. A tiny radio transmitter coupled with the instruments relays this information to the ground. Wind directions and speeds at different levels are obtained by tracking radiosondes with ground equipment.

When the weather ballons reach a certain altitude, they burst, a parachute opens, and the radiosondes float to earth. Some of them fall in remote areas or into the sea where they are never seen again. About 25 percent, however, come to rest in places where they are found and returned to the National Weather Service Reconditioning Center in Joliet, Illinois, where they are restored at the rate of about 80 a day. Reconditioning costs about $15 compared to $27 for a new radiosonde.

The Weather Service urges everyone who discovers a radiosonde – perhaps dangling from a tree in the backyard or lying in an open field – to return it to the Reconditioning Center. A postage-paid sack is provided for this purpose within the small, white plastic box containing the radiosonde.

There's no cash reward, just the satisfaction of being a good citizen and helping the Government save tax dollars during a period when every manufactured produce re-used also means a saving of energy. – **Nancy E. Pridgeon**, National Weather Service.

viewpoint

One of America's greatest resources is voluntarism. For more than three centuries, a spirit of voluntary, unselfish, uncompensated service to others has permeated American life. Throughout our history, citizens have formed organizations to provide such service. Millions of others have acted individually to help meet some pressing human need – not for reward or recompense, but solely for the satisfaction of serving their fellowmen.

The past 25 years has seen the development of organized civil preparedness in the United States. In essence this is the attempt of local governments (aided by State and Federal government) to prepare in advance for peacetime disasters and possible nuclear attack; respond effectively when emergencies occur; and thus lessen the effects of catastrophes, save lives, alleviate human suffering, and aid recovery.

Many volunteer organizations that previously worked so valiantly "on their own" to help mitigate the effects of disasters – such as local units of the Red Cross and Salvation Army – have in recent years coordinated their efforts with those of their local governments, and thus maximized the total beneficial results obtained. Such organizations also have helped to make the civil preparedness systems of their local governments more complete and more effective.

The heart or core of civil preparedness is "local government organized, equipped, and ready to cope with disaster." A fully effective CP system, however, mobilizes and uses *all* the community's protective resources, private as well as public. And one essential nongovernmental resource is volunteers, organized into groups or serving individually, supplementing the local government's resources and efforts.

Throughout the country at present, an estimated 32,000 volunteers are working in civil preparedness agencies. About 100 of these are full-time directors of their agencies, some 1,900 are part-time directors, and the remaining 30,000 serve as staff members or specialists of various types. On the average, the 32,000 persons spend about one-eighth of their time on civil preparedness activities. In round numbers, about half of the civil preparedness work in the United States is performed by full- or part-time volunteers associated with local and State CP agencies.

Another group of volunteers whose humanitarian service merits special recognition are the thousands of Americans who come forward when disasters strike and give unstinting effort to saving lives and alleviating suffering at the disaster scenes. Typical of this group are the college students and other citizens who served so tirlessly when Tropical Storm Agnes devastated sections of Pennsylvania in June 1972, claiming 48 lives, destroying about 3,500 homes and damaging some 35,000 others.

Finally, there are the volunteer organizations – such as Red Cross, Salvation Army, Boy Scouts, Civil Air Patrol, veterans' groups, Radio Amateur Civil Emergency Service (RACES), and others – who contribute in some way to protecting Americans from disaster effects. Some of these work on a continuing basis with civil preparedness agencies, helping prepare the advance plans for coping with disasters. Others spring into action when catastrophes occur, carrying out the humanitarian tasks for which they are especially qualified, and coordinating their activities with the civil preparedness agencies involved. And some organizations, such as the American Society of Civil Engineers and other professional groups, add to our safety and well-being by contributing their knowledge and expertise in safety-related fields, such as the design of structures that are resistant to storms, earthquakes, and nuclear fallout radiation.

Individual volunteers and volunteer organizations have a large and essential role in protecting Americans from disasters. It is clearly a responsibility of local and State government officials to provide such persons and groups the opportunity to make their maximum contribution to the effectiveness of civil preparedness agencies and systems.

John E. Davis

John E. Davis
Director

In any type of disaster – whether natural such as flood, tornado or hurricane, or man-made such as enemy nuclear attack – lives can be saved if people know what actions to take when warning is given. The first step, however, must be to know what "standard" warning signals mean. Find out *now* from your local Civil Preparedness Office what signals are being used in *your* community; what they sound like; what they mean; and what actions you should take when you hear them.

The two "standard" signals that have been adopted in most communities are these:

THE ATTACK WARNING SIGNAL. This will be sounded only in case of enemy attack. The signal itself is a 3-to-5-minute *wavering sound* on the sirens, or a series of *short blasts* on whistles, horns or other devices, repeated as deemed necessary. The Attack Warning Signal means that an actual enemy attack against the United States has been detected, and that protective action should be taken immediately. *This signal has no other meaning, and will be used for no other purpose.*

If the Attack Warning Signal sounds, go to a fallout shelter immediately (unless your local government has told you to do something else.) After you are in shelter, listen to a radio for more information and instructions.

If there is a nuclear flash. It is possible – but extremely unlikely – that your first warning of an enemy attack might be the flash of a nuclear explosion in the sky some distance away. Or there might be a flash after warning had been given, possibly while you were on your way to shelter. TAKE COVER INSTANTLY. By getting inside or under something within a few seconds, you might avoid being seriously burned by the heat or injured by the blast wave of the nuclear explosion. If the explosion were some distance away, you might have 5 to 15 seconds before being seriously injured by heat, and perhaps 30 to 60 seconds before the blast wave arrives. Getting under cover within these time limits might save your life. The important thing is to avoid being burned by the heat, thrown about by the blast, or struck by flying objects. Also, to avoid injury to your eyes NEVER LOOK AT THE FLASH OF AN EXPLOSION OR THE NUCLEAR FIREBALL.

Lie on your side in a curled-up position and cover your head with your arms and hands. Hold this position until yo have *counted slowly to two hundrea.* Then – and only then – move on to shelter.

THE ATTENTION OR ALERT SIGNAL. This is used by some local governments to get the attention of citizens in a time of threatened or impending natural disaster, or some other peacetime emergency. This signal itself is a 3-to-5 minute *steady blast* on sirens, whistles, horns, or other devices. In most places, the Attention or Alert Signal means that the local government wants to broadcast important information on radio or television concerning a peacetime disaster.

If you hear the Attention or Alert Signal, tune in a local radio or TV station and follow the official instructions being broadcast.

Whichever signal is sounding, *don't* use the telephone to obtain further information and advice about the emergency. Depend on the radio or television, since the government will be broadcasting all the information it has available and telephone lines will be needed for official calls.

foresight

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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

ZIP'S BAG

In the November-December issue of FORESIGHT there was an excellent article titled "School Safety Sales." A photo showed children in a standing, face-to-the-wall position.

The Weather Service film "Tornado" shows children in a kneeling position.

Perhaps your leaders would be interested in a third method as it is practiced in this county with the approval of school authorities.

The children are instructed to take their largest textbook with them to their assigned shelter area. There they sit on their buttocks, back to the wall, holding the textbook over their heads.

The reasoning is this: Tornado Warnings last a minimum of one-half hour, and sometimes longer, so a sitting position is more comfortable, plus they are more immobilized in a situation that might cause panic. Children are curious, so we let them face out. The book is held over their head, affording some protecting from flying debris, and like Linus' blanket, giving them a sense of security by having something familiar in their hands.

Ray A. Blett, Coordinator
Kent County Civil Defense
Grand Rapids, Michigan

****

We were quite pleased to notice several articles in the November-December issue of FORESIGHT which parallel the activities which have gone on in this office for quite some time. We were the first county in Nebraska to have all of our schools complete their disaster planning in the many areas such as fire, bomb threat, tornado, blizzard, and the like. This was done three years ago and, of course, we up-date the planning each season with the new administrators and teachers.

Joan V. Heinzman, Director
Grand Island-Hall County Civil Preparedness
Grand Island, Nebraska

We read FORESIGHT as each issue is received and find it most informative. Please continue to mail it as it is appreciated very much.

John W. Sturgeon
Assistant to the Director
Department of Community Health
American Medical Association
Chicago, Illinois

****

As editor of a corporate employee publication, I often use other publications as source and idea materials. While browsing through the November-December issue of FORESIGHT, I was intrigued with some of the tips offered in the column, "Perch Patter" (on coping with winter storms, especially blizzards). Several of the suggestions offered were well made, but I must seriously question the tip in the section continued on page 19.

The third suggestion under the heading, "Travel Only If Necessary," states: "Have emergency 'winter storm supplies' in the car such as sand, shovel, windshield scraper, tow chain or rope, extra gasoline. . ." Good grief! Let's not urge motorists to turn the family vehicle into a potential fire-bomb/death trap. I think the point has been made, but obviously not strong or often enough, concerning the danger of carrying gasoline in a can in the trunk of an automobile. Shame on you people for advocating such a dangerous practice.

Granted, it is no fun (and even dangerous) to run out of gasoline on a cold, snowy day or night, but better to do that than to risk being burned to death in an auto set on fire because gasoline was stored in the car.

Michael C. Berry
Editorial Assistant
Indiana & Michigan Electric Company
Fort Wayne, Indiana

(You make a good point – warning against the advice to carry extra gasoline in the car if forced to drive under near-blizzard conditions. That advice was meant for a special situation, but we agree it would be dangerous for motorists to follow it as a general practice. – Ed.)

The concepts of safety and civil preparedness are closely allied. More than 60 years ago – on October 17, 1913 – the Chicago Tribune, even then self-designated as "The World's Greatest Newspaper," carried a front-page headline: NATION-WIDE MOVE TO LOWER DEATHS IN THE INDUSTRIES – an announcement of the formation of the National Council for Industrial Safety, predecessor to the National Safety Council. Since then the Council's activities have touched virtually every segment of American society. This is the first of a three-part series on the Council and its programs – America's largest non-profit business devoted totally to safety.

The Safety Business

By JOHN I. BOTT

ACCIDENT IN THE MACHINE SHOP-- A woodcut from a painting by John Bahr. The Bettmann Archive

The second decade of the 20th Century was a golden era for the news media. In the early years of the decade:

■ President Wilson detonated from Washington the dynamite charge that ripped the last obstruction from the Panama Canal...

■ New York's famous vaudeville house, The Palace, opened its doors...

■ A small Indiana college, Notre Dame, used a dramatic new play – the forward pass – and routed mighty Army, 55-13...

■ Hudson Motors designed a startling new body, the sedan...

■ The zipper was invented...

■ The 16th Amendment establishing the Federal Income Tax (1%) became law...

■ There were strong rumors that a war might break out in Europe.

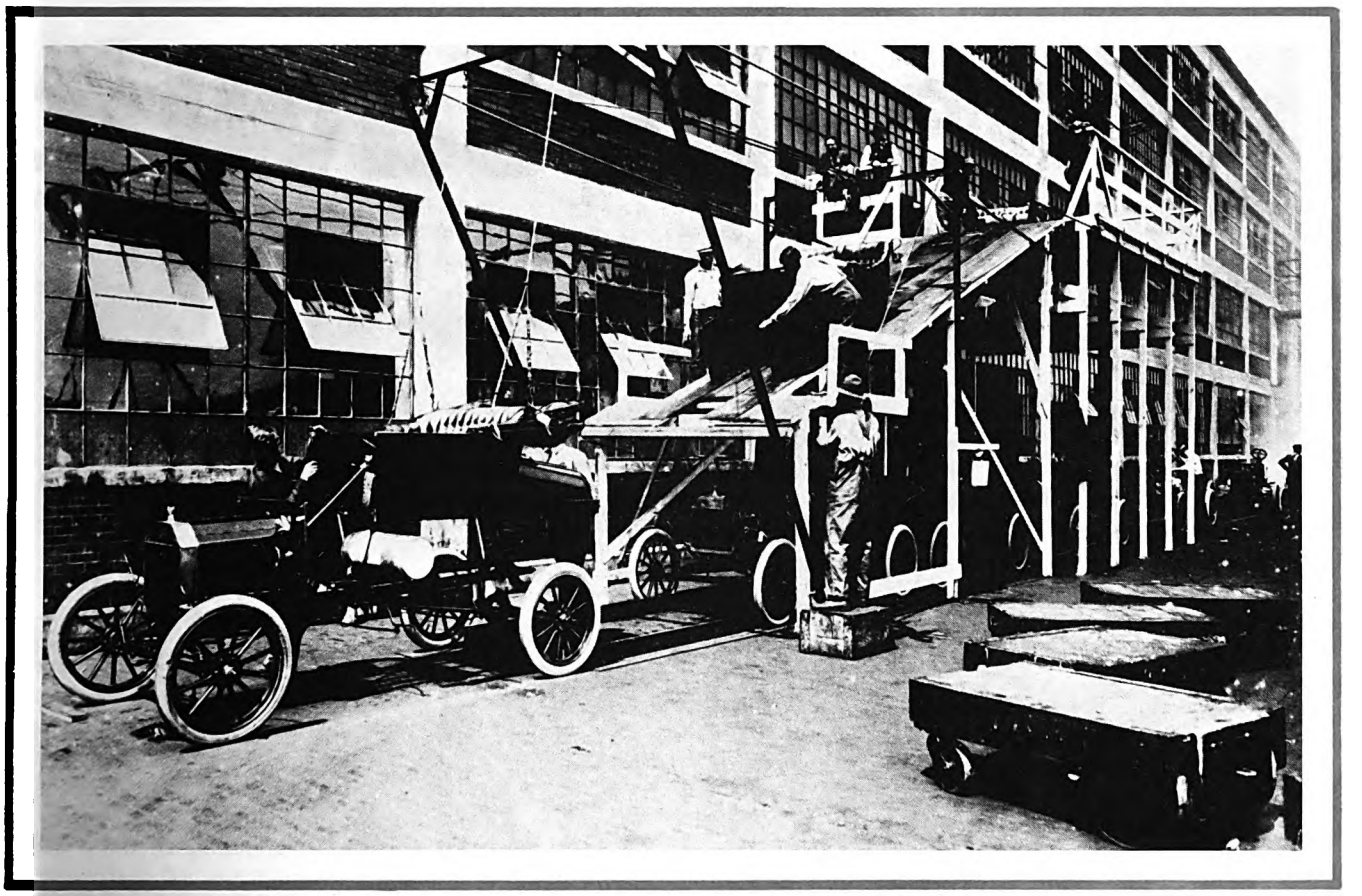
But the news that generated more headlines and stories than any other took place when the "unsinkable" Titanic hit an iceberg on her maiden cruise and went to the bottom. The loss of the Titanic and the 1,502 passengers that perished with her was indeed a great tragedy. It provided headlines for weeks for every newspaper in the world and countless magazine articles and books for years to come.

A Fact of Death

Less newsworthy was a fact of life, or in this case death: The development of industry in the United States since the turn of the century had been explosive both in its growth and the toll exacted in numbers of lives lost. To be exact, every 16 *minutes* a worker died – 33,000 deaths a year, almost 2 million accidents ... but no headlines.

Industry was hardly unaware of the grim meaning in these statistics, including the fact that, as fatalities and injuries mounted, so did the cost of operations. When plant morale suffered, when downtime increased, when inexperienced labor had to substitute for the lost veteran, when damage claims soared – when these things happened, production slowed and costs rose alarmingly.

The high incidence of accidents stretched across the broad reaches of industry. Well in the vanguard was the



OFF THE ASSEMBLY LINE comes a growing problem.

The Council attacked the problem of industrial accidents in other ways. Identification of dangerous places and machinery, describing how safeguards could be developed for them, and the establishment of safety rules and instruction in their use by operating personnel are examples. Safety equipment now considered commonplace was then in its infancy. The use of such safety items as special glasses, gloves, shoes, leggings, welder's shields, and helmets was strongly advocated by the Council, as was the development of first-aid instruction and equipment. Industry and labor listened and put more and more of the Council's recommendations into effect.

Statistics relating to the efficiency of Council suggestions are unfortunately slim for the early years of its efforts. But the worker knew. The United States Steel Company published a photograph of 91 pairs of mangled glasses that had saved eyes in one year alone. If one item at one company had proved so successful, the Council's safety story was making an impact.

Enter the Mass-Produced Auto

But time stands still for no man. America's developing industrial might brought vast changes. Full dinner pails meant a burgeoning consumer group. And when Henry Ford introduced the assembly line technique whereby an automobile could be built from scratch in 1½ hours as against 14 hours, the car was available as private transportation to the man on the street. More cars, more traffic, more accidents, more fatalities. As an example, in Chicago five persons were killed in automobile accidents in 1905, 153 persons in 1913 – an increase from one death per 1,290 automobiles to one death per 188 automobiles in only eight years. It was obvious that the launching of the automobile upon a horse and buggy age was to provide a specter of death unknown in peacetime history. Had the 1913 rate continued, traffic deaths today would reach almost 700,000 annually – more than 12 times today's actual rate of about 55,000 traffic deaths a year which in itself is considered too high.

More than any other single factor, the growing use of the family automobile vastly multiplied the programs and outreach of the National Safety Council and its impact upon the daily lives of millions of Americans. In an age of mounting dangers, the safety business was a growth industry.

(Next in FORESIGHT: Upswing in the Safety Business.)

The lifesaving

CARE photo in Niger, North Africa.

biscuit

By RUSSELL B. CLANAHAN

Hunger knows no boundaries. A simple fact in a world bedeviled by food shortages, capricious weather, and exploding populations in many countries.

Nuclear war is a fearful evil. Another fact in an uneasy world striving hard for peace, yet conscious of the possibility that such efforts may still fail.

Ironic, then, that efforts by the United States civil defense program of a decade ago to help prepare people to survive the modern day nuclear evil are now helping people to survive their ancient enemy famine in Bangladesh, and Honduras, and parts of West Africa.

Shelter Program Spinoff

It's all because of a spinoff from the National Fallout Shelter Program, which was started in 1961 by the Defense Department's Office of Civil Defense and continues today under OCD's successor, the Defense Civil Preparedness Agency.

Officials reasoned that if people threatened by nuclear war might have to spend up to 14 days in a fallout shelter while radiation levels outside were subsiding to relatively "safe" levels, then they would need food, water, sanitation and medical supplies stockpiled in public shelters, plus radiation detection instruments.

From 1962 to 1964, about 165,000 tons of "survival biscuits" were produced in the United States for stockpiling in public fallout shelters. These are a wheat-based cracker, resembling a graham cracker, specially packaged in vacuum-sealed cans for long storage life.

Eventually, enough shelter supplies were distributed to local communities to stock some 105,000 shelter facilities with a 14-day sustaining ration for more than 65,000,000 persons. The great majority of these supplies are still in place today, owned by local governments throughout the United States and managed by local civil preparedness (civil defense) offices.

Two Trends Converge

Over the years, two seemingly unrelated trends were occurring.

On the one hand, the survival biscuits were getting older – well beyond their originally estimated five-year shelf life. Although periodic quality checks by the U.S. Army Veterinary Corps showed – and still show – that most of the crackers were remaining edible long after their estimated expiration date, sooner or later they would have to be discarded. Reliance is now placed on food supplies in normal distribution channels rather than pre-stored foods in the event of a nuclear attack.

On the other hand, a combination of exploding population and disastrous changes in climate were threatening the food supplies of more and more of the world's "have not" nations.

The two lines first converged in November 1970 when a cyclone in the Bay of Bengal pushed a tidal surge over heavily populated coastal areas of East Pakistan (now Bangladesh). An estimated 200,000 persons were killed in the most lethal natural disaster of this century.

Responding to calls for help from the stricken nation, relayed through the U.S. Agency for International Development (AID), DCPA, at the suggestion of an employee, promptly shipped 500 tons of the crackers. Instantly dubbed "English tea biscuits" at their destination, the crackers proved highly acceptable and saved the lives of uncounted refugees from the floods. Only 14 pounds of the biscuits plus water were needed to feed one person for a month.

More Shipments Made

Through AID, the Catholic Relief Service, CARE, and the generosity of local governments in America stockpiling the food supplies, other food emergencies over the next four years were met by shipping the easily transported, hard-to-spoil survival biscuits. In 1971, the Philippines received 500 tons after severe flooding. Colombia and Chad got 500 tons in 1972, another 500 tons went to Nicaragua after the disastrous Managua earthquake, and 2,500 tons were sent by CARE to various destinations in Africa, Asia, and South America. A total of 19 countries received some of the emergency food rations.

By 1974 – a year rich in climatic freaks of drought, flooding or other acts of nature – the full value of these famine-fighting food supplies was apparent to many hard-hit countries.

Bangladesh was again foremost among these. When monsoon floods wiped out much of the country's crops in late summer, officials of that nation, familiar with the earlier life-saving success of the survival biscuits, asked AID for 7,000 tons. Through DCPA, the request went out via State Governors to local communities to make available surplus food stocks.

Moving quickly, local authorities in 34 States told DCPA of crackers available for donation. The vital cargoes

were trucked under General Service Administration contracts to meet ships in Seattle, San Francisco, Houston, New Orleans, and Brooklyn, New York. Transportation costs were paid by AID.

Disaster Strikes Again

As the first precious cargoes moved toward ports, Hurricane Fifi struck Honduras, leaving tens of thousands homeless and many dead. Another 2,000 tons of the crackers were needed there and in parts of drought-stricken West Africa.

Meanwhile, nature underscored the need in Bangladesh when another cyclone struck coastal areas on November 28, making more thousands homeless only a few days after the first shiploads of biscuits arrived there to help alleviate the earlier flood-induced famine.

Altogether, by the end of 1974, about 27,000,000 pounds of survival biscuits had been shipped to needy nations. An estimated 150,000 tons, or 300 million pounds, still remained in the public fallout shelters and storehouses of American cities and military bases. DCPA officials estimate this would be enough to feed 10,000,000 people for 60 days.

Fortunate Twist of Fate

Responsible program officials within the Defense Civil Preparedness Agency make only modest claims for what has so far been done, or even what can be done when the limited resources available are compared with the world's immense food needs. In effect, the donations made a virtue of necessity, since the crackers would inevitably have become inedible within a few years anyway.

Yet, the fact remains that a supply program originally conceived to lessen the impact of man's extreme inhumanity to man has, through a fortunate twist of fate, been made to serve humanity. It gives the hungry in some of the world's poorest nations a reprieve to pick up their lives and carry on.

SURVIVAL BISCUITS arrive to help victims of the Bay of Bengal cyclone-tidal wave.

Disaster Report

Some 960 tornadoes, floods, storms, and other natural disasters struck communities throughout the United States during 1974, causing approximately $1.4 billion in damage. To speed Federal assistance to disaster victims, the President declared 31 States and three Territories disaster areas during the year. Nine States received two or more declarations.

In a special report on disasters, Thomas P. Dunne, Administrator of the Federal Disaster Assistance Administration of the Department of Housing and Urban Development, said that throughout the year more than 50,000 disaster-stricken families registered for Federal aid at Disaster Assistance Centers in stricken zones. The centers were staffed by specialists from a number of Federal, State, local, and volunteer agencies operating in disaster areas under the coordination of the FDAA Administrator. (See "Picking Up the Pieces," FORESIGHT, July-August 1974.)

46 Major Disasters

At the request of State Governors, the President signed 46 major disaster declarations during 1974 affecting 590 counties in 31 States and three Territories, Mr. Dunne said. This matched the 46 declarations made in 1973. The all-time record was 48 declarations in 1972.

Tornadoes and floods accounted for most of the major disaster declarations. Tornadoes buffeted 187 counties in 10 States the first week in April, killing 336 people, injuring 9,000, and destroying nearly 5,000 homes. In one 24-hour span alone, from April 3 to 4, 140 tornadoes touched down, eclipsing the previous high of 47 on April 11, 1965, the Psalm Sunday tornadoes that hammered midwestern States. Federal weather experts said it was extremely rare for that many tornadoes to occur in such a short time span.

Administrator Dunne Estimated that Federal expenditures in the 46 major disasters during 1974 will be over $454 million. Another $185 million in Federal aid was disbursed from the President's Disaster Relief Fund during the year for major disasters of previous years.

The Federal funds are used for such aid as temporary housing, unemployment compensation for those out of work due to the disaster, removal of debris, and reconstruction of public property such as highways, schools, utility systems, and dikes.

Aid to 31 States, Territories

Three States-- Louisiana, Ohio, and Oklahoma – were declared major disaster areas three times in 1974. Six States had two major disasters – Alaska, Arkansas, California, Illinois, Minnesota, and West Virginia. There were 25 single major disasters in Alabama, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Maine, Michigan, Mississippi, Missouri, Montana, New Hampshire, New York, North Carolina, North Dakota, Oregon, Tennessee, Texas, Washington, Wisconsin, plus the Territories of Samoa and the Virgin Islands, and the Commonwealth of Puerto Rico.

Although final figures are not yet available for the total expenditures of some 20 Federal agencies charged with disaster recovery tasks, preliminary estimates by FDAA for 1974 include the following disaster program costs for the declared major disasters:

- President's Disaster Relief Fund: $153 million. (Half of this total is being used to assist the 10 States stricken by the April tornadoes.)
- Small Business Administration and the Department of Agriculture's Farmers Home Administration, 9,300 loans to individuals: $131 million.
- Department of Health, Education, and Welfare (repair or restoration of public schools): $16.9 million.
- Department of Agriculture (Food and Nutrition Service, Agricultural Stabilization and Conservation Service): $10.9 million.
- Corps of Engineers (estimated total expenditures from PL 84-99 funds for flood preparedness, flood fighting and rescue operations, and repair or restoration of flood control works): $75 million.
- Department of Transportation (Federal Highway Administration expenditures on Federal aid system roads, bridges, and applicable structures): $66.5 million.

Mr. Dunne said charitable and religious organizations were also active in major disaster areas throughout the Nation during the year, including the American National Red Cross, Salvation Army, Seventh Day Adventists, Mennonite Disaster Service, and Catholic Charities.

The word and world of...

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confusing to the public

By ESTHER KELLNER
Deputy Director
Wayne County, Indiana Civil Defense

Even on the highest level, civil defense officials make one of the commonest and most damaging mistakes known to public relations. They forget they are not always dealing with their peers.

Consequently, they adopt for national usage terms more grandiose than lucid. And this results in what many of them believe to be "public apathy" though more often it is just plain public bewilderment.

An excellent example is the word "coordinator." Why under heaven would officials choose, to be used by the general public, a word which thousands of people can neither spell nor pronounce, and understand only vaguely at best?

Why do officials find it so difficult to call a spade a spade... or a Director a Director? This is a term familiar to all and understood by all. People also realize that Red Cross directors, safety directors, medical directors, and all other directors combine their efforts and capabilities through the civil defense center when disaster strikes. It is not necessary to call a civil defense director a "coordinator" to have this understood.

As a professional writer with a lifetime of experience in public-relations work, I found it very interesting a short time ago to interview 50 people on the subject of the word "coordinator." I made no effort to pick and choose, but simply interviewed these people as I came to them. Out of the 50, only four could spell, pronounce, and correctly define the term... though some of *those* definitions were rather shaky.

Here are some examples:

FACTORY WORKER: Pronounced the word fairly well but spelled it "coorinator." Said, "I know I've heard it, but I don't know what it means."

BUS DRIVER: Pronounced it correctly, but spelled it "coordinater." Said, "It means for one person to get things like another person."

BUS PASSENGER: Spelled it "car" and then aban-

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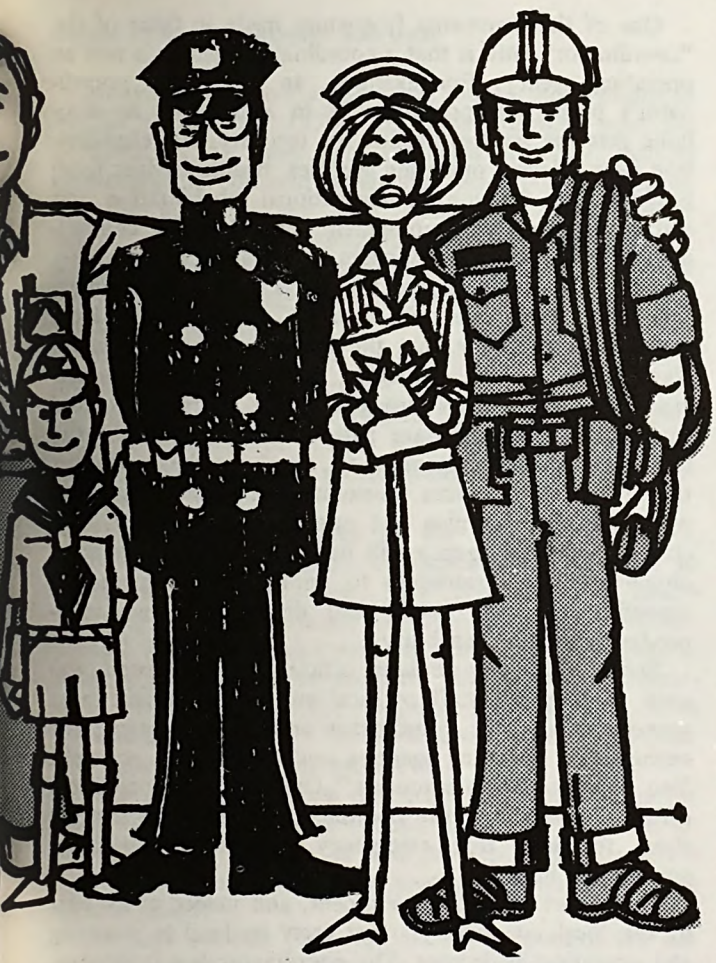


doned it. Pronounced it "carinater." Explained: "It means somebody that is always starting trouble."

TELEPHONE REPAIRMAN: Could neither spell the word nor pronounce it. Definition: "It means you're not awkward."

MECHANIC: Could not spell or pronounce the word. Said, "It's the guy in charge of everything. Cardnator."

SWITCHBOARD OPERATOR: Pronounced the word "cornator." Could not spell it. Definition: "A person that brings things together." *(concluded on page 28)*

growing acceptance by institutions

By GERALD E. KLONGLAN
and
CHARLES L. MULFORD
Professors of Sociology
Iowa State University

From *Webster's New World Dictionary:*

DIRECTOR: a person who directs or controls; supervisor; manager.

COORDINATOR: a person . . . that coordinates.

COORDINATE: to bring into proper order or relation; harmonize, adjust; of the same order or importance; equal in rank.

One of the topics we often hear discussed as we interact with emergency preparedness personnel at local, State, and national levels is which title – "local civil defense director" or "local civil defense coordinator" – is more appropriate or useful. Both titles are currently used throughout the United States.

Conflicting Viewpoints

On the one hand are the people who argue that we should use "local civil defense director" because "director" implies more authority, and therefore more control, than someone called a "coordinator." These same people aruge that the general public better understands what a "director" does since the public is familiar with director roles in business, industry, and government.

On the other hand are the people who argue that "local civil defense coordinator" is a more appropriate title. They maintain that "coordinator" better describes the *functions* that have to be carried out; that being a "coordinator" is really different from being a "director."

The discussion as to whether "director" or "coordinator" is a more appropriate title is not unique to the emergency preparedness area. Similar discussions have taken place, and are taking place, in other societal problem areas, such as health, alcoholism, aging, youth, and drug addiction. Compared to 15 years ago, more and more agencies are opting for the use of "coordinator" rather than "director" for title designations. We now have alcoholism coordinators, local youth coordinators, aging centers headed by a coordinator for aging.

What are some of the reasons for the increasing use of the term "coordinator" rather than "director" in our society? A review of some of these factors may provide insights into the appropriateness of the use of "director" or "coordinator" for the civil preparedness field.

Authority vs. No Authority

Many people argue that the title "coordinator" is more appropriate than "director" when the primary function of the job requires obtaining the cooperation of other agencies and organizations over which the job (or agency) has no authority. To many people the title "director" implies that the role, and the person filling the role, has the authority (official power) to give directions to other individuals or agencies which must be followed. The term "coordinator" does not imply that the role has such authority.

In the case of planning for local emergencies it is clear that the local emergency agency does not have the authority to direct many of the community agencies or organizations which have a role to play in emergency preparedness. In actual practice, many local emergency preparedness officials say they can't direct anyone.

In fact, local chief executives (mayors, board of supervisors, etc.) do not even have the authority to direct many local community organizations or agencies to carry out emergency preparedness activities. Although the local chief executive may have the authority to direct police, fire, and some other agencies, the executive usually does not have the authority to direct emergency-related local governmental agencies, such as public hospitals and schools. These agencies usually have their own elected "board of directors" who are independent of local chief executives. And, of course, the local chief executive has no control over the many local private agencies and organizations which have resources needed to plan and deal with local emergencies such as doctors and private contractors. Also, there are usually many State and Federal agencies that are not under the authority of the local chief executive and therefore cannot be directed by him.

Many argue that, to have an effective local emergency preparedness capability, all relevant agencies and organizations must be coordinated since many of them can't be directed. In other words, coordination is needed when there is no point of higher authority that could be used to force participation. Even during an emergency, most argue, the local emergency preparedness coordinator would not direct. During an emergency the local coordinator would be a staff assistant to the local chief executive who would be the "director" of the emergency operations.

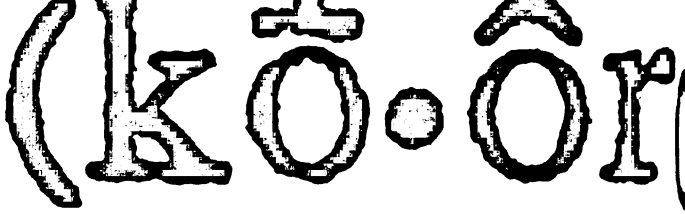
Planning vs. Operating Functions

One of the arguments frequently made in favor of the "coordinator" title is that a coordinating agency is not an operating agency. For example, an alcoholism coordinator's primary responsibility is to assure that an alcoholic gets the services needed for recovery and rehabilitation from relevant operating agencies: health services from hospitals, job training from vocational rehabilitation, job placement from the employment service, family counseling from the local social services department, and the like.

Similarily, many argue the local civil preparedness agency is not an operating agency. The role of the local coordinator is to see that the various operating agencies (fire, police, hospitals, doctors, etc.) *jointly* make emergency planning preparations and *jointly* operate in actual emergencies. An important part of this argument is the need for operating agencies to clearly understand that they have the resources (personnel and equipment) that will be needed to plan and operate in emergency. The civil preparedness agency will help the operating agencies obtain additional resources to improve their emergency capability but will usually not develop its own independent operating capability.

Some local preparedness officials have stressed the need to keep the staff of local emergency preparedness agencies small (one coordinator and one secretary, for example) so operating agencies can't say, "Do it yourself. You have your own resources." Other local preparedness officials have found the coordinator title allows one to stress the idea that emergency preparedness is local government in action.

Every part of local government, and indeed every part of the local community, must carry its load in planning and operating in disaster. The coordinator is a facilitator,



a catalyst to develop a comprehensive emergency preparedness capability.

Another ramification of this distinction between a coordinating agency and an operating agency can be seen in the position taken with respect to the recruitment and use of volunteers. A coordinator usually will not have a large number of volunteers under his or her direction. Rather, the various operating agencies will have their own cadre of volunteers to call on in an actual emergency. The police and fire departments, for example, will recruit and train volunteers to carry out emergency activities when their regular force cannot meet the demands brought on by an emergency.

Bigger Problems, Broader Solutions

Many people have argued that our society's problems of the 1960's and 1970's are quite different from the problems of 50 years ago. Problems of today, such as environmental concerns of air and water pollution, meeting the needs of the aged, developing comprehensive health care, and preparing for thermonuclear war, are more complex. If they are to be solved, new approaches are needed, including the involvement of more organizations and individuals.

Historically the United States has established governmental (public) and volunteer (private) agencies to solve "categorical" problems. Problems were narrowly defined, such as tuberculosis, polio, soil conservation, and expanded highway nets. Agencies were created to solve each particular problem.

The complex problems of the 1960's and 1970's, however, have generated "comprehensive" solutions to problems. Thus we now have comprehensive health planning by Departments of Transportation, Environmental Protection Agencies, etc. One aspect of Federal revenue sharing was to eliminate the "categories" allocation of funding at the national level so that local communities could do comprehensive "general" community development at the local level.

One result of the new definition of problems was the need for many agencies (public and private) to be involved in the solution to the problem. This created a greater need for *coordination* among agencies as solutions were planned.

Another societal force for increased *coordination* has been the reluctance of taxpayers and legislators to provide funds for new *operating agencies* to solve society's problems. Instead legislators are arguing that existing operating agencies should work together – *coordinate* – to solve our new and bigger problems. Rather than fund a new operating agency to solve the problems of alcoholism, funds were provided for the planning and coordination of alcoholism efforts. However, existing national, State, and local operational agencies were expected to provide the needed *operational programs* to help solve the alcoholism problem. Thus special interest groups, emphasizing coordination of existing agencies to solve problems, have been more favorably received than those special interest groups emphasizing the creation of new operating agencies to solve particular problems.

New Thoughts on Training 'Directors'

Most people in our society have been trained to be directors rather than coordinators. Universities and government agencies have many programs designed to train managers and directors. Schools of public administration, business administration, and industrial engineering, as well as sociologists, psychologists, and other social scientists have stressed the importance of how to operate as an effective manager or director *within an organization*. Traditional, university and governmental agency training programs, however, have not emphasized the principles of how to establish interagency relations effectively and how to operate as an effective coordinator in a *community*. Only recently has there been the recognition of the need to add this new dimension of interagency relations and coordination to the training of many local agency personnel. Health, welfare, youth, agricultural, and other agencies are just beginning to provide inservice training in interagency relations and coordination.

Because of the importance of interagency coordination in planning for and operating in local emergencies, the Defense Civil Preparedness Agency has funded a project to develop a training module on interagency coordination. The purpose of the project is to prepare training material which would be utilized in a three or four-day State or regional training seminar. The coordination training module was given its initial test in a pilot demonstration seminar held last December at the DCPA Staff College in Battle Creek, Michigan. Reports on this coordination training module will be presented in future editions of FORESIGHT.

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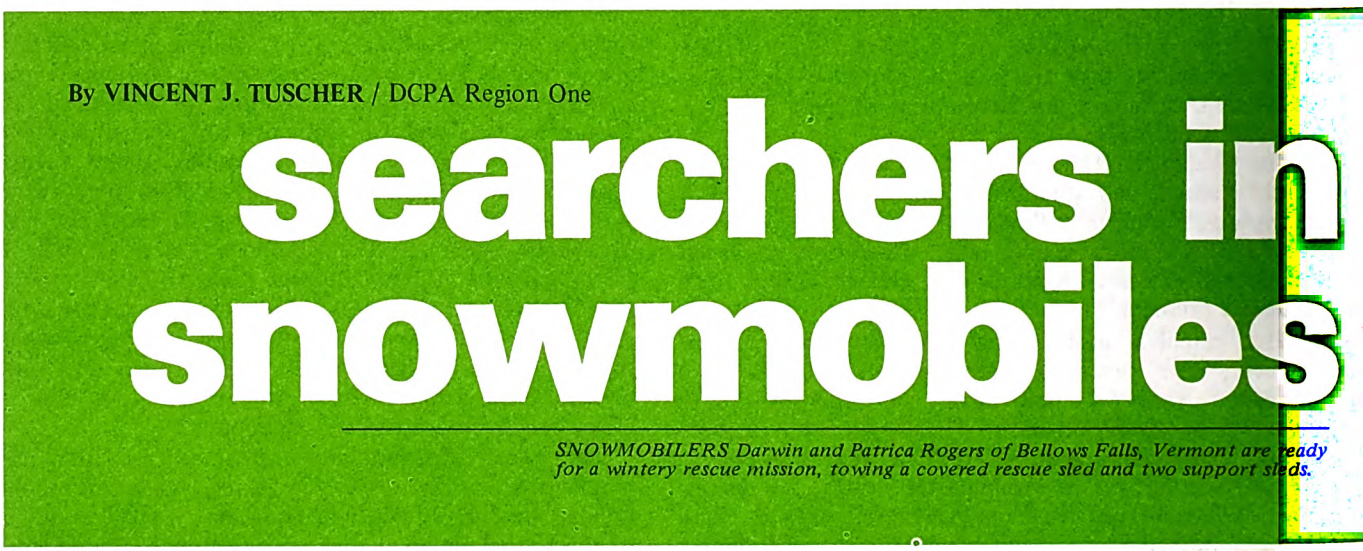
By VINCENT J. TUSCHER / DCPA Region One

searchers in snowmobiles



SNOWMOBILERS Darwin and Patrica Rogers of Bellows Falls, Vermont are ready for a wintery rescue mission, towing a covered rescue sled and two support sleds.

All-season recreational use of public lands, leisure hours, long weekends, and modern interstate highways in the northeast tempt outdoor lovers to taste life in the woodlands, even during the snows of winter.

The increasing use of snow machines on back-country trails, plus the inexperience and sometimes careless attitudes of city dwellers, pose serious problems for search and rescue organizations. But a number of snowmobile clubs are stepping into help meet the need in times of emergency. Examples:

MAINE – Auburn, a south-central Maine city of 24,000 people, quietly boasts of having the first organized volunteer snowmobile rescue organization flying the civil defense banner. Dating back to the summer of 1968, the Auburn Civil Defense Rescue now involves 40 members who operate out of the basement of the Central Fire Headquarters' Emergency Operations Center.

Prime movers of the unit are Jim Allen, Auburn lumber dealer, and Roy Tassinari, shoe counter manufacturer.

Pride of the organization is a rescue sled, built mostly of wood under Jim's direction, which carries a Stokes litter basket for transporting injured persons.

Transport Doctors, Nurses

The unit has responded to the crash of a private plane which killed three people. Snowmobilers brought out the bodies plus parts of the plane. During a Christmas storm four years ago, which blanketed the area with two feet of snow, members of the snowmobile rescue unit transported some 90 doctors and nurses to isolated homes to care for sick people.

Members of the unit are proud that they have never asked the city for financial help or even a drop of scarce gasoline. Four squads of seven men each make up the active team, with one squad held in reserve. All have had medical self-help and first aid training as part of the county civil defense program.

Other snowmobile rescue teams now being formed in the Pine Tree State are located in Bangor, Waterville, and Augusta.

VERMONT – When the Chief Executive of a State is an ardent supporter of snowmobiling, and underscores this by completing a 100-mile tour at the helm of a slipping, sliding, charging snow machine, objections to the sport tend to dwindle. Such is the case in the Green Mountain State, led by Governor Thomas P. Salmon.

State Police Corporal Darwin Rogers recalls when Governor Salmon was first running for that office.

"He talked to a lot of us snowmobilers, especially those who were organized as search and rescue teams in VAST – the Vermont Association of Snow Travelers," Corporal Rogers said. "Back then we had 22,000 members. Guess what his plurality was? Exactly our membership – and we haven't let him forget it, either, in a nice way," he smiled.

VAST, of which Corporal Rogers is vice president, and his wife, Pat, the director for Windham County, now has about 14,000 active members in 240 clubs throughout the State. All have been trained in the operation of snow machines under adverse conditions.

Rescue Squad Formed

In Bellows Falls, where the Rogers live, the Abenaqui Snowmobile Club was formed in 1969 at a meeting in their home. The club now has 148 members, including a 22-man rescue squad. The unit has helped State Police search for lost hikers and skiers, responded to winter airplane crashes, transported bottled gas to isolated homes in snowstorms, rescued stranded motorists from snowbound highways. And in a State where cows outnumber

the humans, it has even gone to the aid of a dairy farmer during a power failure, taking him a small generator so he could milk his 100 cows.

Prodded by club members, Jim Carr, an engineer at Rockingham Memorial Hospital, designed and built a unique sled which can be completely covered with canvas so that an injured person can be protected from the elements. The sled has heavy-duty steel runners and tow bars at either end to use in pulling smaller sleds.

"These smaller sleds can be put in the trunks of cars and taken to the scene of an incident where our rescue squad members can take the clothing and put it over their normal working attire," Corporal Rogers said. "In this way when our call for help goes out, a few of us load up the sleds at the hospital and we meet the others at the scene."

MASSACHUSETTS – The Bay State, which has a total of 55,000 registered snow machines, has 90 registered snowmobile clubs, of which 68 are incorporated with

charters. All the chartered clubs work with their respective police departments during winter emergencies. Many snowmobilers are trained in rescue and first aid, either by the Red Cross or by the State Civil Defense Training Academy at Topsfield.

Respond to Many Emergencies

The clubs have played vital roles in many disaster situations. During a snow storm in the North Shore area, for example, the Northern Lights Club from Hamilton rescued and evacuated more than 500 persons from automobiles stalled on highways, transported nurses and doctors, took essential food and fuel to institutions, and helped utility company repairmen get to the scene of power outages.

In Dunstable, the Snow Drifters Snowmobile Club saved the lives of three skydivers who became lost after landing in a heavily wooded area. Following a call from police, the snowmobilers located the men and took them out to waiting ambulances.

Recently the State legislation has given the authority to local governments to assign the use of snowmobiles on highways during times of emergency.

NEW YORK – Within the New York State Department of Environmental Conservation, the Division of Lands and Forests is responsible for developing a State search and rescue organization and conducting emergency operations. Three regionally located Forest Ranger Search and Rescue Teams have been organized and have received special training. Each team consists of 10 selected volunteer rangers and a team leader.

Special Teams Throughout the State

"The teams are located all over the State, and those guys are good," emphasized Malcolm Douglas, Washington County Civil Defense Director.

"Yes, and they have fleets of snowmobiles," added Mrs. Marie Barbuti, Director of the Northern District for the State Office of Natural Disaster and Civil Defense. "Let's face it, snowmobiles are a necessity in this area. And Director Douglas and Dick Loeben, his chief of civil defense rescue, have laid sound plans to deal with the accident problem."

Director Douglas explained that what he has in mind is a faster response, by trained county volunteer groups, before the State crews are able to get to the scene.

Under Dick Loeben's leadership, a standard operating procedure for snow vehicle emergency services has been developed. The plan has been adopted in the Town of Fort Ann, the largest town in the mountainous county, and with the greatest number of snowmobile trails. The plan of county civil defense officials is to eventually have at least two snowmobilers trained in emergency search and rescue in each town throughout the county.

The facts of LIFE

By JACK H. DUNCAN

Deputy Director
Office of Emergency Services
San Diego County, California

A HAPPY APPROACH TO SERIOUS BUSINESS—Tom McManus, Program Director of KPBS-FM (standing, rear) and Jack Duncan (right) are pleased as Richard Grant, General Manager of KECR, keys the microphone which will activate the LIFE system. (San Diego County photo.)

LIFE is underlined in San Diego County, California. In this most southwesterly of all contiguous counties of the United States, LIFE stands for Lifesaving Information For Emergencies.

In an area where brushfires have seared 175,000 acres in just four days, as happened in 1970, where the entire county is heavily faulted and adjacent to the dreaded San Andreas Fault system, where the arid climate can be broken by torrential rains causing heavy floods, the public will be kept informed by LIFE.

The 1970 Laguna Fire, pushed by "devil winds" at speeds up to 70 miles per hour, destroyed over 300 homes, 1,000 buildings, and untold wild life, caused the evacuation of 1,500 people and had officials standing by to order the evacuation of many more thousands. Starting in the mountains some 40 miles east of San Diego, the fire hit the communities of Pine Valley, Jamul, Dulzura, Descanso, and entered the city of El Cajon. Stopped on the outskirts of San Diego and Chula Vista, the conflagration pointed up the need for better communications with the public.

A Problem of Public Information

The United San Diego County Office of Emergency Services had activated its Emergency Operations Center (EOC) for the emergency, but public information was inadequate. Intelligence data from the fire areas poured into the EOC, but there was no system to disseminate it to the 1 1/2 million people throughout the 4,200-square-mile area of the county.

We wrestled with this problem for some time. Finally, last April I asked all radio and TV station news directors and general managers in the county to meet with me at the Emergency Operations Center to decide on a plan for the dissemination of news during a disaster. Impressed by the communications system within the underground center, the broadcasters decided that the prime news source for the region was definately the EOC. From there, we have two-way radio capability with all 13 incorporated cities in the county, every one of the 36 separate fire departments, every police department, and all county vehicles. The EOC also contains the Emergency Broadcast System station with two broadcast booths.

In the brain-busting session which followed the tour of the facility, Tom McManus, program director of KPBS-FM, asked about using his station's Sub-Carrier Allocation (SCA) frequency. Richard Grant of KECR,

another FM station, said that his SCA also was available. I was in the dark about the technical aspects of the conversation, so the radio people explained that every FM station is allowed another frequency by the Federal Communications Commission. This is the one that carries such programs as Musak. It requires a special receiver to listen to these broadcasts.

During the three-hour conference – the very first one held locally on the subject – all of the basic concepts were hammered out, leaving only the electronic and procedural details for later meetings. The outcome was that a team of professional broadcasters will report to the Emergency Operations Center in response to a radio summons in the event of a disaster. They will transmit vital public information gathered right in the center over the Emergency Broadcast System transmitter, but without activating the EBS system. Instead, a radio signal will turn on the Sub-Carrier Allocation transmitters for both KPBS-FM, which is a public broadcast station on the campus of San Diego State University, and KECR, a noncommercial religious FM station in the City of El Cajon. Although these studios are separated from each other and the Emergency Operations Center by several miles, they share the same transmitter site on Mt. San Miguel, some 8 airline miles south of the EOC.

The two SCA transmitters relay the messages originating in the Emergency Operations Center throughout the entire county where they are picked up on special receivers wired into the control boards of all participating radio and TV stations.

Each Station Has Options

Each station receiving the emergency broadcasts has several options. It can switch over and broadcast directly from the EOC; it can tape the messages and replay them later; it can listen and use its own people to repeat the LIFE broadcasts; or it can chose to ignore the whole thing. KECR's and KEBS-FM's options for their regular programming are the same – only their now unused SCA frequencies will be affected.

In reality, most stations will opt to use some of the emergency broadcasts. Some will devote all of their programming to the disaster, just as they did during the Laguna Fire, but all will have the potential of correct, prompt, official information. In theory, every radio and TV station in the county could be airing the same voice simultaneously.

The LIFE system is not intended to replace any on-the-scene color obtained by media mobile crews. However, non-factual information obtained in the field concerning the overall situation, which is a problem in any disaster, will be largely eliminated by LIFE broadcasts. For instance, a volunteer worker helping in an evacuation can express his opinion that a section "clear to the boarder will have to be evacuated." Repeated into a tape recorder at the scene and broadcast over a radio station, his opinion becomes fact for many listeners and could result in confusion. The LIFE announcer will tell the true story from the myriad of reports available to him.

The LIFE system is using existing hardware except from the special receivers. Because the old and unreliable equipment in the broadcast booths of the Emergency Operations Center was in need of replacement anyway, the County of San Diego has budgeted a complete revamping of the EBS system within the center. The broadcast industry engineers of the region have volunteered to install the new solid-state electronic gear when it arrives. Matching funds have been approved by the Defense Civil Preparedness Agency.

System Costs Held Down

San Diego County will have to buy one Sub-Carrier Allocation frequency generator for loan to KECR and one receiver to patch the LIFE broadcasts into the SCA transmitters. Total expense: less than $1,000. To obtain SCA receivers for participating radio and TV stations, a radio station engineer committee has contacted SCA receiver manufacturers for a quantity-purchase price. The committee is seeking one two-channel receiver to be tuned to the SCA frequency of KECR, the prime LIFE station, with automatic switching to KPBS-FM's SCA frequency if KECR fails. KECR is a 24-hour station while KPBS-FM is off the air from midnight to 6 a.m., hence the choice of prime and secondary stations.

As a side benefit, an inexpensive LIFE receiver, turned on only by tonal coding from the Emergency Operations Center, could be put into the office of every official in the area who desires one.

We hope our LIFE system will never be needed. But if it is, the system can be operational within 15 minutes. And the citizens of the county will be kept informed, advised of steps to take to help themselves, and told what their government is doing to ease their plight.

These are the facts of LIFE in San Diego County.

SAN FRANCISCO GETS READY

By VERNE PAULE DCPA Region Seven

The colorful City of San Francisco is sometimes called "Baghdad by the Bay." It is also world famous for its sourdough bread, Fisherman's Wharf, Chinatown, cable cars, the "crookedest street in the world," its restaurants – and its 1906 earthquake whose 68th anniversary will be observed this April 18.

The "vibes" from that quake are still being felt. Hopefully they are "good vibes," says Edward P. Joyce, the Director of the San Francisco Office of Emergency Services.

New Plan Gets Attention

Joyce is constantly reminded about the devastation, fire, casualties, and tremendous property losses that resulted from the earth's rumbling catastrophe that nearly wiped out the famous City by the Bay. However, the reminders today come in news coverage of the City's new Earthquake Response Plan that has attracted attention from as far away as England and from a number of cities in the United States.

The *San Francisco Examiner*, on December 19, 1975, flashed a banner headline across its front page, "New Quake Plan for S.F." And the British Broadcasting Company interviewed Joyce by satellite for a talk show on earthquakes. Wire services, network radio and TV, *New Yorker* magazine and the *Boston Globe* sent reporters to interview Joyce about the city's new earthquake planning.

The planning for San Francisco's next earthquake, should it occur, began earnestly when Joyce became the Director in 1969 and after the February 9, 1971, Los Angeles area earthquake. The former Office of Emergency Preparedness contracted with the National Oceanic and Atmospheric Administration to develop "A Study of Earthquake Losses in the San Francisco Bay Area." This study was published in 1972. It identified the type of losses and devastation that would occur if earthquakes of 6, 7, and 8.3 magnitude on the Richter Scale would hit the Bay Area.

This study was followed by a contract between the California Office of Emergency Services and OEP to develop the Bay Area Earthquake Response Planning

Project. Professional planners funded by the Federal government plus planners from OES State agencies and the Defense Civil Preparedness Agency began the effort.

Joyce was a member of the Steering Committee composed of representatives of nine Bay Area counties and the cities of San Francisco, San Jose, and Oakland. Earthquake Planning Guidance was produced in January 1974 for the use of the nine Bay Area Counties.

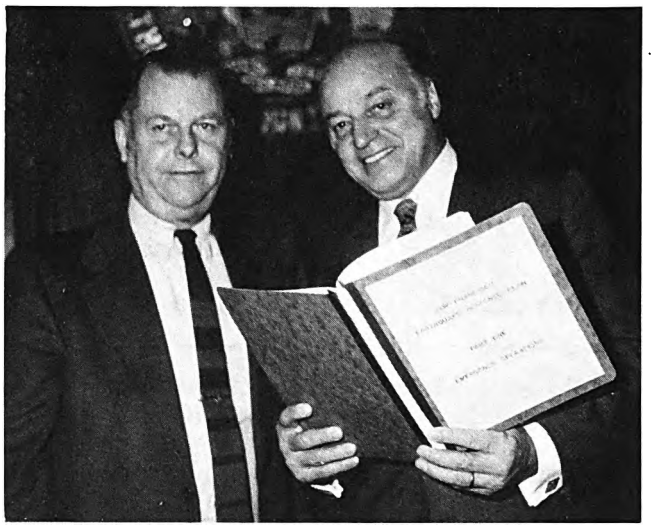
Assets, Liabilities Identified

As the San Francisco plan developed, a study of the assets and liabilities was identified. A big asset for emergency operations is the fact that San Francisco consists of

SAN FRANCISCO BURNS after the great 1906 earthquake.

a joint city-county government. The primary liability identified is the lack of a viable Emergency Operations Center (EOC) – a protected communications facility that is planned and equipped so that chief executives and their key officials, through a close coordinated operation, can meet the emergency responsibilities of government.

Joyce says, "San Francisco has an EOC but it is minimal, and a concentrated effort is being made to eventually build one which will serve the City in the dual-use capacity for a '911' emergency telephone number center and an EOC." He added that, since an earthquake may strike before an EOC is built, "it was necessary to develop an Earthquake Response Plan that recognizes this shortcoming."



SAN FRANCISCO MAYOR Joseph L. Alioto (right) with Edward P. Joyce, Director of Emergency Services.

Prior to the development of the Earthquake Response Plan, it was necessary for San Francisco to update its Basic Emergency Operations Plan. This plan, Joyce points out, "enumerates the legal basis for its development, defines the emergency organization, provides the concept of operations, and assigns missions and tasks for the elements of the emergency organization to carry out in a disaster operation." The Earthquake Response Plan is one of four contingency plans in the Operations Plan. Other contingency plans include "War Emergency," "Emergency Evacuation" (from reservoir inundation areas), and "Oil and Hazardous Materials Pollution."

City Divided Into Zones

Current emergency plans for San Francisco divide the city into four planning zones. Zone 1 encompasses the military facility known as the Presidio of San Francisco, controlled by the military. Zone 2 boundaries include the Navy's Treasure Island and Yerba Buena Island, controlled by the Navy. Zone 3 sets apart the Bay Area Hunter's Point Shipyard complex and puts it under Federal control. Zone 4 is recognized as the rest of the City and County of San Francisco which is divided into 10 districts comparable to the 10 Battalion Fire Districts utilized by the Fire Department on a daily operational basis.

Joyce says, "Our studies indicate the Fire Department will probably bear the brunt of a major earthquake in San Francisco and, therefore, require the support of all emergency-oriented services in a crisis situation. The Fire Department Battalion Chiefs will direct operations at the district level where they are most familiar with emergency operations on a daily basis."

As the study and plan evolved, Joyce pointed out, the need for emergency facilities within each district become

(concluded on page 29)

Your 'Help' can hurt

By WALTER D. HYLE, JR. / President, United States Civil Defense Council

Mr. Hyle, President of the United States Civil Defense Council, the national organization of local civil defense officials, is also the Director of Civil Defense for Baltimore County, Maryland.

To anyone responsible for effective response in a disaster, one of the most useful messages to receive from a disaster area goes something like this: "Send all possible aid!"

It's always an urgent message, frequently an emotional one. But it's useless because it lacks one critical element: the *specifics* on what is needed.

Useless and Damaging

I'll take it one step further. Not only is the "send all possible aid" message useless, it's also a damaging message. Damaging because of the results. Here's what happens all too many times:

Food, medicine, and clothing of all types are sent to the disaster area – tons of material, much of it not useful in the recovery efforts.

Transportation units are tied up to move the "all possible aid" supplies to the stricken area.

Storage locations in the emergency area – storage spaces that may be scarce because of the disaster damage – are overwhelmed with unneeded materials.

Because the emergency "aid" is put together in a hurry, the odds are it isn't sorted, packaged, or marked properly. People on the receiving end must then spend hours, days, weeks going through it to find out what they hare received and how it might be useful.

Long after the disaster, the stricken area may be faced with the problem of what to do with tons of unused material.

The fact is that, unless carefully handled, supplies rushed to a disaster area can become a disaster themselves. Or to put it another way, your "help" can hurt.

An International Problem

Sometimes the problem crops up even if no message is sent to "send all possible aid." Sometimes the lack of any information from a disaster area creates a spontaneous reaction on the part of people who want to help. But the result can be the same. And the problem is certainly not limited to disasters in the United States. It's an international problem, one that received considerable attention at the First International Conference of the United States Civil Defense Council held last fall in Puerto Rico. The conference was attended by representatives of Canada, Chile, Ecuador, Guatemala, Jamaica, Mexico, Nicaragua, Peru, Trinidad-Tobago, Venezuela, and the United States.

The problem of effective response to disasters was given special emphasis at the international conference during a panel discussion on "Resources in Disaster." Karl L. Mahler of the State Department's Office of the Foreign Relief Coordinator in the Agency for International Development (AID), cited some of the findings by Charles Fritz of the National Academy of Sciences:

"A central problem of coordination and control in disaster derives not from the victim population but from the informal, spontaneous 'convergence action' of persons living outside the disaster area. Contrary to the popular image of behavior in disasters, movement *toward* the disaster area is usually . . . more significant than flight or evacuation from it. Within minutes after most disasters, persons begin to converge on the disaster area . . . Shortly afterward, tons of unsolicited equipment and supplies of clothing, food, bedding, and other material begin arriving in the disaster area or in nearby relief centers. The process continues for days and weeks following a disaster, as wave upon wave of people send messages and supplies."

10,000 Frozen Pizzas

The difficulty with these relief drives, Mr. Mahler pointed out, is that well-intentioned people collect supplies they *think* might be helpful in the absence of reliable information on the real priority needs. Medicines? Perhaps. But the specturm of medicines stretches all the way from asprin to exotic "wonder drugs." Food? What kind? One would-be donor wanted to send 10,000 frozen pizzas to a country that had little refrigeration even under non-disaster conditions.

If local community agencies know the specific needs of a disaster-stricken area, they are in a much better position to organize an effective response. For example, the mayor of a Louisiana city asked the State Department's Agency for International Development what the city could do for

Honduras disaster victims. On the basis of information from the American Embassy, he was told that the real needs of the Hondurans were for beans, rice, corn, and vegetable oil, packed so that they could be transported easily and not require repacking for local distribution upon arrival at the disaster scene. Also, AID suggested the vegetable oil be put into one-gallon plastic containers which, after emptied, could be used to carry water or other liquids.

The suggestions were followed, and the result was that hundreds of hungry people in San Pedro Sula, Honduras received food they needed and could use immediately. What a difference between this plan of helping and the unplanned solicitation of unneeded used clothing and other materials that are difficult to distribute and expensive to transport.

Basic Guidelines Listed

While it is difficult to pinpoint the exact resources that will be needed in a disaster before it happens, it is possible to set forth certain guidelines that are generally applicable to most disasters. For example, the State Department's Office of the Foreign Disaster Relief Coordinator offers the following five basic points:

(1) When a disaster occurs, foreign governments seldom need many volunteers to go to their country to assist. This includes medical and para-medical personnel.

(2) It's much better to give money, earmarked for the specific disaster, to your favorite charitable agency which may have field staff already operating in the country in which the disaster has occurred.

(3) The donation of used clothing or typical American canned goods may not be useful to the disaster sufferers and are costly to transport to the disaster area.

(4) If local civil defense directors can become the focal point for the coordination of relief supplies, the community response can be come a structured response. Local directors can get information from their State civil defense directors on the specific needs in a disaster area, and coordinate local response to meet those needs.

(5) Finally, don't wait for the next disaster to strike. Contact your community agencies now and inform them as to how they can be most helpful to others when disaster strikes.

One of the direct results of the discussions at the conference in Puerto Rico was a decision to have knowledgeable people from such organizations as the U.S. Civil Defense Council, the Department of State, the Defense Civil Preparedness Agency, and the American Red Cross develop guidance for State and local civil defense directors on effective handling of supplies for emergencies. We hope that this guidance, when issued, will help ensure that the *right* kind of disaster resources are effectively collected and sent to the *right* places at the *right* time.

(continued from page 17)

Confusing to the public

SALESGIRL: Said the word meant "the head of everything" but could neither spell nor pronounce it.

NURSE: Pronounced and spelled the word correctly. Definition: "One who has a variety of responsibilities."

SECURITY GUARD: Knew the word but could neither spell nor pronounce it. Said, "I know it has two o's. It means somebody that gets a lot of details together. Like in the Optimists Club, a fellah that gets everything ready for a meeting."

WAITRESS: Pronounced the word "corrinator." Could not spell it. Said she had no idea what it meant.

SECOND BUS DRIVER: Pronounced the word properly, but could not spell it. Said, "It means to match up things, like clothes."

TEACHER: Teacher spelled and pronounced word correctly. (No surprise.) Said, "It means to arrange things in a time sense."

CD VOLUNTEER: Spelled and pronounced word correctly. Definition: "A coordinator works under a Director."

NEWSPAPERMAN: Spelling and pronunciation correct. Definition: "One who blends a sequence of events so that they occur at the most ideal time."

HOUSEWIFE: Knew the word, but spelled and pronounced it "cordynater." Said, "It means putting the right colors together, like when you decorate a room."

SECRETARY: Spelling and pronunciation correct. Definition: "One who oversees something."

MINISTER: Pronunciation and spelling correct. Said, "Well, I use it all the time but I can't say I every really tried to define it. I guess you'd say it's a person who ties related things together to achieve some kind of unity."

CB OPERATOR: Could pronounce the word but spelled it "cornadiator." Said: "A coordinator is somebody that gets the groups together in a disaster so a Director can direct them."

COUNCILMAN: Could spell word correctly. Said: "Definition? Well, it's like this. In order to get a job done there has to be a head rinkydink that appoints qualified people to handle the project. He's the coordinator."

MECHANIC: Could not spell or pronounce word but knew it. Said: "We used to call our supervisor The Boss Man. *Now . . . lah-de-dah . . . he's a kordnator! Nuts.*"

No doubt many directors would agree.

(continued from page 25)

San Francisco gets ready

evident and have been identified and planned for use as follows:

DISTRICT HEADQUARTERS – A centralized facility within the district, with communications to the City Emergency Operating Center.

MULTI-PURPOSE STAGING AREA (M.S.A.) – A pre-selected location having a large parking area and shelter for equipment and operators; a rally point for mutual aid coming into the district; a staging area for post-disaster support and recovery activities.

MASS CARE FACILITY – A location such as a school or part of a M.S.A. and from which lodging, feeding, clothing, registration, welfare inquiry, first-aid, and essential social services can be provided to disaster victims during the immediate post-disaster period.

CASUALTY CARE FACILITY – A major first-aid and medical facility which provides triage (sorting of the injured), medical transportation, hospitals, and first-aid stations.

Designation of these facilities has been made in the 10 districts throughout San Francisco.

Each of these 10 districts is tied into one more of the 24 carrier-route postal districts – postal zip zones – so citizens who might otherwise be confused about boundaries know where to find service points for supplies, food, clothing, and medical care. Thus, each district area has its own Headquarters, Multi-purpose Staging Area, Mass Care Facility, and Casual Care Facility. The newspapers have published these locations.

Mayor Signs Aid Agreements

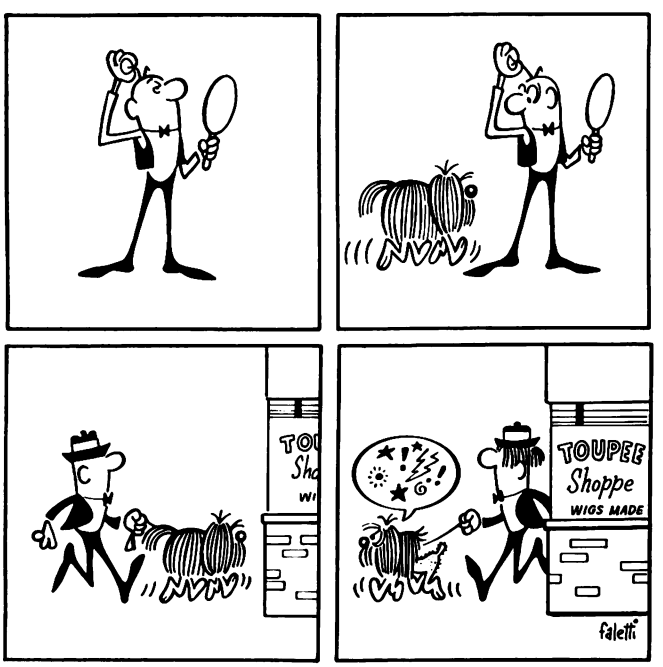
To assist local governmental departments and supporting agencies in carrying out their emergency assignments, a number of agreements have been negotiated and signed by the Mayor, including agreements with the National Defense Transportation Association, Civil Air Patrol, Sheriff's Air Squadron, Engineering and Grading Contractors, and the U.S. Army Corps of Engineers.

Joyce envisions communications to be a major problem with the anticipated loss of telephones. A direct "hot line" system has been provided by the Northern California News Directors from the primary and first alternate Emergency Operations Center to the five San Francisco television stations, Associated Press and United Press International wire services, and the California Highway Patrol in San Francisco and Oakland. This "hot line" is to provide emergency instructions to the public via the electronic media, Joyce said. In addition, the Radio Amateurs Civil Emergency Services (RACES) volunteers and 75 Citizen Band Volunteers serve as backup communication facilities.

Emergency Purchases Planned

Joyce says that, in a major earthquake situation, normal ways of operating must be bypassed. To speed up the process of purchasing in disaster situation, the Purchasing Department has printed Emergency Purchase Order forms and placed them in five locations throughout the City. Purchasing Agents have been given emergency assignments at these locations. "In this manner," Joyce points out, "we can identify emergency purchases, satisfy the vendors that payment will be made, and provide positive proof where Federal reimbursement is possible."

San Francisco Mayor Joseph Alioto commented on the Earthquake Response Plan, saying, "While much has been accomplished, much still needs to be done. This is the nature of viable emergency planning. If a plan is 'cast in bronze,' it is worse than useless. Such a plan lulls local government officials into a false sense of security. I am extremely pleased with the leadership Ed Joyce and the City departments have given to the development of this plan. I am already getting 'good vibes' from it, and hope they are the only vibes we get in San Francisco."



From the Press

Here's a digest of news items on civil preparedness topics:

CP IN ACTION – Otken Elementary School in McComb County, Mississippi was badly damaged in a tornado on January 10. But the children had been warned and moved to designated shelter areas. Said Principal Monier in a TV interview: "We used the emergency plans and they saved lives." ... In the same tornado disaster, the Pike County School Superintendent told newsmen: "We moved the children to the safe areas according to our plan and this saved several lives." ... In Lee County, Mississippi, Plantersville High School was also hit by the January 10 twister. One student was injured – he turned his ankle rushing to get to shelter! Thanks to the school's shelter plan, there were no other injuries according to news reports in Jackson; but a reporter noted, "The Otken School had a plan to take shelter prominently posted in the corridors. These are missing in the Jackson schools..." The *Minneapolis Star* reported that "For $25, Minneapolis-St. Paul International Airport has acquired a 200-bed hospital which would be set up to provide for the immediate treatment of casualties in an aircraft accident." The former civil defense hospital was acquired from the Minnesota Department of Emergency Services... "Elderly persons and people with low or fixed incomes who are having trouble this winter getting fuel to heat their homes are now able to seek assistance from the (Rockingham) County Civil Preparedness Office," Director Jerry Wallace announced. The office acts as a referral point to the State energy office. (*Eden News*) ... Raymond F. Adams, director of York County's (S.C.) Civil Defense Office, is backing a plan to use a packaged disaster hospital for day-to-day health needs in the western part of the county, and is seeking approval of the State Health Department for the idea (*Herald*, Rock Hill).... The *Newspaper*, Wahoo, Nebraska, reports that "Much of the credit for the installation of the new radio system at the Saunders County Community Hospital must go to Don Cerny, County Civil Defense director." Cerny was instrumental in obtaining federal matching funds for a mobile base station... "Official government radiation kits were presented to 29 police-fire-emergency officers of Wells and Adams Counties following a two-week, 16 class-hour training course arranged under Civil Defense." (*Bluffton News*, Indiana)... Edward S. Hoyt, Sarasota County (Florida) civil defense director, inaugurated the first direct emergency line from the Civil Defense offices in the courthouse to home television screens. "The 'hot-line' telephone is activated by the sound of the human voice which is simultaenously broadcast on the Channel 4 Weather Station of Storer Cable-TV," reports the Sarasota *Journal*...

WARNING SIRENS – "The City Council has appropriated $77,000 from its surplus funds to pay for (11) sirens and their installation," reports the Danville, Illinois *Commercial-News*. "Later the city will be reimbursed for half the amount by the Federal government," the account notes. Civil Defense Director Earl Winland said the sirens will be delivered in late February or early March." The push to get the sirens installed came after a tornado did extensive damage in the Bismark area last year," according to the newspaper... Rochelle (Illinois) residents may feel a little safer when turbulent spring strikes next spring, says the *News*. Civil defense warning sirens have been received and will be mounted around the city "before spring storms hit," Fire Chief Bill Lower and Civil Defense Director Gil Vandre told the *News*... "A new siren was installed in Bertrand (Nebraska) last Wednesday afternoon," the *Herald* reported (with photo). The item notes that the siren was financed on a 50-50 basis through the civil defense office at Lincoln....The *Enterprise*, of Beaumont, Texas, reports: "The board of alderman Monday authorized Mayor Wilridge (of Westlake) to enter into an agreement with the Federal government for a siren system in town. The system, to be installed under Civil Defense guidelines, will be financed by matching federal funds," the news account notes.

ATTENTION TO PLANNING – Reports the *Louisville Times*: Local officials could have reacted more efficiently to the April 3 tornado if they had a better disaster plan, practice in disaster operations, a chain of command appointed in advance, and a clear understanding of the emergency duties and relationships of elected officials, government agencies and the Louisville-Jefferson County Civil Defense Office. These conclusions, notes the item, along with 22 suggestions for improvement, came from an evaluation by a team of Federal and State outside experts. The account reports details on suggested improvements...."The capacity of Ingham County (Michigan) officials to handle a major disaster will undergo an evaluation and upgrading over the next 12 months," the Lansing *State Journal* reports. Lt. Robert Cade, director of the emergency operations division of the Ingham County Sheriff's office, told the *State Journal* the year-

long program will be capped by a simulated disaster designed to show the strengths and weaknesses of the emergency operations system. . . ."Disaster planning is like a will – everyone knows it's necessary but no one wants to talk about it," notes Barry Temkin in the *Times*, Mt. Prospect, Illinois. He reports that "four hazard analyst officers from the Illinois Civil Defense Agency and the Defense Civil Preparedness Agency have spent over a month studying local readiness in an On-Site Assistance program." He said the team's report will probably recommend using matching funds to increase civil defense personnel. Analyst James Gire told the *Times* that "any community containing over 26,000 people should have a full-time civil defense director or some additional assistance." . . . "If planning proceeds on schedule, Johnson County (Indiana) will have a comprehensive disaster 'plan of action' by the end of January," notes the Franklin *Daily Journal*. Steve Vencel and Dr. Robert Piercy of Indiana University are working with local officials in an On-Site project for the county. . . .An all-out effort will be started by the County Commissioners to make Citrus County (Florida) less vulnerable to hurricanes and other natural disaster, says the *Suncoast Sentinel*. Chairman Ralph Rooks announced that personnel of the State Division of Disaster Preparedness and of the Federal Defense Civil Preparedness Agency have been invited to work with the county commissioners on a study of capabilities, needed improvements and a plan of action for upgrading civil preparedness in the county. . . . Reporting from Washington, D.C., Guy Halvorsen of the *Christian Science Monitor* writes that "the Defense Civil Preparedness Agency is through with the first phase of a study on relocation of population (in the event of emergencies). It is starting on a second phase, involving logistics, stockpiling of food and other services involved in relocation. "While officials of the agency stress that the plan is only a study (that must be approved by John E. Davis, director of the agency, before going to Defense Secretary James R. Schlesinger), it is considered significant that the current issue of FORESIGHT. . has a four-page article on relocation by Davis."

EDITORIALLY SPEAKING – On Crisis Relocation Planning: "Civil Defense is doing a job, one which may prove valuable in time of natural disaster, if not in a nuclear catastrophe. The self-preservation instinct can't be denied." (*Union*, Springfield, Massachusetts). . . .On preparedness: "Mankind may be more susceptible than in the past to natural catastrophes. With the world's population increasing geometrically, the likelihood that a natural catastrophe may strike a populated area likewise is increasing. And as mankind's life support system grows increasingly tenuous because of overpopulation and environmental destruction, this life support system becomes increasingly prone to disruption. . .We can do little to prevent (disasters) but we can do a great deal more to prepare for them." (*Baltimore Sun*). . . .On the need for disaster planning: "It develops that Pinellas (Florida) indeed does have a disaster preparedness plan. . .but little is known about it. . . .It is vital that all citizens of the county be made aware of such things as where to go, what to take, who to look to for help, and who has the authority to make decisions. . . .We hope the new (planning) group formed last week will use every means at its disposal to achieve this goal. . . ."

THE GLOBAL VIEW – The *Washington Post* carried a Reuter's report on Switzerland's national defense system describing the country's civil defense preparations as a "model for the world." The story notes that about 50 percent of the population have home fallout shelters, and the rest are served by public shelters in underground garages and warehouses. New buildings, the report continues, "must include shelters built to government specifications, and households must have two months supply of provisions." . . ."Professor Bernard T. Feld, secretary general of the Pugwash Conference on Science and World Affairs, says 'the odds are around three-to-one that a nuclear weapon will be used in a conflict situation before the year 1984 and that the chances are greater than 50-50 for nuclear war to occur in this century.'" (*Defense Space Business Daily*). . . John Burns of the *Toronto Globe and Mail* reports from Peking: "A 383-page handbook on warfare which has just appeared on the bookstands contains the first published information on nuclear weapons and how the average man can protect himself against them." The handbook is one of a series published for use as texts by young high school students and university graduates. . . ."Defense Secretary James F. Schlesinger announced Tuesday (Jan 14) the Soviet Union has put in place its first multiple warhead missiles – the SS-18, the largest ICBM in the world," *UPI* reported. "The SS-18 can carry eight warheads and has a total payload of 15,000 pounds. The largest American missile can carry 10 much smaller warheads and has a throw weight of only 1,200 pounds," *UPI* notes. . . .The real question is whether the United States wishes to maintain that military balance. If we are going to disarm as a nation and accept second class status as a military power, we should do so consciously rather than allowing the continual erosion of purchasing power of the Department of Defense to drive us into second class status. Further reductions cannot be taken in the defense budget without a drastic effect on the worldwide role of the United States." (Secretary of Defense Schlesinger in the *Boston Globe*). – **Joseph V. Quinn.**

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Winging in the Help

Disciples in disaster relief

The Mennonite Church

Certain religious groups in the United States have organized themselves to provide timely assistance to the victims of major disasters. This is the first in a series of special FORESIGHT reports on these disciples in disaster relief.

By C. NELSON HOSTETTER
Executive Coordinator
Mennonite Disaster Service

Months after the disasters struck, Mennonite Disaster Service Volunteers were still active in Xenia, Ohio; Louisville, Stamping Ground, and Albany, Kentucky; northwest Alabama; and northern Honduras. It takes a long time to pick up the pieces after a natural disaster like the tornadoes that whirled through central United States last Easter, and the hurricane which struck northern Honduras in September.

After a natural disaster such as a flood, earthquake, hurricane, or windstorm, the Mennonite Disaster Service (MDS) is on the scene helping to clean up and sometimes distributing material aid in the form of clothes or food to the victims. But not all volunteers pack up and go home after the excitement subsides and the immediate cleanup is finished. Some MDS volunteers take leaves of absence from their jobs and leave their homes for two months, six months, sometimes a year, to do permanent repair work for handicapped or elderly victims and participate in long-term construction projects for low income, disadvantaged, or minority families, or for widows.

400 Homes Rebuilt in Honduras

In Honduras, MDS-recruited personnel are supervising the construction of over 400 houses for low-income victims of Hurricane Fifi. A team of seven young men skilled in building trades is traveling in the areas of central United States struck by tornadoes last spring. They have volunteered their time for six months. A group of Mennonite students from Bethel College, North Newton, Kansas, spent three weeks in January helping with lingering disaster-caused construction problems in Xenia.

What is the Mennonite Disaster Service? When did it start and where does it get its volunteers? Mennonite Disaster Service began in the heart of tornado country in south-central Kansas in the spring of 1950. Two adult Sunday school classes from local Mennonite congregations began to organize as a result of their concern for victims of natural disasters. Throughout the 1950's congregations began organizing into statewide or proviencewide units throughout the United States and Canada as the need arose. Pennsylvania organized in 1955 when it was struck by the Stroudsburg floods.

Units formed along geographic lines. In Minnesota, where Mennonites are concentrated in the extreme north and south, two units formed. At Kalispell, Montana, one congregation maintains its own unit because it is 350

miles away from the nearest Mennonite church. The State of Pennsylvania has six units because of its large concentration of Mennonites. Three eastern Tennessee units joined the North Carolina unit because they were closer to it than that of their own State.

Thousands of Workdays Volunteered

During the decade of the sixties, Mennonite Disaster Service had been averaging 1,500 volunteers putting in up to 7,000 volunteer days a year. When Hurricanes Celia and Camille stormed through the Gulf area in the late sixties, these figures doubled. In 1972, "the year of disaster" – when heavy floods wiped out areas in and around Rapid City, South Dakota, and Buffalo Creek, West Virginia, and Hurricane Agnes ravaged Pennsylvania and New York – Mennonite Disaster Service volunteer response ballooned to 56,000 days of labor. The following year floods along the Mississippi, lasting as long as five months, resulted in 19,000 days from Mennonite Disaster Service volunteers. Six or seven small resettlement and outpost communities in South Carolina organized a State unit after tornadoes hit in 1973.

Mennonite Disaster Service is a part of the larger Mennonite Central Committee, a relief and service agency which has agriculture, education, and health programs in 50 countries. It currently involves over 1,800 Mennonite and Brethren in Christ congregations which are divided into 270 zones, 49 units, and 5 regions. It is basically a grassroots operation with a community service emphasis. The paid staff totals one person; all others volunteer their time. International, national, and regional organizations are maintained to serve a supportive and coordinating role rather than an administrative role. No orders come from the top, only guidelines for program planning and project operations.

Organization Starts in Each Congregation

Each individual Mennonite congregation elects or appoints a person to serve as a Mennonite Disaster Service contact person. Five to eight congregations form a zone, each of which has its own contact person with whom the unit coordinator communicates. Units are grouped along geographic lines into regions of which there are five in North America. In case of a disaster, telephone calls filter down through this network to the local congregational contact person who begins recruiting volunteers from his congregation.

MENNONITE VOLUNTEERS work in cleanup operations after the tornado that smashed into Xenia, Ohio.

MCC photo by Jan Swartzendruker

Disciples in disaster relief

The governing body of Mennonite Disaster Service is the Mennonite Disaster Service section which has 16 members representing major Mennonite groups and includes the five regional directors. The section meets twice each year, and elects an executive committee of five from among themselves to meet three to five times a year.

When a major disaster strikes, an investigator is sent to tour the area and survey what kind of damage has been done and how extensive it is. He then phones in his recommendations for recovery operations. Project leaders are appointed and local contact men begin gathering volunteers. Volunteers living close to the disaster area commute, while other groups come for several days or a week or more at a time.

Mennonite Disaster Service considers its main mandate to be domestic disaster recovery in the United States and Canada, but disasters overseas have called the agency into action 14 times in its history, the most recent being Hurricane Fifi in Honduras. For overseas programs, Mennonite Disaster Service sends only reconstruction leaders with language proficiency and previous experience in the country with the Mennonite Central Committee or a Mennonite mission board. Nationals are hired to do the rebuilding, a policy which not only provides houses but also jobs for those who are unemployed due to the disaster.

Cooperation With Other Groups

Mennonite Disaster Service perfers not to compete with other agencies and tries not to duplicate services. Often Mennonite Disaster Service cooperates with Red Cross during the emergency cleanup and immediate repair stage. Red Cross provides casework clearances, some survey service, and food and lodging for volunteers. Longer-term recovery operations, such as those now under way in Honduras and central United States, are often carried out in cooperation with local community groups, inter-church organizations and, at times, Lions' International which maintains a disaster service department.

Many Mennonite Disaster Service volunteers live in rural areas and work in agriculture. They have experienced an intense work ethic for their entire lives. As they have been crowded off the farms by industrialization and urban sprawl, they have moved to such pursuits as carpentry and construction, giving Mennonite Disaster Service a resource of hard workers and craftspeople. In action, they assist not only in cleanup and rebuilding, but also try to strengthen spirits and improve lives. Their concern is for the psychological and spiritual needs of those they help as well as the physical needs, and they are motivated out of a Christian love for the whole person.■

EMERGENCY

A Television Station Acts

The visual impact of television is felt daily in more than 68 million American homes. But sometimes the messages television stations broadcast – especially spoken messages – fall on deaf ears. Literally. And this can be a key gap in getting emergency information to many people.

A television station in Florida has taken action to bridge this gap.

WLCY-TV, the ABC-TV affiliate serving the greater Tampa-St. Petersburg area, has introduced a special weather-warning bulletin production designed especially to serve the deaf.

The station produced a series of generic video taped announcements, 30 seconds in length, utilizing a split screen. One half of the picture graphically shows the printed weather advisory in Spanish. A woman is seen on the other half giving the same announcement in sign language understood by the deaf. Simultaneously, the bulletin message is read in English by an announcer.

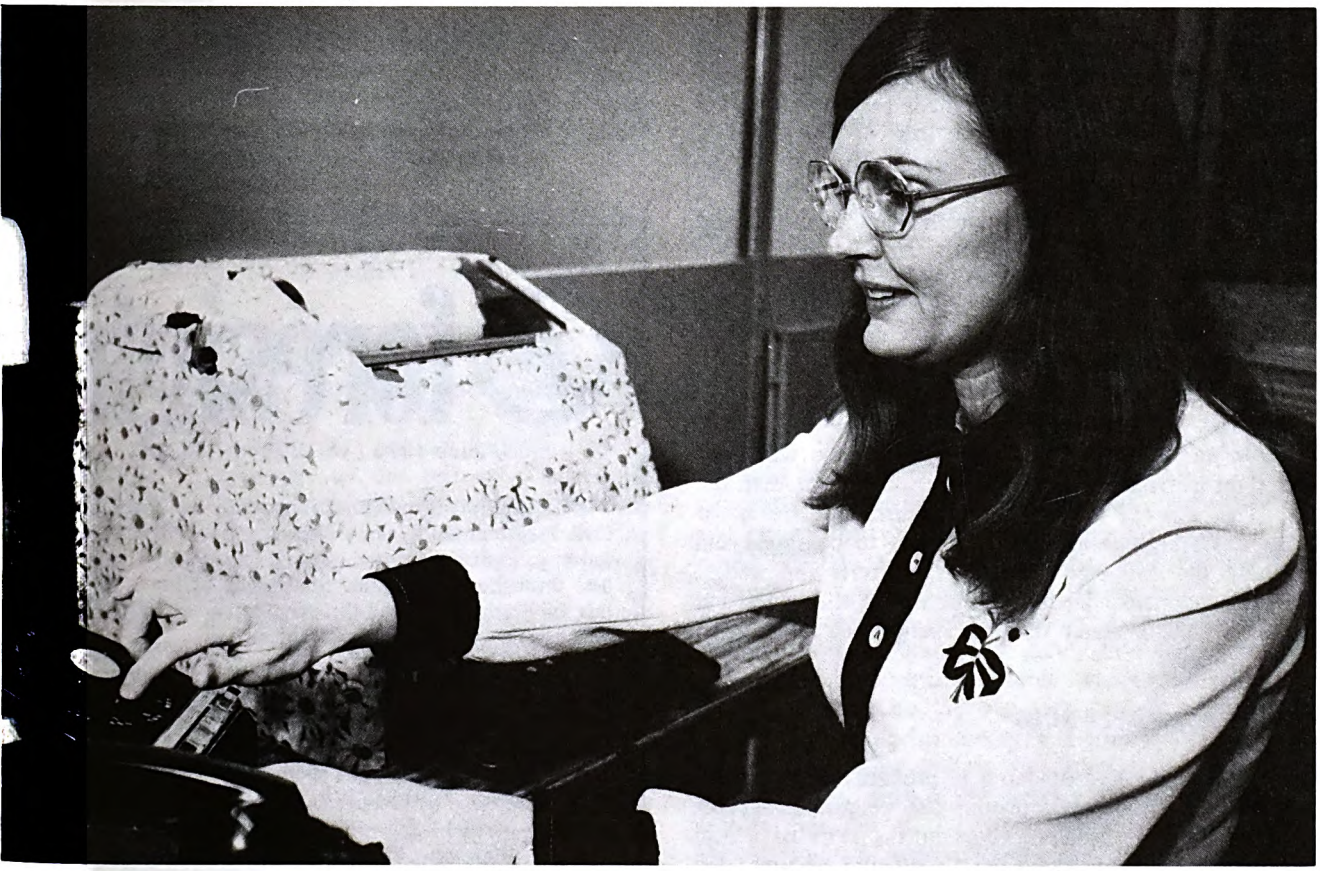
Initially, the station designed the series to aid the deaf. But with a large Spanish-speaking population in the Tampa Bay Area, the English written text was changed to Spanish. At the conclusion of each video taped message, the specific counties affected by the weather advisory are alerted by an additional live announcement and visual slide with printed names of the counties concerned. The series produced by WLCY-TV covers every type of weather warning possible within the station's viewing area.

Sid Perry, WLCY-TV promotion manager, said a letter received from a woman who has a deaf sister was indicative of the type of viewer reaction the station has received as a result of the new service.

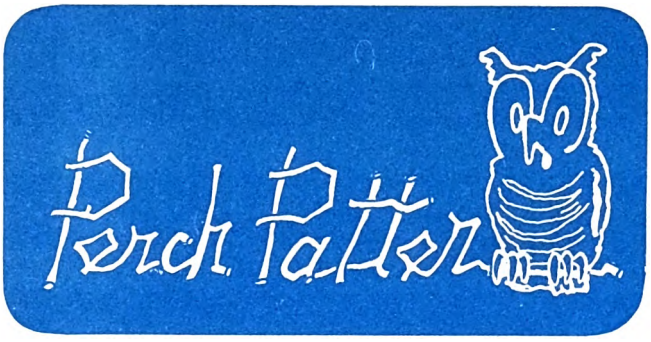
"Thank you so much for having sign language on your weather alert," the woman wrote. "Having a younger sister who is deaf, I have been saying what a good idea it would be to have something for the deaf on weather alerts. . . . Knowing that the deaf people in our area are getting this much attention from one of their television stations gives me hope for the future."

MESSAGES FOR THE DEAF

A Computer Center Acts



A TELEPHONE-TELETYPE DEVICE at the Defense Civil Preparedness Agency's Computer Center near Olney, Maryland enables Mrs. Wanda Rafiq and two other deaf employees of the Center to "talk" between home and office or with other deaf persons anywhere equipped with the same device. The three staff members, all mathematicians and computer programmers, can "talk" on the telephone by dialing another similarly equipped telephone which "rings" with a light, and then communicate with the other party by typing out messages on the two-way teletype, shown in the background in this photograph. The electrical signal produced by the teletype is sent via the telephone mouthpiece in a series of high-pitched beeps through an electronic converter box, then turned back into electrical impulses at the other end of the line by a similar converter, and printed out on the teletype. The special hook-up, which costs only about $180, makes use of a standard electrical outlet and normal telephone except for the "ringing" light. The equipment, owned by the deaf employees, enables them to call the Computer Center and makes it possible for the Center to reach them quickly in an emergency. ■



It's spring and we expect rainshowers, but traveling on wet roads can bring a very unexpected sensation – called *hydroplaning*. Front wheels not responding, loss of traction, loose steering wheel – these are some of the descriptions victims have used. They weren't talking about ordinary skidding on rain-soaked roads but something far more frightening – a complete loss of steering and traction as if their cars actually began to float on the water-covered pavement.

There are two types of hydroplaning: dynamic and viscous. Here are some tips from the National Safety Council to help take such unfortunate surprises out of your springtime travel:

DYNAMIC HYDROPLANING

As a tire displaces stationary water on a highway, hydrodynamic pressures build up a wave-like wedge of water right in front of the tire's point of contact with the road. *The size of the wedge increases as the speed increases.* Water, like all liquids, refuses to compress and eventually the tire can no longer penetrate the wedge. When that happens, the tire climbs up on the water and rides on it like a water ski. All traction, all steering, all control are lost.

VISCOUS HYDROPLANING

While dynamic hydroplaning is primarily a high-speed phenomenon, viscous hydroplaning also plagues low-speed, in-town driving. It usually occurs at the start of a rain shower when the raindrops mix with the accumulated dust and oil on the pavement to form a slippery film. Even fog or dew can be enough to contribute to viscous hydroplaning.

FACTORS AFFECTING HYDROPLANING

The speed at which a tire will hydroplane depends on the depth of the tire grooves, the tire's design, and the inflation pressure. Tire grooves channel water out from underneath the tire to help maintain good contact between the tire and the pavement, and deeper grooves can accommodate more water. Worn treads have shallower grooves that accommodate less water and force a greater build-up under the ribs causing the tire to ride-up on the water and lose contact with the pavement more easily.

Tire inflation pressure also is important because properly inflated tires are less likely to hydroplane.

The lighter the car, the more chance of hydroplaning. If too much weight is concentrated in the rear of a car, hydroplaning is also more likely, for the front tires will tend to tilt up much like the bow of a speedboat.

Even with new tires, properly inflated, and with good wet-weather tread design, hydroplaning can occur if the water exceeds the groove depth of the tires and the critical speed (between 45 and 55 mph) is reached. So be alert for hydroplaning conditions.

EMERGENCY ACTIONS

Dynamic hydroplaning is produced by standing water. Look for it, especially on curves. Warning clues: you see clear reflections of other cars and poles; or you notice raindrop "dimples" appearing on the road; or you hear

(Concluded on page 19)

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John E. Davis
Director

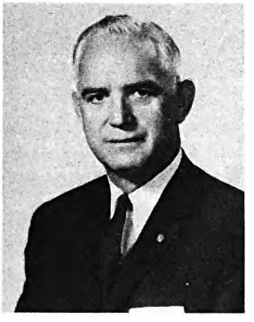
Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.



viewpoint

Secretary of Defense *James R. Schlesinger* has stated: "The Federal Government must continue to meet its responsibilities under the Federal Civil Defense Act of 1950, as amended, to provide *leadership*, guidance, and assistance to the State and local governments."

Leadership is an essential element of preparedness.

But deploring "lack of leadership," both in government and in private industry, has become increasingly popular. It's a convenient means of explaining away all kinds of difficulties.

Largely ignored, however, is the immeasurable degree and extent of leadership that keeps government, business and industry, and society in general, functioning – often at peak efficiency.

Talent and capability exist and are exercised in all walks of life. They're put to the test every day; and, more often than not, Americans respond by exerting leadership in a wide range of ways. This includes also the desire and capability to respond intelligently and forcefully *to* sound leadership.

The rewards of leadership in civil preparedness are many, especially when lives and property are saved from disaster.

Leadership need not be demonstrated overtly – as in a daring and glorious burst of personal derring-do. That person, too, is the hero who quietly applies leadership in the largely unsung, day-to-day routine of building preparedness: often in the face of apathy, inadequate budgets, and, sometimes, of outright opposition. Achievements must sometimes be gained slowly and painstakingly. This is leadership at its finest!

Leadership can be inherent. But knowledge and experience can build and sharpen even the natural born leader. That is why we so strongly urge continuing career advancement as a solid base for leadership.

One element of leadership is the ability to communicate your goals to others. As *Clarence B. Randall* said: "No man can exercise vigorous leadership who lacks the gift of transmitting thought."

Another element is the ability to take it. As *Fulton J. Sheen* put it: "When you are getting kicked from the rear, it means that you are out in front."

Dag Hammarskjold described leadership as not playing it safe. He said: "It is when we all play safe that we create a world of utmost insecurity."

But I think no one expressed the essential elements of leadership as well as *Theodore Roosevelt* who described it this way: "The only life worth living is the life of effort – effort to attain what is worth striving for.... It is not the critic who counts; not the man who points out how the strong man stumbled or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs and comes short again and again; who knows the great enthusiasms, the great devotions; who spends himself in a worthy cause; who, at the best, knows in the end of triumph, of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those timid souls who know neither victory nor defeat.... Far better it is to dare mighty things, to win glorious triumphs, even checkered by failure, than to take rank with those poor spirits who neither enjoy much nor suffer because they live in the gray twilight that knows not victory nor defeat."

John E. Davis

John E. Davis
Director

Winging

By JOHN G. W. MAHANNA

Emergencies on land, air, and sea test preparedness organizations throughout the country, but one volunteer group that is in a readiness condition at all times is the Civil Air Patrol, the air arm of civil preparedness.

This volunteer auxiliary of the U.S. Air Force for a quarter of a century has been performing humanitarian services effectively in a widespread number of emergency situations since before the outbreak of World War II.

A plan to mobilize the Nation's civilian air strength was presented to President Franklin D. Roosevelt in April 1941 – a month before the Office of Civilian Defense (OCD) was established as an agency of the Federal Government with former New York Mayor Fiorello H. LaGuardia as its Director. A World War I pilot, LaGuardia recognized the merit of the plan and expressed his enthusiasm for it, but he also was aware that its success would depend upon the support of the U.S. Army Air Corps. A special aviation committee was appointed to "blueprint" the organization of civil aviation resources on a national basis.

To satisfy the plan with military approval, General H. H. (Hap) Arnold set up a review board of military officers. He asked the board to determine the potentialities of the Civil Air Patrol plan, recommending that Army Air Corps officers help set up and administer CAP.

CAP Created Just Before Pearl Harbor

LaGuardia signed the formal order creating the Civil Air Patrol on December 1, 1941 – less than a week before the United States entered World War II.

The day after the Japanese attack on Pearl Harbor, Major General John F. Curry, U.S. Army Air Corps, was designated as CAP Commander, marking the beginning of the growth and development of the CAP in the service of the Nation. Four days later, when Germany and Italy declared war against the United States and Congress declared that a state of war existed, the Civil Air Patrol went into action, flying out over the Atlantic and Gulf Coasts aiding the Nation's defense effort. At that time the Navy and the Army Air Corps did not have the men and machines to patrol the entire coast line.

When military forces were built up enough during World War II to take over the task, CAP lost its coastal patrol job, and turned its attention to other wartime missions such as flying surveillance along the Mexican border. Operating from bases along the border, the CAP planes flew low enough to read the numbers on automobile license plates as the crews watched for saboteurs and other suspicious persons trying to slip into the country.

Post-War Role Approved

After the Germans and Japanese surrendered, ending World War II, the emergency mission of the Civil Air Patrol appeared to be ended, too. But those who knew of its capabilities and accomplishments, saw a potential for CAP in peacetime and were unwilling to let it die. Congress agreed that such an organization should not come to an end, and in 1946 passed legislation chartering the Civil Air Patrol as a non-profit, benevolent corporation composed of volunteer members. President Harry S. Truman signed the bill into law on July 1, 1946.

In 1948, Congress made the CAP a civilian auxiliary of the U.S. Air Force, making it possible for the military to donate surplus equipment and supplies to the organization, and to aid it in carrying out the missions assigned to it in the 1946 legislation.

Today, the Civil Air Patrol is still organized basically as it was in the beginning, with a structure resembling that of the Air Force. A national board of senior members, with Brig. Gen. William M. Patterson as Chairman, directs its corporate affairs. And although CAP is a civilian organization, its national commander is an Air Force General Officer, appointed by the Secretary of the Air Force. Currently serving in that capacity is Brig. Gen. Leslie J. Westberg.

More Than 65,000 Involved

General Westberg, former Deputy Assistant Chief of Staff for Air Force operations in the Pacific Command, commands the all-volunteer CAP organization of more

in the Help

than 65,000 young people and adults, in addition to more than 160 U.S. Air Force personnel assigned at Maxwell Air Force Base, Alabama, national headquarters for CAP and at State Wing and regional levels, as advisors.

Through the years the relationship between CAP and civil defense has been close. Coordination has continued with CAP taking an active part in Federal emergency preparedness programs. One prime example of the high degree of cooperation that exists was demonstrated when the Defense Civil Preparedness Agency Staff College at Battle Creek, Michigan, joined with CAP national headquarters in devising and presenting special training courses expressly for Civil Air Patrol members.

Ready for All Emergencies

CAP is unique among the many general aviation organizations in that it has an in-being structure capable of responding to emergency situations. Wing Commanders take an active part in emergency planning at the local level, and in many cases actually participate on the staffs

MISSISSIPPI CAP plane on a search mission.

Winging in the Help

of State and local Emergency Operations Centers. From these they direct CAP resources as an integral part of an over-all emergency operation.

There are many examples of CAP's involvement in emergencies. One that stands out is the case of Major John L. Elliott, who served as CAP mission commander for the Mississippi Gulf Coast area during Hurricane Camille. He was personally involved in aiding victims of the storm, working hand-in-hand with civil defense authorities and other agencies coordinating the efforts of the many Mississippi CAP Wing volunteers.

When the hurricane was approaching the coast, he assisted civil defense workers in evacuating people from beach homes. He continued doing this even after winds reached 85 miles per hour with tides breaking over the seawall. After directing 22 people to shelter in his own home, he finally joined them during the height of the storm.

The group huddled together while Camille devastated the Gulf Coast with winds in excess of 100 miles per hour, torrential rains, and rampaging tides. In the midst of this howling chaos, the roof of a neighboring house flew through the air and demolished one wall of their refuge. Gas gushed from a broken line in the rubble, ready to explode with the first sparks. Exposing themselves to this new danger plus Camille's full fury, Major Elliott and his sons managed to cap the broken gas line, making the 22 refugees' haven relatively safe again.

Silver Medal of Valor Awarded

As dawn broke on Monday morning, Major Elliott left his storm-damaged home and went on foot to survey damage in the immediate area. While working his way through fallen trees, power lines, and standing water he received a frantic call for help. Entering the remains of what had been a home, he found a man so distraught from the destruction of the night that he was threatening to use the gun he held on both his wife and himself. Ignoring the danger, Major Elliott encouraged the man, calmed him down, and eventually dissuaded him from taking their lives.

During the next two weeks Major Elliott, as CAP Mission Commander, supervised the meshing of Civil Air Patrol people and equipment with those of civil defense, American Red Cross, and others. He received the Civil Air Patrol Silver Medal of Valor for his actions during the storm.

One of the primary tasks CAP performs during civil defense emergencies is providing mission controllers at designated airports to implement the SARDA (State and Regional Defense Airlift) plan, which is the national plan for the utilization of general aviation aircraft and people during all types of emergencies. It is the means by which a State, in conjunction with the Federal Aviation Administration, controls the use of small aircraft for emergency missions. In order to maintain a state of readiness for emergencies, each CAP Wing has a continuing civil defense training program and takes part in an annual test of its CAP capabilities.

CAP's contribution to the Defense Civil Preparedness Agency's program is not limited to the air. It has members trained in ground-based radiological monitoring, first aid, shelter utilization, and operational communications.

Response in Hurricanes, Earthquakes

An outstanding example of CAP's contribution during a disaster in providing communications into and within the affected area occurred in 1970 when Hurricane Celia hit Texas. At the request of the Texas Department of Public Safety, CAP moved into the coastal area before the hurricane struck and for a time operated the only communications available in Corpus Christi.

The Alaskan earthquake of 1964 was another example of the Civil Air Patrol in an effective disaster-relief operation. The earth shocks, tidal waves, and fires—with attendant casualties—produced a situation comparable in many ways to that which could be expected as a result of a nuclear attack.

The CAP Group based in Anchorage went into action almost immediately following the earthquake, in close cooperation with the State authorities. The group airlifted critically needed equipment, personnel, and supplies to hard-hit outlying areas. The U.S. Air Force provided a liaison officer from nearby Elmendorf Air Force Base, and also furnished gasoline and oil for the operation of CAP aircraft. Ten pilots of the group flew scores of relief missions to striken areas, and delivered trained specialists and thousands of pounds of critically needed supplies.

Often First on the Scene

Besides providing critically needed communications in earthquakes and hurricanes, CAP volunteers can be found on the scene during floods, tornadoes, forest fires, snow storms, and aerial searches for lost planes. Key officials are transported to critical areas in CAP aircraft along with vital supplies. CAP vehicles are often the first into stricken areas, and since many are radio equipped, are instrumental in expediting relief efforts to the points where they are needed most.

Membership in Civil Air Patrol includes more than 23,000 young men and women between the ages of 13 and 21, known as cadets. They make up the 420 squadrons in the CAP program.

Emergency services of a wide variety occupy the attention of the cadets. For example, they can be found in flood-striken areas filling and stacking sandbags to keep back flood waters. They help to provide two-way radio communications to civil defense authorities and other rescue agencies when telephones are knocked out. In California, cadets helped repack mountains of food and supplies which were donated for shipment to Nicaragua following the 1972 earthquake there.

Annual Training Encampments Held

Cadets spend a week each summer at U.S. Air Force base encampments near their homes. There, among other courses, they are trained in emergency services. The Department of Defense supports the cadet encampment program by providing personnel at 50 Defense Department installations under the cosponsorship of the Air Force and CAP.

In a move to strengthen and broaden the effectiveness of this country's disaster-relief capability, the Defense Civil Preparedness Agency and Civil Air Patrol recently signed a Memorandum of Understanding. The agreement calls for the development of effective State and local civil preparedness arrangements with CAP Wings, including agreements on the conditions and types of CAP support available to the civil preparedness agencies during emergencies, and provision for CAP support in search and rescue missions, radiological monitoring, transportation, communications, reconnaissance and damage assessment, and other emergency support capabilities as appropriate. Also, the Memorandum of Understanding provides for CAP representation in State and local civil defense Emergency Operations Centers (EOC's) during tests, exercises, and emergencies, including making space available in each EOC communications area for the installation of CAP radio equipment, and for training of CAP personnel in civil preparedness assignments.

Closer working relationships between the Civil Air Patrol and civil defense are aimed at one goal: more effective response to those in need when disaster strikes.

CAP CADET weighs a package of supplies prior to shipment to Manauga, Nicaragua earthquake victims.

Upswing in the safety business.

By JOHN I. BOTT

This is the second article in a three-part FORESIGHT series on The Safety Business as conducted by the National Safety Council – America's largest non-profit business devoted totally to safety.

SAFETY POSTER comes off a high-speed press. The National Safety Council prints millions every year.

War. The thought of it is repugnant to every American. But a comparison of statistics relating to the fatalities caused by World Wars I and II and deaths occurring on our highways is even more sobering.

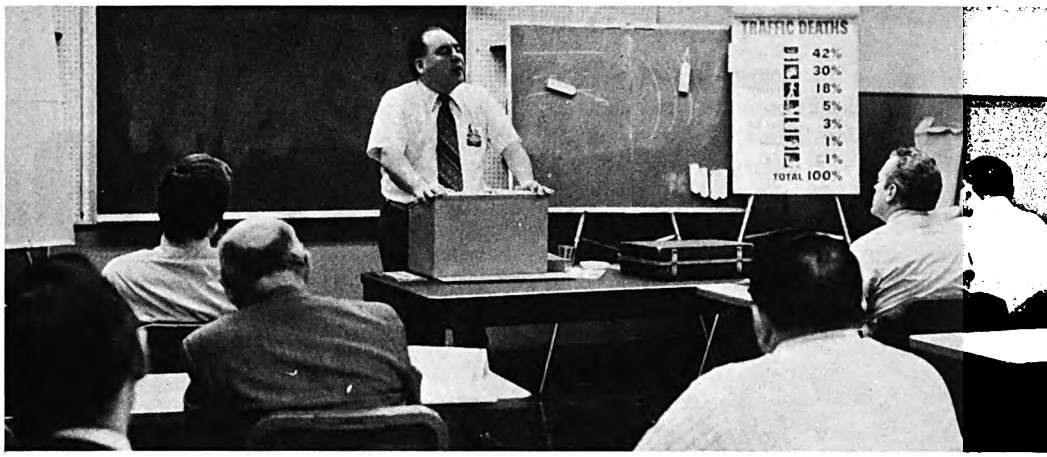
In World War I, 2,800 American servicemen died each month. During World War II, with more than three times as many Americans in uniform, the figure reached 6,350. The comparison? Our highway deaths from the years 1968 through 1973 averaged 4,700 a month. Or to put it another way, the automobile has become almost as effective at killing Americans as were our enemies in two World Wars.

The National Safety Council, organized 60 years ago to cope with the mounting casualties in the Nation's industries, soon found itself facing the problems of an industry that turned out a product avidly sought by thousands, millions of travel-hungry Americans: the family automobile. And as the use – and misuse – of the automobile grew on America's narrow roads and then its superhighways, so did the safety efforts of the National Safety Council.

Staff and Budget Grow

When the Council opened its doors in Chicago in the fall of 1913, the staff consisted of three persons. The President, B.W. Campbell, took a few hours each day from his desk at Illinois Steel to spend on Council matters. Commuting between both jobs was hardly time-consuming for him; both offices were in the same building. The Secretary was William Cameron, a professional safety engineer who was to spend the rest of his working years with the Council. The troops consisted of a stenographer, James Lamont.

As the Council's activities increased, along with its safety outreach across the Nation, its permanent staff grew from three to today's staff of 425. And its support grew from 14 charter members, who subscribed a total of $15,000, to today's membership of 16,000 and an annual budget of nearly $13,000,000.



EFENSIVE DRIVING STU-ENTS take the council's De-nsive Driving Course. More han 6 million have taken the ourse, now offered by more han 1400 agencies throughout he United States and in other ountries.

Along with other information on the causes and possible solutions to accidents in the Nation's industries, the Council became a key repository of statistics in the United States on automobile accidents. It received, and continues to receive, statistics from national and State vehicle departments. The breakdown by types of accidents is almost without end. For example, there are (1) collisions between vehicles, non-collision accidents caused by overturning and running off roadways, collisions with fixed objects, railroad trains, pedalcycles, motorcycles, and animals; (2) causes of accidents – speeding, failure to yield, passed stop signals and signs, driving on the wrong side of the road, improper turns and overtaking, tailgating, drunken driving; and (3) the occurrence of accidents within time frames – accidents taking place by day, at night, by hour of each day of the week, and by day and month.

Defensive Driving Campaign Launched

Based on this mass of material, plus the professional experience of those in the transportation industry, the National Safety Council was able to mount a campaign destined to make great inroads into our country's vehicular fatality rate. Called the Defensive Driving Campaign, the program is based upon an 8-hour classroom course in accident avoidance techniques and training concepts developed in the truck and bus industries over a period of more than 50 years. Taught by Council-trained instructors working through more than 1,400 registered training agencies, the course has been given to more than 6 million drivers in the United States. Training agencies include more than 150 chapters and affiliates of the Council, high schools, police departments, State motor vehicle departments, insurance companies, and employee groups in government and private industry.

A survey of 8,000 graduates of the Defensive Driving Course indicated the group had 32.8 percent fewer accidents after taking the course.

The National Safety Council's activities on behalf of traffic safety goes far beyond its interest in driver improvement. Council experts have been asked time and time again to appear before Federal, State, and local authorities to provide advice and recommend courses of action which later were to be incorporated within legislation aimed at making streets and highways safer for the American driver. In addition, the Council has provided a number of on-site safety-help programs to State and local communities, including programs aimed at improving traffic flow, street lighting, and local records-keeping systems.

Continued Attention to Industrial Safety

In addition to all its activities in the traffic safety field, the Council is still heavily involved in the occupational health field, the area which led to the Council's formation. For example, in 1974 the Council:

- Offered 36 one-week courses through its Safety Training Institute, covering fundamentals of occupational safety, industrial hygiene, noise, audio metric testing, management techniques, and safety training methods. Special courses in chemical safety, hospital safety, and safety in public utilities were given. Some 16,000 supervisors took the "Key Man" course, a safety training course for management.
- Expanded its "Standardized Farm Accident Data Retrieval" program. This is an improved system in which farm accidents are identified by type, incident rate, and severity. It now covers 10 States; five others are to be added to the program.
- Completed work on the 7th edition of the "Accident Prevention Manual for Industrial Operations." Updated and reprinted every 5 years with a current print-run of 50,000, this manual is used not only in the United States but throughout the world.

Among the facilities available to the Council today in carrying out its wide-ranging safety programs is its safety

Upswing in the safety business

library – the world's most comprehensive library of safety information and materials. Source data is catalogued, microfilmed, and computer-indexed for ready reference. The library consists of 7,500 books, 650,000 reports, 37,000 photographs, 6,000 periodicals, and 3,000 trade catalogs, as well as data on microfilm and microfiche. Its Safety Research Information Service includes more than 7,000 research case histories and safety studies.

The Council's library services 33,000 requests for information annually from Council members and other safety-minded organizations and individuals. A random sampling of requests for one month, January 1975, showed that a major corporation, insurance companies, a State law enforcement agency, a university, a law firm, and the U.S. Air Force were interested in such matters as:

– Hazards of oxygen deficiency in industrial atmospheres.

– Percentage of vehicle occupants injured in car pool accidents.

– The involvement of police in traffic accidents.

– The effects of marijuana and alcohol in combination.

– Fog as a traffic hazard.

– The most dangerous appliances in homes.

– The advisibility of building a superhighway through an inner-city park.

– The effects of aging on the performance of truck drivers.

Publishing the Word

In the Council's Chicago headquarters, 100,000-square-feet of floor space is devoted to its print shop where nine printers preside over six multi-purpose presses. Then handle 400 assignments every year, including the printing of 12 million posters, 30 monthly newsletters, and eight magazines with a circulation of nearly 3 million. In Chicago, the Council is the U.S. Postal Service's leading customer after the windy city's mail order giants.

It's all a part of gathering and disseminating the safety story, in all of its variety, throughout the United States and beyond. And the National Safety Council, which started with concern for safety in the workplace and expanded rapidly to the problem of highway safety, now also turns its attention to other fields – to safety in the homes and in the growing recreational pursuits of Americans, for example. A Council founded in the belief that safety cannot be legislated, nonetheless has become deeply involved in safety legislation.

Different problems, other needs, new concerns. All of these have worked to expand and change the safety business in America. ■

(The final article in this series appears in the next edition of FORESIGHT: Law, Leisure, and the Safety Business.)

teaching

Emergency life saving information and skills have found a receptive and responsive audience in Louisiana thanks to the enthusiastic efforts of the State's civil preparedness school program staff.

Last year alone, approximately 60,000 elementary and secondary level students in Louisiana were exposed to emergency preparedness instruction through their regular school curriculum. The exact number of students who received instruction is probably much higher, since many teachers received materials from conventions, conferences, requests by mail and telephone, as well as from workshop sessions conducted by the civil preparedness school program staff. The training included at least one hour and sometimes more of instruction per student.

Already this year, more than 20,000 elementary and 12,000 secondary students have been exposed to civil preparedness materials.

In-service training has also become an important facet of the civil preparedness school program in Louisiana. Last year, 15 teacher-training workshops were conducted for elementary and secondary level teachers. Teaching methods and activities which would promote emergency preparedness instruction in the curriculum were pursued with marked success. The school year also provided an opportunity for the preparedness program staff to present a program of professional and technical services involving school emergency planning for 550 school board members, superintendents, supervisory school personnel, and principals.

The current fiscal year has produced several other successful special projects and activities. A handbook, *Suggested State School Emergency Plan Guide*, was prepared by a special task force appointed by State Superintendent of Education Louis J. Michot. Members of the task force included a cross section of civil preparedness and school officials from throughout the State.

The handbook was designed to serve as a guideline for parish, city, and local school administrators and officials in the preparation of local school emergency plans, to help nurture positive attitudes toward emergency preparedness, and to minimize injuries and deaths of students and staff and damage to school plants and facilities should a disaster strike.

Another special committee, composed of classroom teachers, has prepared an emergency preparedness curriculum guide for grades K-12. Intent of the publication is

preparedness

By MRS. JO ANN DAUPHIN / Chief Coordinator / Louisiana Civil Preparedness School Program

to aid Louisiana teachers in fusing civil preparedness concepts into their regular class curriculum.

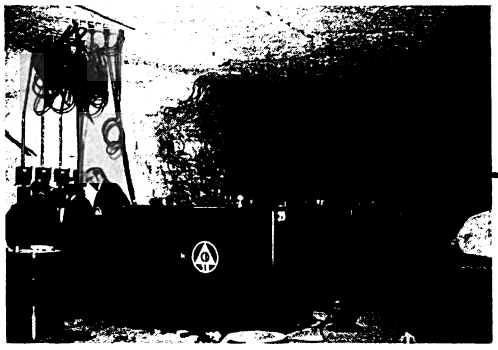
Still another program initiated by the civil preparedness school program staff is the Disaster Nursing Course conducted annually for practical nursing students enrolled at the Hammond Area Vocational School. The course exposes each student to the causes and effects of natural and man-made disasters and to the methods of protection and recovery needed when disaster strikes.

The preparedness staff recently completed a regional in-service training workshop for elementary and secondary teachers from five parishes. We hope that participation of the teachers in this workshop will result in more civil preparedness instruction in the curriculum.

FIRST GRADE STUDENTS in Baton Rouge participate in a civil preparedness role playing activity, led by Mrs. Jo Ann Dauphin, Chief Coordinator of Louisiana's Civil Preparedness School Program, and her associate, Edward Milligan.

Credit for success of the civil preparedness school program in Louisiana can be attributed to the support and cooperation of a number of State and local officials whose efforts helped provide the preparedness program with statewide exposure to local public officials, school administrators, and State and local civil preparedness personnel. ■

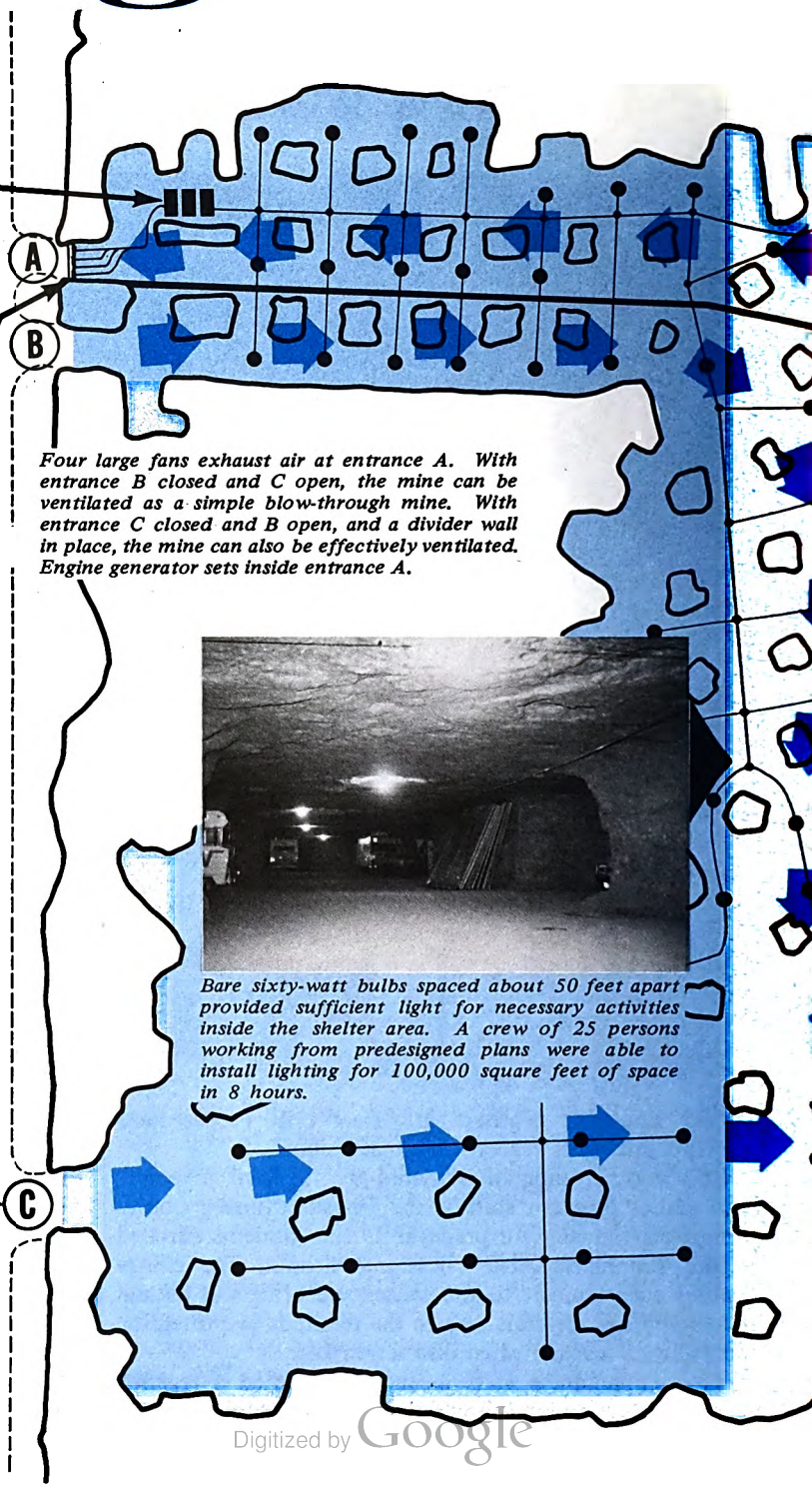
Mining More



The engine generator sets were located inside the mine where they could be operated safely in a fallout environment. They were installed near the ventilating exhaust openings to insure expulsion of noxious combustion products.

A simple heavy wood frame was used to support four 5-foot-diameter fans breaching one entrance into the mine. The fans moved about 240,000 cubic feet of fresh air per minute. Since the heat capacity of mines is so great, heat generated by the occupants is not a problem. Three cubic feet of fresh air per occupant, or even less, would be sufficient for adequate ventilation.

This entrance at the opposite end of the mine from the exhaust fans furnished a simple convenient inlet for fresh ventilating air which was expelled by exhaust fans after flowing through the mine

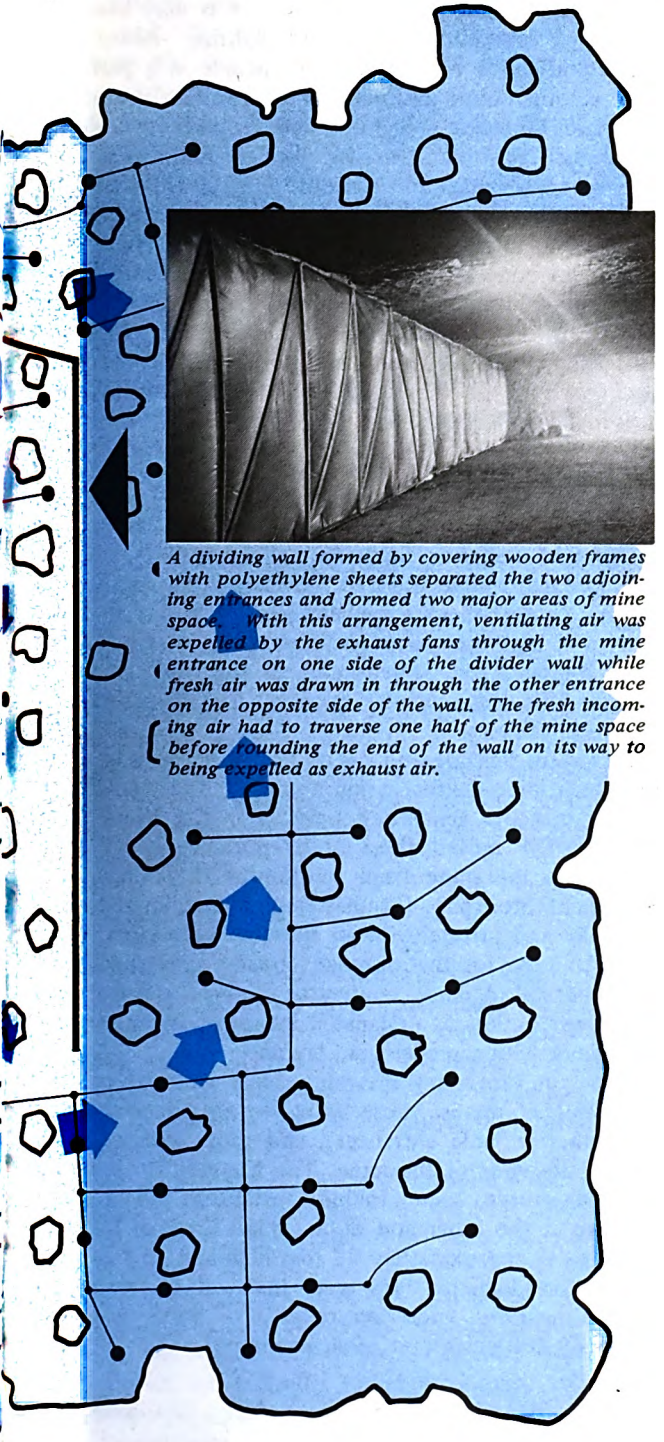


Four large fans exhaust air at entrance A. With entrance B closed and C open, the mine can be ventilated as a simple blow-through mine. With entrance C closed and B open, and a divider wall in place, the mine can also be effectively ventilated. Engine generator sets inside entrance A.

Bare sixty-watt bulbs spaced about 50 feet apart provided sufficient light for necessary activities inside the shelter area. A crew of 25 persons working from predesigned plans were able to install lighting for 100,000 square feet of space in 8 hours.

Protection

By GEORGE N. SISSON
DCPA Research



A dividing wall formed by covering wooden frames with polyethylene sheets separated the two adjoining entrances and formed two major areas of mine space. With this arrangement, ventilating air was expelled by the exhaust fans through the mine entrance on one side of the divider wall while fresh air was drawn in through the other entrance on the opposite side of the wall. The fresh incoming air had to traverse one half of the mine space before rounding the end of the wall on its way to being expelled as exhaust air.

FACT ONE: Hundreds of square miles of mines exist underneath America.

FACT TWO: No person and no agency knows how many mines there are in our country, where all of them are located, or the physical conditions to be found in all of them.

FACT THREE: In the event of nuclear attack, mines could shelter millions of Americans, especially in the densly populated northeast corridor of the Nation. Many of the huge underground facilities would provide excellent protection from the tremendous blast and heat effects of nuclear explosions, and total protection from radioactive fallout.

Because of these facts, the Defense Civil Preparedness Agency is working to pull together more information – more facts – about mines in the United States, including ways to improve mines rapidly and inexpensively in a period of international tension so that people could use them as nuclear shelters.

The potential of using mines as nuclear shelters is particularly attractive when viewed in the context of Crisis Relocation Planning – contingency planning to move people away from likely target areas to protective shelter in less dangerous areas over a period of two or three days during an intense international crisis. (See "Perspective on Crisis Relocation Planning," FORESIGHT, November-December 1974.) While many large mines are not located within or next to major metropolitan areas, they *are* close enough to be reached within two or three days by city dwellers.

Potential Shelter for 50 Million People

Although mines always have been included as part of the National Shelter Survey, started in 1961, up to now those located more than 25 miles from major cities have not been given close attention because the assumption was they were not close enough for most people to reach after an "attack warning" was sounded. Even under those severe travel time restrictions – restrictions which are not valid in terms of Crisis Relocation Planning – the National Shelter Survey has located shelter space for 6 million people in some 2,000 mines. Out estimates now are that, under Crisis Relocation Planning criteria, there is a potential for sheltering 50 million people in level, dry, and readily accessible mines.

Mining More Protection

Multipurpose use of mine space is already a well-established practice in the United States. In the Kansas City area, scores of freight cars are loaded and unloaded daily in underground mine warehouses. The limestone mines of Pennsylvania are centers for a large mushroom-growing industry. There are many other examples. We in DCPA are simply proposing to explore another use for mines, an emergency use.

Our study of mines is not something totally new under the sun. For example, the advantage of locating certain industries underground became apparent in World War II. After the war, the Army Engineers directed a survey of underground space that might be suitable for critical defense industries. Survey criteria were strict: The overall space in any mine had to be level, dry, and at least 25,000-square-feet in size, and provide for rooms at least 20 feet wide and 10 feet high. There was no attempt to look at all mines or even all "good" ones. In all, 286 mines containing 400-million-square-feet of space were surveyed in the project, but plans to locate industry there failed to materialize. The mines surveyed were predominantly limestone, granite, sandstone, and salt. About two-thirds of them were located in the populous northeastern section of the country.

Many Studies Carried Out

Over the years DCPA and its predecessor agencies have conducted a number of studies on mines. In one study, for example, it was demonstrated that the entire population of Pittsburgh could be sheltered in mines within 70 miles of the city. (In fact, a single limestone mine near Pittsburgh technically could shelter the entire population of the metropolitan area: 2.4 million people. The logistics for transporting and caring for such a large number of people at a single location is quite another problem.) Another study concluded that 70 percent of the population of Missouri could be sheltered in mines and caves in the State. In other special studies, 650 mines were surveyed in Montana, 400 in Utah.

Most previous studies on the use of mines as nuclear shelters envisioned a funded program to make the mines ready, on a permanent basis, for emergency use. The findings were never implemented because the costs were felt to be too high, possibly as high as $50 per person sheltered, which jumps to a $2.5 billion total if you're thinking in terms of sheltering 50 million people in mines. Our current thinking, which involves emergency actions that could be taken as part of a crisis relocation concept, is at a much lower cost level: about $1 per person sheltered in mines. These costs would be focused essentially on meeting the two major technical problems involved in getting mines ready for people to use them as nuclear shelters: lighting and ventilation.

One need only enter a few hundred feet into a mine to realize that nothing could be done in this inky blackness without a minimum amount of lighting. Also, when thinking in terms of thousands of people in a particular mine, careful consideration must be given to ventilation. These two problems – lighting and ventilation – are the two prime constraints on the use of mines as shelters under a crisis relocation concept. And so we posed this question: Given available plans in peacetime and one or two days to implement them during a crisis, might it be possible to convert a mine into a public nuclear shelter? Many other questions, of course, can be raised with respect to this subject, including problems of shelter management, feeding, and transportation. But all these questions exist in varying degrees in all present shelter plans involving large shelters.

Experiment at Kansas City Mine

Our first step was to carry out a feasibility study to develop some simple ways to provide lighting and ventilation in a mine on an expedient basis. For our study we selected a limestone mine about seven miles from downtown Kansas City, a mine that is normally rented to people during the winter months for the storage of recreation vehicles.

Power for lighting and operating the ventilation equipment in a mine-shelter during a crisis period would likely require protable generating units. For the Kansas City study, DPCA moved three of its portable 40-KW generators into the mine from its Kansas City Engineering Equipment Stockpile. (Studies show that a large number of public and privately owner portable generators, which could be used for this purpose, already exist throughout the country.) A local contractor quickly installed light and power outlets at designated locations in the mines in accordance with a predesigned layout.

Tests for ventilating the mines were arranged to cover two types of mines: those with two entrances alongside each other (double entrances), and those with entrances at opposite ends of the mine. The Kansas City mine has three entrances, two double entrances and a single entrance at the other end of the mine. Each of the three entrances is approximately 12 feet high and 15 feet wide. Four 5-foot-diameter fans were installed in one of the double entrances, each fan capable of moving approximately 60,000 cubic feet of air per minute.

Ventilation Tests Conducted

To test the ventilation of mines with entrances at opposite ends, one of the double entrances of the Kansas

City mine (the one next to the fan installations) was closed, and the entrance at the opposite end of the mine was opened. The fans then moved sufficient air through the mine to support 80,000 people for an indefinite length of time.

Although the velocity of the air at the entrances was very high, the volume of the mine was so great that only a gentle air movement could be detected inside. The mine has a constant, year-round temperature of about 54 degrees Fahrenheit, and its heat capacity is so great that it would be very little affected by this amount of air flowing through it, even if it continued for months.

To test the ventilation of mines with double entrances side-by-side, the entrance at the opposite end of the mine from the fans was closed and the entrance alongside the fan installation was opened. This represents the characteristic of many mines which have two closely spaced openings, and represents a difficult ventilation problem since air driven from one opening will simply draw air through the other opening and promptly expell it in a "short circuit," never allowing air to be distributed throughout the mine.

To overcome this problem, a series of wooden frames, covered with polyethylene sheets, were used to form a floor-to-ceiling wall separating the two closely spaced mine openings for a distance of 2,000 feet back into the Kansas City mine. This forced the air to be drawn in at one opening and drawn along the entire length of wall through the mine and back up the area on the other side of the polyethylene wall, where it was then expelled at the other opening.

Program Costs Are Low

The only peacetime costs involved in a program of this type are those necessary to prepare plans for the emergency use of mine space. For each mine, this requires a knowledge of the location of the mine, its size and configuration, an estimate of the usable area, and the location of portable generating units, fans, wire, bulbs, and related electrical items.

If the plan were to be implemented during a crisis period, the cost would be very low. Depending upon what items could be recovered, the total cost of the project, to be incurred only at a time of crisis, would be rental fees for the equipment and an investment in electrical items. For most applications this would amount to from one to five cents per square foot of space. With adequate labor, which should be plentiful under emergency conditions, the conversion could be accomplished in less than one day. The important thing is to have a prepared plan and know the locations of personnel and material necessary to implement it.

Mines as Good Blast Shelters

One recent, tentative finding, surprisingly, is that blast doors are not necessary to make good blast shelters out of mines. It turns out that the volume of most mines is so great when compared to the relatively small entryways through which the blast wave must enter that the mines never fill with pressure. Thus, it appears feasible to utilize some of the mines even near likely target areas as nuclear shelters.

It appears timely to reevaluate all previous conclusions regarding the use of mines as nuclear shelters. Small mines, if habitable or if they can be made habitable in a crisis, should be included in the planning. Even shaft-entry mines, although capable of being entered only at a very slow rate, should be considered. Any mines containing dangerous gases, harmful bacteria, extensive wetness, or obvious instabilities should be ruled out, of course. Although caves and tunnels constitute only a small percentage of available underground space, they too should be included in the planning where available and the space is needed.

The very high quality of nuclear protection offered by America's underground mines has not been fully appreciated. Now is the time to rectify that situation.■

Perch Patter *(Continued from page 6)*

your tires splashing or sizzling on what seems to be only a thin film of water. Slow down. Slow way down on curves. Even on a straightway, partial hydroplaning can happen at 30 mph.

If possible, follow in the tracks of the car ahead. Its tires are wiping away the water from the pavement. However, don't tailgate him. You need more stopping distance under wet road conditions.

Stay alert to the feel of your steering wheel as you drive. If the steering seems to get easier or feel loose, you may be starting to hydroplane.

If your car does start to hydroplane, *stay away from the brakes. Ease your foot off the accelerator smoothly and gradually*. A sudden deceleration would have the same effect as braking on a slippery surface and could throw the car into a skid. Keep decelerating until you get the feel of the road again.

The physical laws of the highway are unyielding. And with the right conditions of tire wear, underinflation, and speed, hydroplaning on a wet road is almost a certainty. The time to take action against it is before it happens. – **Sandra E. Farrell.**

How to get 1,000 officials to your Readiness Seminar

By HOWARD H. LINDSAY
South Carolina Disaster Preparedness Agency

By using a new approach and a different medium of communication, an agency can give new life and audience interest to a disaster preparedness message which, even if somewhat prosaic, needs reiteration.

The South Carolina Disaster Preparedness Agency rediscovered the truth of this maxim when it decided to design a Winter Storms Preparedness Conference for showing over Statewide facilities of the Educational Television Network.

Closed-Circuit TV Used

From the outset it was agreed that, since the program was being directed toward governmental and other officials with emergency responsibilities, it should be beamed over closed-circuit television lines to predesignated receiving centers. Many of these centers, moreover, had telephones already installed which would afford a talk-back capability for audience participation in a question-and-answer period following a formal initial presentation.

The results measured up to, and in many ways exceeded, expectations for this pioneer undertaking. On the night of December 16, a two-hour program on Winter Storm Precautions was beamed to 16 Technical Education Centers and 40 high school auditoriums in 43 of South Carolina's 46 counties. The talk-back arrangement tied together questions and answers emanating from all points of the State.

Most significant of all, perhaps, was the difference this approach made in the numbers of people participating. In two previous years, the State agency had conducted a day-long conference on winter-storm precautions held in a large conference room in the State's capital city of Columbia. Each county civil defense director was urged to attend and invite one or two of his key emergency support officials. Even when filled, this conference room

could accommodate only about 150 persons. And when weather conditions rendered driving hazardous, many in the audience would deem it advisable to depart before conclusion of the program to reach their home counties before nightfall when roads would become increasingly treacherous.

More Than 1,000 Participate

By contrast, reports received from the counties in the wake of the televised production verified that more than 1,000 elected and other key officials witnessed and participated in last year's information exchange and most were able to remain through the entire presentation.

Fred C. Craft, Director of the State Disaster Preparedness Agency who conceived the program, afterward termed it "a tremendous success," and reaction from the local level added to the accolades. As many as 76 persons saw the program in one county alone and audiences included many governmental and civic leaders.

Format of the presentation was in three parts. The first part included videotaped messages from the State's Governor-elect, James B. Edwards; its current Lieutenant Governor, Earle E. Morris, Jr.; and a taped interview with Director Craft. Also in this segment were film clips showing past storm damage in South Carolina – mainly during a record-setting 25-inch snowfall which hit the State in February 1973, stranding thousands of motorists for several days. Other pre-recorded scenes gave a visual tour of the National Weather Service facilities in Columbia, showing operations of equipment used to spread weather warning, and a portrayal of how the State Disaster Preparedness Agency staff responds in an emergency to aid and transmit warning to counties throughout the State.

Segment 2 introduced a panel of key representatives from State agencies which have emergency roles. These panelists, through interviews, explained duties their departments performed in winter storms. Participants, in addition to Director Craft, were representatives from the State Department of Social Services, Army National Guard, highway patrol, highway district engineer, Forestry Commission, Wildlife Resources Department, the American National Red Cross, and the National Weather Service.

Questions and Answers Important

The third and final portion of the program was given to questions and answers. This was carried out by a roll-call of the counties from the panel moderator, with questions from the counties being directed toward a particular panelist.

John J. Doyle, Disaster Preparedness Agency education officer, who coordinated production of the program with the State Education Television Network, commented on this "live" portion of the presentation: "This was by far the most important phase. Many pertinent questions regarding winter emergency operations were asked and handled quite well by all the panel members."

On the first roll-call, each county was limited to two questions, but more were forthcoming in subsequent roll-calls during the hour-long segment. Participation was limited to some degree in this exchange by the fact that only 16 Technical Education Centers were equipped with direct-line telephones; no talk-back facilities were available to persons viewing the program from high schools.

PREPAREDNESS PANELISTS go on the air from the South Carolina Emergency Operations Center.

How to get 1,000 officials to your Readiness Seminar

Despite this drawback, questions reflected conditions prevalent in the State's four major geographical areas – mountains, Piedmont, sandhills, and coastal plain.

Electronic Seminar Meets All Goals

DPA officials, in a post-program critique, agreed that the innovative effort, in addition to reaching the largest audience to view an agency program, also succeeded in accomplishing other goals set at the outset.

"Our purpose was to expose to local governments, and to members of the general public who attended, how the Emergency Operations Center (EOC) in Columbia works," Education Officer Doyle said. "Our message to them was that the EOC is the primary coordinating vehicle in any disaster or emergency situation. The winter-storm theme was pertinent to the season and of topical interest, especially since the subject was still close to the memories of people who were subjected to the 1973 blizzard."

Could other States use the same approach and format to similar advantage? According to South Carolina Educational Television Network program planners, script writers, and technicians, the answer is "yes" but with some formidable considerations to keep in mind.

Primary among these is the fact that, while South Carolina has developed a highly regarded first-rate educational television network, many other States have taken less ambitious steps in this field or have no such facilities at all. This could be a determining factor at the outset, because of the difference in costs such a production could represent if it had to be contracted commercially rather than developed through a State-operated facility.

Program Costs Compared

For example, the price tag on the South Carolina agency's program, including costs of a broadcast tape and two cassette tapes which will be furnished to the DPA for re-use in educational programs, was $1,566. ETV experts estimate that the same program produced commercially would have cost the contracting client about $13,000.

Is such an approach worth the expense entailed? In South Carolina's case, planners agree it was well worth it, since the total costs of $1,566 for an audience of more than 1,000 persons worked out to only about $1.50 per participant – considerably less expensive than the travel costs alone for 100-plus people to drive to Columbia, not to mention man-hours lost from regular duties for a full day.

States that do have educational networks available to them, however, probably would discover that such a program would have to go out over all network receivers, since most ETV networks are not now equipped for closed-circuit telecasting. South Carolina's EOC, moreover, already was wired with ETV telecasting cable which permitted on-site programming without extra time and expense.

Other Approaches Suggested

An alternative for beaming to select audiences, and one which might prove as effective as well as less expensive, is the possibility of reproducing a program on a number of video cassettes which could then be replayed on equipment available in many school district offices and beamed to sets located in schools within those districts.

To compensate for the lack of talk-back facilities, arrangements could be made for conference telephone connections for communication of questions and answers following presentation of the taped video portions.

Whatever format is followed, television and agency program specialists alike agree that an important ingredient to remember is to allow plenty of time – four to six months at the minimum – for preparing, writing, staging, filming, and editing the presentation.

"Decide at the outset what you want to show visually," a television programmer advises, "Then give your production crew plenty of time to effect it."

It's important, too, that you give participants you want to appear on the program ample advance notice and obtain from them a firm commitment to take part, agency planners insist. And if you have a script you want them to enunciate, get it to them in plenty of time for them to become thoroughly familiar with what they are to say.

Allow Plenty of Preparation Time

Time is of further essence in gathering your audience. Set a firm airing date for the production to allow for invitations to be sent to potential viewers and for the program to be publicized through all available news media. The best program ever planned is of little worth if the desired audience is not present to see it.

Finally, be aware that whatever medium is to produce the program – whether State-operated ETV or a commercial producer – has programming commitments of which yours is only a small part. Give the medium generous leeway for planning sessions with you to discover your objectives, visualize ways of translating your thoughts to visuals, and arrange for smooth transitions and contrasts between scenes involving just talking with those which show activity.

Often, too, with sufficient time your producers can research film libraries and locate highly graphic film footage from past news and documentary programs which not only dramatically illustrate points being emphasized, but will save costs of the production in the long run. ■

Regional Roundup

AUGUSTA, MAINE

Maine's model ordinance for the National Flood Insurance Program has been approved by the U.S. Department of Housing and Urban Development.

Edward A. Thomas, Regional Director of HUD's Federal Insurance Administration in Boston, said Maine's law contained the authority for local governments to grant variances in some cases, and that questions had been raised as to whether it would conform to Federal law. However, there was no conflict between the Federal and State versions of the law, he said.

The ordinance, which is being used statewide with the National Flood Insurance Program, was prepared by the North Kennebec Regional Planning Commission and the Maine Municipal Association. Distribution has been handled by the Maine Bureau of Civil Emergency Preparedness, the State's coordinating agency for the insurance program.

SOUTH BEND, INDIANA

In a South Bend shopping center, a man parked his car, went to another car, opened the hood, removed the ignition wires, and walked back to his own car – only to be met by two policemen who arrested him on suspicion of theft. Community Radio Watch (CRW) units on duty in the area had alerted the police and pinpointed the location of the suspect.

Donald H. Germann, Coordinator of St. Joseph County Civil Defense, reports that purse snatchings, auto thefts, muggings, and auto vandalisms have all but disappeared in shopping centers because of surveillance of CRW teams. And who makes up these teams? They are Citizens Band radio operator volunteers. There are 40 members in the South Bend area, all with valid Federal Communications Commission licenses, 21 years of age or older, with good police records, and owning suitable mobile or walki-talki communications equipment.

the CRW volunteer teams are part of the Communications Division of the Civil Defense Office. They are assigned to serve under the direction of the Police Department where they are designated to work in trouble areas. Police in unmarked squad cars stand by to pick up suspected persons upon direct notice from the CRW teams. Started last November on a trial basis for the holiday season, the program has been so effective that current plans call for expanding the CRW team operation throughout the entire city as a permanent part of the emergency operational plan, Mr. Germann said.

SAN FRANCISCO, CALIFORNIA

Capitalizing on the Hollywood motion picture, "Earthquake," Edward P. Joyce, Director of the San Francisco Office of Emergency Services, arranged for the distribution of 60,000 wallet-size cards with earthquake safety tips to theater patrons. On Friday and Saturday performances, the cards were distributed by volunteers from the local Citizens Band radio group. On other days, patrons were given the cards as they purchased their tickets.

SPRINGFIELD-GREENE COUNTY, MISSOURI

No one can assure the citzenry of Springfield and Greene County that disasters, big or small, will not strike again. But Civil Defense Director E.L. Chadick *can* assure them of one fact: they can respond more effectively to major emergencies, thanks to equipment the community has acquired on loan through the Excess Property Loan Program of the Federal Government.

This is a far cry from the situation that prevailed in Springfield two years ago when a severe ice storm hit the area. Then the huge fire department station doors could not be opened for lack of electrical power, local dispatch service was off the air, and the sheriff's department and other city and county departments could not function.

Director Chadick reports that today every city fire station and all public works facilities have standby emergency power sources, and several emergency generators are ready to be moved wherever they are most needed. Also, thanks to the Excess Property Loan Program, trucks, trailers, busses, and mobile lighting units converted for emergency use to haul heavy equipment, and gasoline tank trucks are ready to fuel equipment in the field. Six-wheel drive trucks equipped with mounted snow blades are ready to clear airport runways, and other equipment has been converted for fire-fighting purposes to serve rural areas. *(Concluded on page 27)*

FLASH

FLOOD!

By **HERBERT S. GROPER** / National Weather Service / Community Preparedness Staff

The flash flood is a killer.

Raging walls of water, moving at incredible speeds, can sweep away whole sections of mountain sides, uproot large trees, destroy buildings and bridges, and spare nothing in their paths.

A flash flood is the occurrence of a dangerous rise in water level of a stream or over a land area caused by heavy rain, ice jam breakup, earthquake, or dam failure. The time between the heavy rains and the resulting flooding is usually less than 4 hours. During flash floods in Arizona in 1971, streams rose 5 to 10 feet in 1 hour. Lifesaving actions may require seconds.

Threat Is Widespread

Given the right physical conditions, a flash flood can happen almost anywhere in the United States. In the last 2 years, flash floods hit in 22 States. In 1972, a flash flood in Rapid City, South Dakota took more than 240 lives and caused more than $100 million in damages.

Hurricanes frequently spawn flash floods. They contain an enormous quantity of rainwater which is dumped as the storm moves inland. Agnes in 1972, Camille in 1969, and Diane in 1955 are striking examples of the cataclysmic effects of the combined threat of hurricanes and flash floods.

Significant flash floods not associated with hurricanes have taken an average of more than 100 lives a year since 1971 and have occurred in 45 States during that period. Probably the main reason for the prevalence of flash floods in recent years is the urban sprawl. More people are locating themselves in areas subject to flooding. What may seem to be increased flash-flooding is really increased exposure.

What can be done to minimize loss of life and property from flash floods?

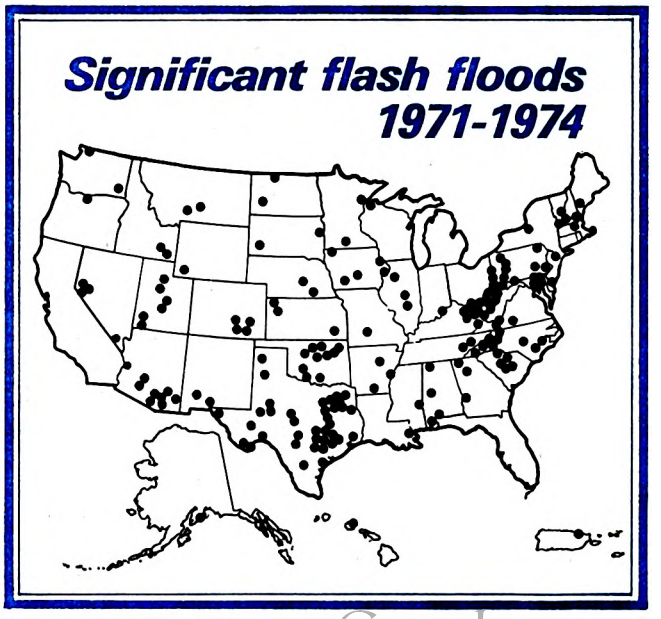
There's no single warning system that can save a community from disaster. But good local preparedness plans, combined with a concerted educational program to make the public aware of the threat, can pay huge dividents in reducing the number of deaths, injuries, and property damage.

National Weather Service hydrologists have developed forecast procedures for use by local officials. This "self-help" warning system calls for a designated local official to collect reports from a network of rainfall and river observing stations. The forecasting procedure shows what local flooding will occur under different conditions of temperature, soil moisture and rainfall. Using the rainfall reports and applying the procedures, a forecast and warning can be issued by local officials within minutes.

A new technique to speed warnings has been developed by the National Weather Service. It's called the Flash Flood Alarm System.

The Weather Service's Office of Hydrology began installing these automatic alarm systems to help deal with a problem made clear by Hurricane Camille in 1969, when the remnants of that dying storm released 27 inches of rain in about 8 hours in Virginia, drowning 153 people. That tragedy led to development of the new system.

The flash flood alarm system has three main elements, linked together by electrical circuitry: an automatic



FLASH FLOOD!

water-level sensor at an upstream point on the river; an intermediate station several miles or more downstream to provide power to the sensor; and a community-alarm station from which warnings can be spread quickly to the public. The upstream station has an enclosed float device which, when lifted to a critical level by rising rivers, activates an electrical current. This device may be mounted on an appropriate site, such as a bridge support. When rising water triggers the device, the signal goes to the intermediate station – located where both electric power and telephone service are available – and finally to an alarm station in a facility manned 24 hours a day, 7 days a week – such as a police station or firehouse.

The alarm itself consists of a lamp that flashes and an audible signal. When the alarm goes off, it's then the responsibility of local public safety officials to take necessary action to protect lives and property.

The Weather Service is now developing a flash flood alarm system which will use a radio to transmit the signal to the alarm station. It'll be powered by batteries and solar panels and will replace the intermediate station, power, and telephone lines.

The new automatic flash flood alarm systems are working. Markedly successful results have been documented in several communities where preparedness specialists have helped set up a plan and a system. Communities can benefit most from a combination of the self-help and flash flood alarm system.

On January 9, 1975, a flash flood alarm system was installed on the Jack's Fork River in southeastern Missouri. The alarm station is located in the home of Jim Bockman, Ranger at the Blue Spring recreational area. At 1:30 a.m. on January 10, the alarm was activated and Ranger Bockman implemented his preparedness plan. River and rainfall data were collected, and at 4 a.m. he forecast a rise of 15 feet using self-help procedures supplied by the Weather Service's River Forecast Center at Slidell, Louisiana. Campers in the area were advised to move to higher ground. The project engineer in charge of construction crews at work on the river was advised and all mobile equipment was moved. Later additional rainfall data enabled Ranger Bockman to revise the crest forecast to a 19-foot rise.

In Alaska, a huge glacier lake on the Snow River suddenly broke through on September 16, 1974. A flash flood alarm system had been installed on the Snow River. The alarm gave the Alaska Disaster Office enough time to perform an orderly, calm evacuation. There was minimum property damage and no lives were lost.

Effective Use in Texas, New Jersey

At San Marcos, Texas, Civil Defense Director Jack Majors has yet another kind of action plan – and he used it well in November 1974. A flash flood alarm system was installed on Purgatory Creek because it's a good indicator of potential flooding in the local area. The alarm was triggered in the early evening of November 23, and Director Majors started monitoring his river and rainfall reports for the second major creek nearby. "The alarm gave us time for a quick and efficient evacuation of low-lying areas even though no major flooding occurred there," said Mr. Majors. That same night in other parts of Texas, 11 people lost their lives.

From the Township of Scotch Plains, New Jersey, a grateful Chief of Police, Joseph J. Powers,wrote:

"On February 2, 1973, we were called by the Plainfield Police and advised they had received an alarm from the sensor. Thanks to this advance warning, we were able to contact the State Highway Department, Civil Defense Headquarters, and our Public Works Department and arrange to block off known areas of flooding and divert traffic away from these spots. We were able to save unknown amounts of damage to motor vehicles which would have been caught in these floods and many extra manhours required to move them after the water receded."

More Installations Planned

The National Weather Service plans to purchase, install, and maintain about 100 "demonstration" alarm systems across the Nation. More than 35 are now operational with the remainder expected to be completed by 1977, including both radio and telephone systems. National Weather Service hydrologists make field surveys to determine the communities to be included in the "demonstration program." Priorities are determined by the frequency of flooding, past fatalities, flood damages, and the population in the flood plain. Past surveys show that about one out of every three potential sites can be adequately protected by a flash flood alarm system.

The National Weather Service requires: a location for the alarm station which is staffed 24 hours a day, 7 days a week; a location for the sensor that provides enough time for local authorities to respond to the flood threat; a river system which ensures that a single flash flood alarm system will verify the flooding for a particular area; and the community to adopt a preparedness plan. The community must sign a "Memorandum of Understanding" with the National Weather Service detailing the responsibilities of both. Communities can inquire about eligibility for the program by writing to the National Weather Service, NOAA, Silver Spring, Maryland 20910.

Communities Purchase Their Own

If a community is not eligible for one of the demonstration projects, or if it doesn't want to wait, there's an

alternative. The flash flood alarm system can be purchased by the community. The cost ranges from $3,000 to $4,000 depending on the model. Weather Service personnel will still help in locating the sites and establishing local preparedness plans.

After the Agnes floods devastated Howard County, Maryland, Civil Defense Director William G. Laricos acted to get a better flood warning system. Howard County has rivers for its northern, eastern, and southern boundaries and is traversed by two additional rivers in the center. Mr. Laricos carefully documented the areas of flooding and then began a campaign to adopt a county-wide warning system that would protect its citizens and both public and private property. Following coordination conferences with State and county officials, a four-phase Howard County Disaster Action Plan was implemented. Mr. Laricos and Joseph Goldman, NWS Regional Flash Flood Coordinator, set up a system of river and rainfall observers. The National Weather Service supplied two alarm systems for the Patapsco and Little Patuxent Rivers. In addition, Howard County purchased two additional flash flood alarm systems to complete the automatic monitoring of critical river levels in the county.

Hopefully, Howard County may never experience another Agnes flood, but it's ready. Communications systems have been improved, flood areas documented, a flood plain management program adopted, and a flood warning system triggered by the alarm is operational.

Tulsa, Oklahoma has also purchased and installed flash flood alarms. The rapid spreading of warnings to the public particularly about fast-breaking events, such as flash floods, is a perennial worry in Tulsa.

Bridging the Warning Gap

There are still situations where the most sophisticated warning systems won't do the job completely. The Camille tragedy began when many people were asleep. A reliable home alarm system – one in which a radio receiver can be turned on when there is a warning – could be the answer to that problem. A means of doing this is becoming available – the NOAA Weather Radio System. The system has the needed feature in the form of a tone alert by which all appropriately equipped radio receivers are activated when the forecaster in the weather office pushes a button. A continuous tone is broadcast for a few seconds and then the receiver volume is brought up and the warning is broadcast.

Working with the news media, local public safety officials, the Defense Civil Preparedness Agency, and other organizations experienced in dealing with disasters, the National Weather Service is striving to make communities safer from flash floods through the development and implementation of preparedness plans and operational programs. ■

Regional Roundup *(Continued from page 23)*

KINGSPORT, TENNESSEE

Wallace D. Pardue, Sullivan County Civil Defense Director, described by the Kingsport *Times-News* as a man "who has won a reputation as an organizer and doer in a little more than a year in the job," has been awarded one of the eight annual *Times-News* Awards by the newspaper.

Under a heading, "He Prevents Disasters Through Preparedness," the newspaper gave particular attention to Director Pardue's actions in the formation of three volunteer fire departments in the lower end of Sullivan County. The newspaper pointed out, in making the award, that Director Pardue "was instrumental in obtaining the State charters for the new fire departments, organizing training through the State Fire Marshal's office, and gaining fiscal recognition (money) from County Court."

SAINT LOUIS, MISSOURI

When an electrical power failure struck the Vaughn Senior Center, home for 129 persons, all over 62 years of age, they faced the prospect of an emergency evacuation from their quarters. Fortunately, power was restored in time to make this unnecessary. But as indicated by a letter of thanks from the staff at the Center to Civil Defense Director Sam Louis, the St. Louis Disaster Operations Office was on top of the situation with emergency housing, feeding arrangements, and personnel ready to manage the evacuation had it been needed. Director Louis credited the St. Louis Emergency Welfare Council, established as a result of On-Site Assistance recommendations by the Defense Civil Preparedness Agency, as a key resource in making possible the prompt response to the problem. ■

Practice Makes Perfect

By MILLARD IRELAND
DCPA Region Eight

The civil defense director of Fairbanks, Alaska, is a man who believes in emergency plans and planning, which is to be expected. But more than that, Jack Murphy is also a firm believer in exercising those plans. "An untested plan is no good", says Murphy. "When disaster strikes, it's too late to get out the plan and try to figure out what to do. Everybody involved had better know what to do, or you'll have chaos."

Director Murphy should know what he's talking about. He learned his lesson the hard way back in 1967 when the Chena River overflowed its banks and covered the downtown area of Fairbanks with at least six feet of water. Hundreds of people driven from their homes were sheltered at the University of Alaska.

So it was considered pretty routine when an emergency medical exercise was scheduled last June involving a simulated bus accident, the emergency staff of the Fairbanks Memorial Hospital, ambulance services, and military helicopters. The exercise critique pointed out minor flaws in the operations. But everyone declared that it demonstrated a high degree of capability for rapid and effective response in handling up to a hundred casualties. The evaluation proved to be correct.

Less than a month later Fairbanks Memorial Hospital received word from Director Murphy that there had been a bus accident in Mount McKinley National Park that had injured about 40 people. He informed the hospital administrator, Al Finneseth, that all injured persons would be evacuated from the scene – about 75 miles away – to the Fairbanks Memorial Hospital by helicopter.

Mass Casualty Plan Activated

Immediately Finneseth activated the hospital's Mass Casualty Plan. When the first helicopter arrived more than an hour later, a force of nearly a hundred personnel was waiting and ready for the casualties. Three choppers from Eielson Air Force Base brought the injured to the hospital grounds where six ambulances were waiting to take them to the emergency entrance.

The hospital lobby was designated the triage, or separation area, where injured were checked in, examined, and sent to appropriate treatment areas. Hospital staff members and doctors and nurses from throughout the Fairbanks area manned the various stations.

Within minutes of arrival, the most severly injured were in the emergency room or the x-ray room. The less serious were sent to first aid or observation rooms.

Several of the elderly patients suffered bone fractures. All the victims of the accident were riding in a bus on a wild life tour of McKinley National Park. They were members of the National Retired Teachers Association and the American Association of Retired Persons. One of the passengers said the roadway seemed to give way beneath the bus. "We were lucky. If we had gone off a few hundred yards earlier, we would have gone down a steep cliff and almost certainly everyone would have been killed." There was a single death in the accident.

When the rush was over and the situation had been assessed, there were 17 people admitted to the hospital and the remaining 15 had been treated and released.

Hospital Volunteers in Key Role

One aspect of the disaster drill held just a month before was especially valuable during the actual emergency. During the exercise, 14 ladies dressed in pink, representing the Fairbanks Memorial Hospital Auxillary, attended as observers. They did not participate but took careful notes on areas and activities in which volunteers would be helpful. When the real thing came along, they were ready. The Gift Shop in the hospital became the volunteer station from which help was dispensed as needed. During the crucial period, volunteers operated the

elevators manually, served as door tenders, assisted in the first aid treatment and emergency rooms, served large quantities of freshly baked cookies, fruit juice and coffee from the Gift Shop window to the hungry doctors, nurses and hospital staff (many of whom hadn't had anything to eat when the Mass Disaster Plan was activated), and to uninjured or treated and discharged victims of the accident. Volunteers checked on the whereabouts of each victim's personal possessions, assisted in taking admitted patients to their rooms, conforted patients, answered questions and ran errands.

Not the least important duty they performed was providing "tender loving care" for patients who had to be hospitalized for a prolonged period. This, however, seemed to be the stock and trade of all who worked in the care of the accident vicitms. Many of them commented that finding people who really cared made it worthwhile. And they also can be thankful that Fairbanks, Alaska, has a civil defense director who makes sure his community is ready to respond effectively to a disaster. ■

FAIRBANKS CIVIL DEFENSE DIRECTOR MURPHY (foreground) assists in the reception of persons injured in a bus accident in McKinley National Park.

Here's a digest of news items on civil preparedness topics:

MOVING AHEAD – "The Citrus County (Florida) Civil Defense Department, like many departments in county government, is faced with a shortage of funds. But director Louis A. Boswell thinks he can take up the slack with volunteer help," reports the *Tampa Tribune*. Says Boswell: "What I want to do is compile a list of people willing to contribute their time and talents during an emergency. Once I get that list I plan to organize classes in search and rescue, first aid, paramedics and communications." Boswell maintains there's an abundance of retired persons in the county with the needed skills. . . . Lansing Township, Michigan, appointed Lt. James Stomant as its first public safety director. Some of his most immediate tasks, reports the *State Journal*, will be to coordinate and cooperate with county officials in establishing a Civil Defense unit. . . . "A revamped St. Petersburg (Florida) Civil Preparedness Department has been given a budget boost and added manpower by the City Council to help it prepare for a hurricane or other disaster. The department now has an annual budget of $88,640 – 17 times what it had when heavy rains devastated the city last June," the *Times* reports. Since June, under the leadership of new civil preparedness coordinator Gene Gell, the department has set up evacuation routes, expanded the public warning and emergency operations systems, and developed a detailed plan of action for all kinds of emergencies. . . . In Adrian, Michigan, the City Council "repealed in its entirety Chapter 10 of Title I of the city code which had restrained the city from joining a new countywide system of civil defense which will be set up under state law," the *Daily Telegram* said. . . . "What Stuttgartians will recall as the 'Civil Defense' movement of the 1960's is coming alive under new management and a new, and perhaps more definitive, title, 'Emergency Preparedness,' " the Stuttgart (Arkansas) *Daily Leader* reports, noting the disaster program is largely being coordinated by county emergency services officer Raymond Riddell. . . . The Columbia, S.C. *Record* reports: A federal grant of $125,000 is scheduled to be given to Lexington County for the construction of a Civil Defense Emergency Operations Center, according to County Director of Public Safety Thomas F. Boltz. The item notes the grant "is reportedly the largest federal allocation ever made in the state for this purpose." . . . "For the first time in recent history," notes the St. Petersburg (Florida) *Times*, "civil defense representatives from all of Pinellas County's 24 municipalities gathered together to discuss hurricane evacuation." Pinellas County civil defense director Lyle Fox told the group his office is preparing 2,000 signs with "evacuation route" stencilled on them for distribution to the municipalities.

THE RADIOLOGICAL THREAT – "Director Fred Ikle of the U.S. Arms Control and Disarmament Agency warned the spread of peaceful nuclear technology could lead to the illegal production of 75 nuclear bombs a year in foreign countries by 1990. . . . Describing the dangers of nuclear proliferation and nuclear terrorism, Ikle told a congressional subcommittee the United States was particularly concerned about countries in the Middle East and Latin America diverting plutonium – a bi-product in energy reactors – into the secret production of nuclear weapons. . . . Ikle also touched on the risk of a terrorist group hijacking a shipment of nuclear fuel between a processing plant and a nuclear reactor. Theoretically (such a group) could . . . manufacture a crude atomic bomb." (*UPI Washington wire.*) "This risk (of terrorism) does present a dreadful danger for the future. We cannot now grasp what the implications might be. The danger of other countries acquiring nuclear weapons is also serious, and possibly more imminent," Ikle is quoted as saying. . . . The *New York Times* reports: "Because of possible future shortages of uranium, the (Nuclear Regulatory) Commission has proposed gradual adoption of plutonium as a fuel for the present generation of reactors and a new kind of reactor under development called the liquid metal fast breeder reactor. But a small group of experts, including Dr. Theodore Taylor . . . have argued that the planned conversion to plutonium as the basic fuel of the atomic age is highly dangerous because persons with little or no training could fashion homemade weapons if they were successful in seizing small amounts of plutonium." The *Times* article cites the case of a 20-year-old undergraduate science student who used publicly available reference works to design a nuclear device in his spare time. "I have come to feel the design and building of a bomb – assuming you had the plutonium – would not be much harder than building a motorcycle," the student is qouted as saying. . . . "Japan, the only nation ever to experience an atomic attack, has again backed away from ratifying the treaty to stop the spread of nuclear weapons," the *New York Times* reports. Japan insists on three conditions for ratifying the treaty, according to the *Times*. These are: that nations with nuclear arms make progress toward disarmament; that nuclear nations guarantee the

security of non-nuclear countries; and that Japan's capacity for developing peaceful uses of atomic energy not be restricted.

PLANNING – "A team of five federal and state civil preparedness specialists ended Friday a week-long study of Pawtucket's (R.I.) ability to cope with a large-scale disaster or emergency situation." (*Times*). . . . Reports the Hutchinson (Minnesota) *Leader*: "A resolution requesting that a team from the Minnesota Department of Public Safety, Division of Emergency Services assist the McLeod County Civil Defense Director in developing an 'action plan' for the county was adopted by the County Board of Commissioners." . . . "An action plan to aid citizens of Elizabeth City and Pasquotank County (North Carolina) in case of emergency will be prepared by the Civil Defense Agency, Office of Civil Preparedness. . . . Such a plan will be devised to improve the emergency readiness capability of the area, save lives, lessen suffering and preserve property during an emergency," reports the *Advance*. . . . EASTON PLANS FOR DISASTER is the headline in the *Redding Pilot*, Ridgefield, Connecticut, reporting on the first of a series of on-site assistance meetings. . . . When Carmen struck the Louisiana coast, "we had no way of receiving weather information here and didn't even know in which direction the hurricane was travelling," Iberia Parish civil defense director Joe Valenti told the *Daily Iberian*. Valenti noted an on-site inspection and study has now recommended that municipalities and the parish government form a single organization to channel information to the parish civil defense director in emergencies.

PERSONALITIES – *Alderman Arthur Mantle of Fair*view Heights, Missouri, commented on the appointment of a police chief to double as a civil defense director: "We should have a director who takes the position as his sole responsibility. In case of emergency, I would hope the chief of police would have enough responsibility with his own department. I would not want him to delegate his authority to a subordinate in order to take on an additional responsibility at that time." (*Post-Dispatch*, St. Louis). . . . Charles Adam, coordinator of the Wyoming State Disaster and Civil Defense Agency, resigned from his post, effective March 1, reports the *Post*, Denver. . . . Col. Lewis Nichols, USAF-Ret., is the new Disaster Planning and Operations Director for Wasco County, Oregon. (*Chronical*, The Dalles). . . . "Enlightened officials with emergency preparedness responsibilities must not succumb to the 'easy way out' and deemphasize war related training in excessive favor of the less onerous natural disaster subjects. Thy reality can only be changed by nuclear arms reduction or disarmament. What civil preparedness needs now is a healthier budget and more aggressive salesmanship at national, regional, state and local levels." (Derrell Quigly, director Pamlico County, North Carolina, in the *Pamlico County News*). . . . Evansville, Indiana's civil defense director, Clyde Cavanah, was called out of an interview with the *Courier's* Rod Spaw to handle a bomb threat at the Federal Building. . . . Eva Feder and her fellow members on the Civil Defense Advisory Board in Mt. Vernon, Indiana, presented the December pay of the members to Posey County Civil Defense Director Lee Austin as a gift to help with the purchase of communications equipment. (*The Democrat*). . . . Mrs. Connie Cox is Danville's (Illinois) first and only woman in the Civil Defense Auxiliary Police Department, notes the *Commercial News*. "I feel I'm providing a valuable service to the community," she said.

STRATEGICALLY SPEAKING – "Secretary of Defense James R. Schlesinger offered the Russians a swap today – U.S. restraint in developing advanced missiles," writes *AP* Pentagon correspondent Fred Hoffman. "They currently have the initiative," Hoffman quotes the Secretary, "and it is up to them to decide how much additional effort the two sides should put into these programs." This statement is contained in the Secretary's Annual Defense Report. Despite the U.S.-Soviet arms limitation agreement, Schlesinger said, a fully-deployed new generation of Soviet missiles could come to jeopardize the survival of our fixed-base ICBM silos by the early 1980's, according to the *AP*. . . . *UPI* pointed out that the Annual Report also noted "proposals made last year to evacuate entire cities in times of crisis had been tested and proven feasible. . . . Schlesinger said he planned to push ahead with detailed planning to avoid heavy casualties in the event of nuclear war." . . . "The launch of a Soviet attack at selected U.S. military targets would result, according to Defense Department testimony before Congress, in 750,000 dead and 210,000 injured in the Greater St. Louis Area, the *Kansas City Star* reported. "Use of fallout shelters," the writer adds, "could reduce the St. Louis casualties to 51,000 dead." The casualty estimates came from a declassified transcript of Congressional hearings requested to explain a "shift in U.S. strategy which calls for re-targeting U.S. missiles to hit Soviet missile sites instead of cities," the *Star* reported. Defense Secretary Schlesinger, the account points out, said, "the objective of such a strategy is to place the United States in a position to respond to any kind of attack, 'not necessarily by going into a major counterforce strike.' " – **Joseph V. Quinn.**

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PEOPLE PEOPLE PEOPLE

...Working effectively with groups

emergency public relations

BY VERNE PAULE / DCPA Region Seven

"I could teach a public relations course like teaching a course in ethics."

That's what Stephen H. Baer, Manager of Public and Employee Information for the Southern California Gas Company of Los Angeles, told a Civil Preparedness Career Development Course conducted by the University of Southern California.

Southern California Gas is a major subsidiary of Pacific Lighting Corporation. The gas company is the largest distributor in the United States in the number of customers served – more than 3.3 million customers.

Meeting a Public Trust

According to Baer, the public relations policy of the Southern California Gas Company is "in keeping with its role as a public utility entrusted with the public interest. The Company cooperates with news media during incidents involving, or suspected of involving, natural gas, or where Company facilities or working personnel are involved."

Baer emphasized that the company's policy requires that the "ranking management employee at the scene of an emergency has the initial responsibility for answering questions of press representatives concerning the incident."

Baer stresses that credibility is essential for the success of his company's public and media relations. "Be open when you deal with the press. Don't be arbitrary," he says, adding: "You tell the press what is accessible and what is not, and you treat all media people alike. The press will not forgive being lied to. Remember, the media can be helpful to you and your company."

A special Baer warning: "Stick by your ground rules with the press. Don't deviate between *The New York Times* and the Santa Cruz *Sentinel*. Treat them alike and be consistent in your treatment until the ground rules you established have to be changed. If you have a press briefing at 9 a.m., make sure everyone knows you're going to have a press briefing at 9 a.m." He used as a "case study" the Aliso gas well fire.

When the January 19 Aliso Canyon gas well fire near San Fernando occurred, Southern California Gas set up a press trailer which was a centralized source of information. Liaison was established between the fire site and the company's information office. Typewriters, desks, and telephones were set up to accommodate the media for the incident, which made national news.

"We even put up a 'john' near the press trailer, served coffee and food to reporters," Baer said.

The Aliso fire, which caused no injuries, required the company to call Paul "Red" Adair, the Houston-based expert on oil and gas fires. Adair (whose life was portrayed in the motion picture, "Hellfighters," starring John Wayne) arrived at the scene about 12 hours after the fire began. There was a large gathering of press representatives present when he arrived.

Adair and his son, Jimmy, helped bring the huge well leak and fire to a dramatic end 10 days after it began.

Involving the Public Information Man

Everyone wanted to get an interview with Adair. "We got him to agree the first day that he would brief the press after he inspected the site," Baer said. "He met with our people, made his inspections, and I insisted that our public information guy be in those meetings. When you

handle an incident, your public information man must be clued in. When he represents you with public statements, he should know what it is you're trying to do. Then what he gives to outsiders is consistent with what you planned."

Baer explained that in the beginning of the news coverage, and with limited access to the fire scene with only one 4-wheel-drive unit available, it was suggested by the press that pool coverage be considered. The press and the company agreed that, as long as no one got preferential treatment, the arrangement was fair and reasonable.

"One thing we always have to cope with in an emergency is rumor control," Baer said, but he added that, in the Aliso gas well fire, the media reacted very well. "We were working 24 hours around-the-clock with public information people," Baer said. "We had one problem. One TV station wanted an interview and would not share it. We said, 'no way.' "

The Strain Takes Its Toll

In elaborating on the extensive press coverage of the fire, Baer said: "For the first seven days everything worked fine, and then people started to get a little bit on each other's nerves." He cautioned against working 18 hours a day or longer.

"You get tired and your fuse gets short," he said. "At the same time the media is reflecting what I think is a basic American trait: 'Why the hell can't you fix it?' (end the fire). After a while, newsmen will be asking that kind of question. You're tired and you read into that question a challenge in terms of your expertise. Try not to take it personally. Try to realize when you start to run down physically that out of that kind of confrontation, between the press and you or one of your people . . . out of that could come an argument that could be lasting and on-going. In such a case, you have lost something you have cultivated rather hard - a mutually good relationship with the press."

"On the 8th day of the fire," Baer said, "the press questions started to have an edge to them and our people started to think how can we get those (bleeps) out of here?" In retrospect, he added, "I don't know how you deal with that – it's a problem that faces you the longer the incident lives."

Baer emphasized that industry and government should have a written emergency information plan. "My job is to be responsive to the media," he said, "and represent my company to the best of my ability." ■

BILLOWING FLAMES silhouette firemen on the first day of the Aliso Canyon gas well blaze.

Every year more than 100,000 people are slashed, mangled, or speared – in their own yards – by power mower accidents.

Hans Grigo, power mower expert for the National Safety Council, points out: "Adults who were accustomed to using hand mowers have accepted the convenience of a power mower, but they don't fully appreciate the difference in power or the potential for danger." People don't see that whizzing blade under the power mower deck so they literally forget it's there – moving at speeds up to 200 miles-per-hour and able to cut through a shoe like butter.

You're already probably thinking, "That's not me – I'm always careful." But before dismissing the warning, check your mowing techniques against the following list of safe mowing suggestions. Then make sure the suggestions are read by others in your family who use a power mower.

SAFE MOWING TECHNIQUES

■ *Know What You Are Doing*. Read the owner's manual carefully, and make sure you know how the machine operates and how to stop it quickly in an emergency. Never let a child or other inexperienced person operate the mower.

■ *Clear the Area*. Remove all stones, wire, and other foreign objects from the lawn before you mow. Make sure there are no children or other bystanders in the yard who could get hit by flying debris or who could distract you.

■ *Prepare the Machine*. Make sure the mower is in good condition. Inspect it carefully and follow the manufacturer's maintenance and storage instructions. If it's a self-propelled mower, disengage clutches and shift into neutral before starting the mower. Fill the fuel tank before you start. Never add gasoline to a mower that is running or hot. Stop it and let it cool first.

■ *Watch Your Feet*. Make sure your footing is firm and the machine will be stable as you start the mower and adjust its speed. Don't use the mower if the grass is wet and slippery. While you mow, keep your feet clear of the machine. Never cut grass by pulling the mower towards you.

■ *Beware of Thrown Objects*. As you mow, watch the grass ahead for foreign objects. Don't let yourself or anyone else get in line with the discharge chute, and be careful about discharging against curbs, fences, or walls from which debris might rebound after leaving the mower. Using a grass-catcher bag helps protect against discharge missiles.

■ *Be Careful on Slopes*. When using a walk-behind machine, cut horizontally along slopes, not up and down. This prevents your feet from slipping under the mower if you lose your balance, and eliminates the possibility that the mower will come tumbling down on you. But on a riding mower use the opposite method to take advantage of its greater fore-and-aft stability; cut up and down on slopes so that the mower will not tip over as readily.

■ *When Not Mowing, Turn It Off*. If you must leave the mower even for a moment, turn if off. Stop the engine or disengage the blade before pushing or driving the mower across drives, walks, or roads, or any protruding object. Turn it off before emptying the grass bag or trying to unclog the blade or discharge chute. Never tip the mower for an inspection without first stopping the engine and disconnecting the spark plug.

■ *Use Extra Care on Riding Mowers*. Make sure you're familiar with the controls. Watch where you are driving and be extra careful when backing. Don't carry passengers and don't attempt to operate the machine when you are not in the driver's seat. – **Sandra E. Farrell.**

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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

viewpoint

Three years ago we initiated MOBDES – the Civil Preparedness Mobilization Designee Program. The purpose is to make use of the valuable military and civilian skills of military reservists to strengthen the emergency operations capability of local and State governments and the eight DCPA Regional Offices.

We had high hopes then for success of the program. Our hopes have been fulfilled in participation at present by some 1,100 Army, Air Force, and Marine Corps reservists throughout the United States.

These reservists are helping make their communities, States, and regions better prepared to cope with peacetime disasters or nuclear attack. At the same time, they are advancing their reserve careers. They earn 50 retirement points annually through on-the-job work periods and 12-day training tours. They serve within commuting distance of their homes, and they train for the same jobs in the same agencies where they would serve in a wartime mobilization or (on request of civil authorities) where they could volunteer to serve in a major peacetime disaster.

In non-emergency periods the reservists take part in the planning activities of the agencies to which they are assigned. When disasters threaten or strike, they augment the regular civilian staffs of the agencies.

There are over 700 Air Force reservists in the program, including some 100 enlisted personnel; about 375 Army reservists, including about 35 enlisted personnel; and 17 Marine Corps officers.

About 70 percent of the reservists are serving with the civil preparedness agencies of their local governments; 20 percent with State government agencies; and the remainder with the 8 DCPA Regional offices.

Response concerning the program by a large majority of the participating reservists has been enthusiastic. Maximum benefits have been achieved by those civil preparedness directors who have recognized the inherent advantages of the program, and have put forth imagination and effort to attract reservists and to apply their talents and experience effectively.

Many examples could be given of benefits derived in the MOBDES Program since its inception. Here are just a few:

- In southeast Texas, five reserve officers are working as a team to develop a prototype Crisis Relocation Plan for Jefferson and Orange Counties.
- In Iowa, a reservist spent his annual two-week tour of duty updating the Wapello County fallout shelter survey.
- In California, a reservist assists in administration of the Huntington Beach Emergency Operations Center.
- In Oklahoma, a reservist assigned to the McAlester civil defense agency was one of the first on the scene at a July 1973 riot and fire at the Oklahoma State Penitentiary, and instituted emergency actions. He has been involved also in emergency operations during and following two tornadoes, and in a widespread search for a missing rancher.
- In California, a reservist studying for a doctorate in physiology is updating the Marin County Medical Disaster Plan.

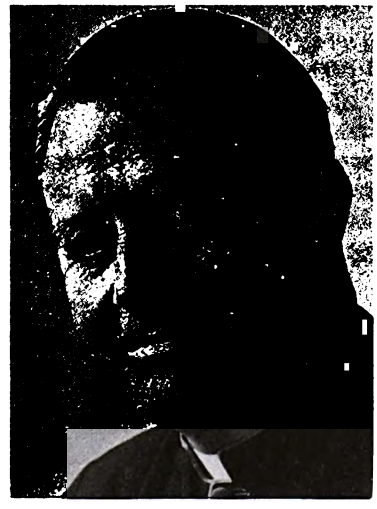
We are well satisfied with results of the program, but assignments still are available. I therefore urge that additional qualified reservists volunteer. Applicants must be members of the Individual Ready Reserve, E-6 through colonel; have two years remaining before mandatory separation from the Ready Reserve; and live with commuting distance of the civil preparedness agencies where they desire to serve. Interested reservists should apply directly to the appropriate civil preparedness agency.

John E. Davis
Director

Disciples in disaster relief

The Catholic Church

By REV. MSGR. LEO J. COADY
Chairman / National Catholic
Disaster Relief Committee



This is the second article in a special FORESIGHT series on religious groups in the United States that have organized themselves to provide timely assistance to the victims of major disasters.

In 1968, in response to a request from the Catholic Bishops of the U.S., the National Conference of Catholic Charities (NCCC) convened a committee of representatives of various national Catholic groups involved in some manner in providing assistance at times of disasters. The NCCC was asked to organize this committee in view of its involvement with community resources, its relationship with the Red Cross, and because of its network of local agencies throughout the country – 386 local offices with more than 60,000 personnel, of whom less than 20,000 are paid staff.

Basic Functions Described

Thus was born the National Catholic Disaster Relief Committee. The Committee has a sevenfold function:

1. To provide a national Catholic identity for local activities in time of a disaster.
2. To provide an aegis with which local activities can relate in time of a disaster.
3. To provide information and consultation for local activities at times of disasters.
4. Disseminate information about local needs and activities.
5. Coordinate activities of Catholic groups in times of disaster.
6. To provide a channel for distribution of assistance to disaster areas.
7. To relate national Catholic activities with other national organizations.

Since the Committee first met in St. Louis in September 1968, it has endeavored to implement these functions, and has in the interim taken on a few additional roles. Its efforts, for example, have become more ecumenical in character. Another new role, not foreseen in 1968, is the increasing tempo of its activities in the formulation and implementation of disaster relief legislation.

Involved in All Major Disasters

In the past six years the Committee has been actively involved in all major disasters that have struck in continental United States and also in Puerto Rico. This involvement took the form of personnel recruitment, of consultation, of publicity and public relations, and of solicitation and distribution of funds for disaster relief. The Committee has assisted in organizing a regional Disaster Relief Program for the Gulf Coast area. It has

cooperated with the Red Cross and the various voluntary agencies concerned with disaster relief in the development of a cooperative network of mutual assistance. It has worked closely with public agencies in the implementation and improvement of private-public cooperation. It has served as a channel for the distribution of more than $1 million in relief funds to dioceses in areas struck by natural disasters.

The Committee works in close cooperation with the Society of St. Vincent de Paul, a national body of more than 33,000 volunteers in the various Catholic parishes of the country. In addition to the personal services of its members, the St. Vincent de Paul Society also manages a network of Stores in many of the urban centers where used clothing and household goods and furnishings are collected and sold at nominal cost. In times of natural disasters, these Stores are a ready source of clothing and furniture for disaster victims. In addition, St. Vincent de Paul Society members, because they are already organized and dedicated to personal service, can be quickly mobilized for community service in times of disaster.

Key Roles Discussed

After more than five years experience, the National Catholic Disaster Relief Committee has arrived at certain basic convictions and some tentative conclusions as to its role in natural disasters.

The Church has a *definite* and *specific* role in disaster relief work, especially in three areas:

■ In the 72-hour period *immediately following a disaster*. This is the time when those affected are still in a state of shock. This is a time before national governmental and relief agencies can establish base operations in afflicted areas. This is also the time that is usually required for the large-scale relief efforts to be fully operative. This is the time when the presence of the Church, especially the parish priest, is most needed. This is the time when immediate financial help or food or clothing will be most needed.

■ After the large-scale relief efforts have completed their work, and the time for *long-range adjustment* has begun. The efforts of the Church and her agencies will often be required to assist in that adjustment. This may involve helping families get settled and adjusted in a new house, perhaps a trailer or mobile home; it may involve formation of new friends in a new neighborhood; it may involve adjustment to new kinds of employment.

■ The *pastoral dimension* of disaster relief. Often, in the face of overwhelming disaster, the calming and healing influence of religion and religious practice is the one thing a person can cling to. It is important, therefore, for a diocese to communicate quickly with the priests in the parishes, to see that they are not harmed, to be sure that facilities are available for Mass and religious services, to make a school operative as soon as possible if the parish has a school. This helps keep children occupied, and enables parents to be more free to devote their time to rehabilitating their own homes.

Ecumenical Dimension Emphasized

There is an important *ecumenical dimension* to disaster relief work. For the past five years representatives of major religious bodies with a disaster relief program have met regularly with the American National Red Cross. These meetings have resulted in a better understanding and closer cooperation of efforts in order to avoid needless duplication. Last year regional meetings were held in Atlanta, San Francisco, St. Louis, and Boston to bring this same pattern of interfaith cooperation in disaster relief to the local level. This year many more regional and local meetings are being organized in order to plan effectively on the local level for future disaster contingencies. This kind of interfaith effort can only result in a better spirit of mutual cooperation of all segments of a community. Our Committee sees this ecumenical dimension of disaster relief as one of the most important developments of recent years.

Organization, Procedures Outlined

The National Catholic Disaster Relief Committee consists of a total of 17 persons, representative of various sections of the country and of a variety of Catholic activities. It relies on the staff of the National Conference of Catholic Charities in Washington, D.C., to supply staff support and assistance. When a major disaster strikes anywhere in the country, contact is made by phone with the Bishop of the Diocese and the local office of Catholic Charities. An immediate assessment is made of the extent of the damage, the number of victims, the ability of local resources to meet the needs. If outside assistance is needed, consultants may go to the area affected to advice the local church authorities. Volunteers are recruited as they are needed, and some immediate financial help may be made available from the Committee's small emergency reserve. If the disaster is of major proportion and large-scale help is needed, the Committee may launch a national appeal through the local dioceses. This was done at the time of Hurricane Camille in 1969 and Storm Agnes in 1972.

The Committee meets annually in December to assess its performance in response to disaster needs, to plan for future needs, and to develop programs for recruitment and training.

Disaster may strike at any time, at any place. The ministry of Christian service in these times of need is part of the mandate of Catholic Charities to carry out the Lord's command to love and serve God and neighbor. It is the hope of this Committee that it will be ready whenever called upon to serve. ■

LAW

Leisure

...and the Safety Business

★ ★ ★ ★ ★ ★ ★ By JOHN I. BOTT ★ ★ ★ ★ ★ ★ ★

CAMPING SAFETY is one of the relatively new priority targets of the National Safety Council. This photo was taken at Groton State Park, Vt.

PREPARING TO TESTIFY on safety legislation before the House of Representatives are three National Safety Council representatives: Counsel Harry Rosenfield (left), President Vincent L. Tofany, and Director of External Relations Robert Currie.

This is the third and final article in a special FORESIGHT series on The Safety Business as conducted by the National Safety Council – America's largest non-profit business devoted totally to safety.

A basic tenet of the National Safety Council when it was founded more than 60 years ago was that *people* – not laws – make effective safety programs. But as the population grew in the United States – from 97 million in 1913 to 213 million today – and as American society became increasingly complex, safety legislation inevitably became a factor in the safety business as practiced and promoted by the Council.

The Council has been especially active in providing guidance concerned with safety legislation in the last two decades. Council representatives, for example, testified in support of the Traffic Safety and the Highway Safety Acts which became law in 1966 and put the Federal Government into almost all aspects of vehicle safety. The scope of the Highway Safety Law is wide. It spells out Federal standards governing periodic motor vehicle inspection, motor vehicle registration, motorcycle safety, driver education, driver licensing, codes and laws, traffic courts, alcohol in relation to highway safety, traffic records, emergency medical services with respect to transportation, police traffic services, debris hazard control and cleanup, pupil transportation safety, and accident investigation and reporting. These areas are administered through the National Highway Traffic Safety Administration (NHTSA). The Federal Highway Administration (FHWA) directs programs related to the identification and surveillance of accident locations, highway design, construction and maintenance, and traffic engineering services. Both NHTSA and FHWA, which are located in the U.S. Department of Transportation, are also involved in pedestrian safety.

Council Testifies on Safety Legislation

The National Safety Council also presented major testimony to Congress on the controversial issues involved in proposed legislation concerned with occupational safety and health. Ultimately, the Congress passed the Occupational Safety and Health Act (OSHA) which was signed into law by the President in 1970. Council input was developed as a result of many years of discussions of work-related safety problems among the Council's Industrial, Labor, and Farm Conferences. OSHA authorizes the Department of Labor to establish safety standards applicable to business establishments, and provides for the enforcement of those standards. In this latter respect, there are 880 Federal and 2,650 State compliance personnel that are inspecting establishments covered by the act.

OSHA's early thrust was directed at improving safety in mechanical areas in the industrial world. But technology, constantly on the move, brought with it additional problems, each demanding attention. For example, tuberculosis, fibrosis, and cancer have been found among workers in asbestos, vinyl-chloride, and synthetic paint plants. In some plants, excessive noise levels have caused loss of hearing among workers. The Council is now providing technical data and systems designed to reduce the incidence of these on-the-job health hazards.

To promote compliance with the law within business and industry, the Council developed and made available to its membership an OSHA checklist which enables every business to determine its compliancy status. A monumental effort – the checklist comprises 17 volumes for general industry – it spells out to any employer exactly what to look for in his own plant.

OSHA is not without its critics who claim it is not yet an effective vehicle for the control and prevention of occupational injuries and illnesses. With this law, as well as with other safety legislation of concern to the National Safety Council, representatives of the Council take part almost every year in Congressional oversight hearings on the efficiency of safety laws – how they work in practice, what parts are no longer required, and what areas need reinforcing. Such hearings usually result in amended legislation or a change in administrative procedures aimed at more practical and viable safety programs.

Pushing for Greater Camp Safety

Even in field of leisure time safety legislation, the Council has been active. Council representatives joined those of other organizations in supporting the adoption of the Youth Camp Safety Act, which was approved by the House of Representatives in mid-April. The Federal legislation is in recognition of a condition in which only a few States are considered to have adequate laws covering standards of health and safety in summer camps. The potential safety problem becomes readily apparent when one realizes that each year an army of youngsters, estimated as high as 8 million, attend the almost 11,000 summer camps throughout the Nation.

Other leisure-time activities, and the dangers associated with them, also have drawn the attention of the National Safety Council. Last year, for example, 25,000 persons lost their lives in the fresh air and waters of our land. Surprisingly enough, despite all the instructions on water safety given to Americans through the years, drownings were a major part of the fatalities. The Council's Public Safety Conference has increased its programming in this critical area. Major projects include:

■An extended study of the attitudes of recreational boat operators with respect to the use of personal flotation devices. This was performed on a contract for the U.S. Coast Guard.

■The establishment of a central repository for all boating safety educational materials. The Council has prepared a directory of boating safety educational materials which was released this year.

■"Operation Waterproof 4th Grade," a project of the Council's Water Safety Committee, has as its objective the teaching of every youngster a basic swimming skill no later than the fourth-grade level.

Bicycle Safety Draws Attention

Nor has America's long-time love affair with the wheel been neglected by the Council. Aside from the 131 million cars, trucks, and buses, and the 5 million motorcycles on our highways, some 80 million bicycles are in use today. Last year alone more than 15 million bicycles were sold in the United States. The Council's Youth Conference, consisting of representatives of such organizations as 4-H, Future Teachers of America, Future Farmers of America, Future Homemakers of America, Boy Scouts, Girl Scouts (organizations with an outreach to 40 million young people), has worked to keep pace with the growing need for bicycle safety. Last year the Council's Youth Conference:

■Completed its first full year of the "all about bikes" program, a 6-hour course of instruction for use in elementary schools.

■Developed the "Bike Book," outlining 12 rules of the road for bicyclists. Among others, the "Bike Book" has been adopted by the Boy Scouts of America where it has reached 2½ million scouts and 1½ million adults.

■Produced, in a cooperative effort with a fast-food chain, a 28-minute film in a bike safety format which was made available for distribution to 500 television stations.

And so it has gone, and still goes, with the National Safety Council . . . from concern for greater safety in the workplace, to safety promotion in the highways, the homes, the play areas – in virtually every place where there is activity and danger – and to the legislative bodies throughout our land . . . always preaching, teaching, promoting, selling, demanding one thing: greater safety for the people.

On October 17, 1913, a *Chicago Tribune* reporter put it this way in a front-page story announcing the formation of the National Council for Industrial Safety, predecessor to the National Safety Council:

"One of the most important offices of the world was quietly opened this week . . . a great national campaign which may easily result in the savings of at least 10,000 lives a year . . . the number of members will run into the thousands."

All in all, an accurate early assessment of the role of the National Safety Council in the safety business of America. ■

SALESMANSHIP

By JACK BUDD / Public Information Officer / Office of Civil Defense / Dothan-Houston County, Alabama

"Civil Defense Director and Sales Manager."

This title may sound quite odd to civil defense coordinators and directors.

It takes a great deal of time and effort to carry out civil preparedness training projects, develop communications and Emergency Operations Centers, coordinate agencies involved in day-to-day civil preparedness, help communities get and utilize surplus equipment, build Skywarn capability, encourage funding, and on and on.

But an effective civil defense director must also be a skilled sales manager.

Unless the civil preparedness program is properly "sold" in the community, the director may find difficulty achieving allocations, cooperation, and participation – all vital for a vibrant program. In the absence of some disaster that brings the civil defense department to the attention of the public, it is too often a "silent partner" in the community. Busy, dedicated, but silent and unknown.

A probate judge in one Alabama county was heard asking, "What's all that civil defense stuff down there?" referring to the modern Emergency Operations Center below his office. He'd not been in the basement of the courthouse to observe first-hand how vacant space, enclosed in what had been gray concrete walls, had been converted into a modern communications center for civil preparedness, a center that has communications with the whole Nation and goes into action in a variety of emergencies.

He criticized the department's staff and expenditures. "We never had anything like that," the judge declared, referring to previous failures of civil defense efforts in the history of that county.

Three months after a new county commission chairman took office in one county, he had to admit he was unaware of the county's Emergency Operations Center.

Why didn't that judge or that chairman know about their county's facilities and programs? Naturally, some of the fault can be put on their shoulders for not finding out. But the civil defense directors must also share the blame for not being effective salesmen.

By human nature, people are apt to criticize that which they know little about. It's another one of the jobs of the civil defense director to keep them in the know, to make the officials and citizenry aware of local civil preparedness.

People visiting the Houston County Emergency Operations Center for the first time go away amazed, highly impressed, and proud of what they have seen. Facilities, programs, and projects are publicized in the local press. Officials are urged to visit the Emergency Operations Center often, to keep themselves abreast of its continuing improvement. Then when it comes budget time, when funds are needed for special projects, or approval is needed from the city or county for civil preparedness, we are dealing with knowledgeable, impressed, satisfied "customers" willing to buy and approve requests.

It's a matter of salesmanship.

Mr. Coordinator-Sales Manager, you have a product. It's civil preparedness. How's your salesmanship? ■

Big George by Virgil Partch / courtesy of Field Newspaper Syndicate

"Well, don't just stand there. Get the paper before it gets wet."

Mobile home shelter

STANDING AMID DEVASTATION is the prestressed concrete shelter-clubhouse built by Glen E. Gilpin of Emporia, Kansas. This photograph by Harry Bath of Independence, Missouri, was taken shortly after a tornado roared through Mr. Gilpin's Lincoln Village Mobile Home Park.

Photo courtesy of Colorado Prestressers Association.

For years mobile home parks have been the scenes of death and destruction when blasted by high winds from hurricanes and tornadoes. Even with proper mobile home tie-down systems recommended by the Defense Civil Preparedness Agency and other organizations, mobile homes have been, and still are, vulnerable to devastating tornadoes.

For years preparedness officials have urged owners of mobile home parks to provide special storm shelters for residents. And for years the pleas have fallen mostly on deaf ears, primarily because of financial reasons. It costs money to build a special shelter in a mobile home park.

But in east-central Kansas, an area keenly familiar with the devil winds of tornadoes, there is a man who listened

and acted. He is Glen E. Gilpin, owner of the Lincoln Village Mobile Home Park of Emporia, Kansas.

Scores of people owe their lives today to the foresight of Glen Gilpin.

A Plan for Safety

Mr. Gilpin started construction of Lincoln Village Mobile Home Park in 1971. Within a few months he decided a clubhouse and swimming pool were needed to provide the services desired from such a park. At the same time, he felt it was vital that park residents be furnished a safe shelter from storms and tornadoes.

"The easy answer would have been to build an underground shelter," Mr. Gilpin said, "but the terrain in the park has several tough rock ledges. Also, a single-purpose shelter would have been fairly expensive, so I decided to build a shelter that could double as a clubhouse above ground."

The decision was made, but Mr. Gilpin was soon to learn that design criteria for the type of shelter-clubhouse he had in mind were not all that plentiful. How large should the building be? How strong? The answers weren't available from the City Building Inspector's office or from the City Engineer. Finally, after contacting the Kansas State civil defense agency, he was placed in touch with engineers who had done protective design studies for the Defense Civil Preparedness Agency. There weren't any quick, "school solutions" to his questions, but he *did* learn that the size of the building to accommodate 137 families in the park in an emergency should be about 2,800 square feet, and was given three levels of protective design:

Three Options Studied

1. The first level, to be absolutely safe, involved going below ground level or building a structure that could withstand a free field wind velocity of 360 miles per hour, a pressure drop of 3 PSI in three seconds, and be able to withstand the penetration of a 50-pound missile thrown by a wind of 360 miles per hour.

2. The second level, he was told, was moderate protection. This is protection against a free field of wind of 200 miles per hour, a 1.2 PSI drop in four seconds, and no missile protection. Mr. Gilpin was told this level of protection would be safe against direct tornadoes about 25 percent of the time.

3. The third level was for protection against a near-miss tornado, involving a design that would protect against a 150-mile-per-hour wind, and no design for pressure drop.

SPACIOUS INTERIOR of the shelter-clubhouse that saved 80 mobile home residents from a vicious tornado.

Mobile home shelter

Mr. Gilpin discussed the matter with his architect who felt that a prestressed concrete building would come close to the first level of protection.

Prestressed Concrete Structure Selected

A manufacturer of prestressed concrete structures was contacted and became interested in the project. His records, and records of the Prestressed Concrete Institute, showed that two prestressed concrete structures had, in fact, survived intact a large tornado in the Chicago area. In this type of structure, reinforcing rods are welded together in such a manner that *every* weld in the building would have to break before the structure would collapse.

The balance of the design was simple, Mr. Gilpin said: No south or west openings of consequence. (This is where the wind would come from most of the time.) Put the windows under a 10-foot overhang on the north exposure so that, with a sudden pressure drop, the windows would explode outward leaving the concrete overhang as protection.

The 70- by 40-foot shelter-clubhouse was built in 1973 at a cost of $40,000. It received its baptism of fire on June 8, 1974, when a tornado, with winds estimated at 450 miles per hour, smashed into the trailer park.

80 People Get to Shelter

The tornado formed so quickly that the city's warning sirens sounded only a few minutes before the storm roared across the mobile home park shortly after 5 p.m. Still, about 80 people had time to get to the shelter-clubhouse and safety. Outside the shelter, six persons were killed, five in the mobile home park, in less than two minutes.

The tornado piled some mobile homes three deep. One mobile home was carried 80 feet by the winds before it smashed against the top southwest corner of the shelter-clubhouse. Of the 101 mobile homes in the park at the time, only 2 were undamaged by the storm. Although a couple of the mobile homes could be repaired later, most were totally demolished by the storm.

Damage to the shelter-clubhouse was negligible. No windows were blown out. Only a window in the west door was cracked, and a wooden stoop over the door lost about 30 shingles. A new paint job even hid the black marks left when the airborne mobile home smashed into the shelter-clubhouse.

Today the park has few reminders of the vicious storm, but the preparedness lesson stands even stronger in the mind of Glen Gilpin.

"All mobile home parks built in storm-prone areas should have correctly designed shelters," he insists. "It can be done and done attractively."■

'It's not

"This booklet was compiled to show that the Excess Property Program is working." Thus does George Doak introduce a modest volume of 25 pages which contains photos, captions, and explanations of all the surplus and excess property which his Department of Emergency Services has been able to acquire through the Defense Civil Preparedness Agency.

Mr. Doak is the Emergency Services Director for Mason County in the State of Washington.

Mason County in west-central Washington is not the most populous county in the State – about 20,000 people – but it does cover a lot of territory, mostly forest and rugged mountains. Aside from the county seat of Shelton, there are few fire hydrants in Mason County, and those are mostly in new housing developments. Consequently, the excess property items most heavily in demand by local fire districts are trucks on which tanks can be mounted for carrying water to remote fires.

Military trucks serve peacetime needs

By a fortuitous twist of fate, the 4X4 and 6X6 trucks obtainable on the program are ideally suited for adapting to this fire-fighting function. They can also be converted to excellent hose carts and pumpers.

George Doak points out: "In districts with a large, sparsely inhabited land area, fire personnel are called for any type of emergency – not only fires, but flooding, wind damage, search and rescue, and first aid. The Excess Property Program has provided back-up vehicles for fast

excess here'

By MILLARD IRELAND
DCPA Region Eight

mobile service ideal for the variety of terrain likely to be covered."

Mr. Doak also points out that the rural fire districts in Mason County share a common problem regarding water supply. To resupply the tanks or their fire-fighting equipment, they must pump additional water from lakes, rivers, or creeks in the vicinity. One of the prime advantages of the 6X6 converted cargo trucks is that they can be driven through an unimproved, roadless, brushy area to reach these sources of water. Another advantage is that a tank with a capacity of 2,000 gallons can be installed on these vehicles, compared to a tank of 500-gallon capacity common on most commercial fire-fighting equipment.

Mason County embraces a thousand square miles. It contains 12 fire districts, plus the Shelton City Fire Department. In George Doak's view, a nuclear attack on this country poses a real problem in fire control to his jurisdiction because of the unusually heavy forestation. Aerial bursts near the capital City of Olympia, which is in the neighboring county, would almost certainly ignite hundreds of fires in Mason County. He strongly believes that both the City of Shelton and the county fire districts will need every bit of fire-fighting equipment they can get. Perhaps "will need" is the wrong tense. George quite emphatically thinks the need is here and now, and he has set about to acquire everything available to him as rapidly as possible.

Here is a quick box score of his accomplishments in that department in the last couple of years: 60 pieces of Excess Property, with an original acquisition cost of more than $200,000. This includes 3 fire trucks, 17 6X6 cargo trucks, 12 pickup vehicles, including vans and carry-alls, and 11 emergency power generators. This is a particularly important item in an area where power failures are frequent, owing to excessive snowfall and very high winds. Mr. Doak says he could use 50 more. In addition, he reports the county has acquired more than $36,000 worth of surplus property.

400 emergency workers are ready

While the Mason County Department of Emergency Services has only 2 people on a full-time basis, Director Doak and his deputy, Mrs. Merle McNeil, it can count on nearly 400 people who are on call 24 hours a day in case of disaster. Among these are organized groups such as the Shelton Trailblazers, a cycle club; Search and Rescue Dog Association (SARDA); operators of four-wheel-drive vehicles; scuba-diver teams; Shelton Yacht Club (there are hundreds of miles of salt-water shoreline in Mason County); Shelton Flight, Inc., a local flying club; Emergency Medical Training (ETM) personnel; various Explorer Scout groups; National Guard ground troops, and helicopter operators.

In addition to the equipment Mr. Doak has obtained through the Excess and Surplus Property Programs of DCPA, there is also an abundance of equipment available from the private sector, such as lumber companies and heavy hauling concerns.

It occurred to George Doak that getting a big bundle of Excess and Surplus property for the fire districts of his county was all well and good, but it would be even better if certain key people in the community were aware of just what the program meant to the county in dollars and cents, as well as emergency capability. So he and Mrs. McNeil went to work compiling a visual record of what has been acquired and the uses being made of it. The booklet is entitled simply, "Excess Property."

"It may be excess property to some people, but it's not excess here," Mr. Doak emphasizes. "We really need it *now*." ■

Wide World Photo

PEOPLE PEOPLE PEOPLE

working effectively with groups

How many times have you heard someone say, "Coordination is the name of the game," or read from a report that "more coordination is needed with other organizations"?

Although the importance of coordination is often recognized, the term "coordination" frequently isn't defined, and rarely are specific suggestions laid out on the techniques to follow – or avoid – to carry out an effective job of coordination.

In a national survey of local civil preparedness coordinators, half reported that lack of coordination with other government units was one of their major problems. Since that's a big part of the preparedness job, can the problem be solved? Is it possible to teach a person how to coordinate?

The Defense Civil Preparedness Agency believes the answer to both questions is a resounding "YES." With the assistance of Iowa State University staff members and others, DCPA is developing an educational program to help local civil preparedness officials become more skilled in the art of coordination – the talent, in this case, of getting persons and groups with different interests and goals to work as a team in carrying out the civil preparedness mission.

Educational Materials Developed

In an effort to remedy this situation, the Defense Civil Preparedness Agency has supported a research utilization project during the past 18 months intended to provide practical tools for use in carrying out the art of coordination by local civil preparedness coordinators. A training module has been developed to help local civil preparedness officials learn how to plan and create coordination among agencies, organizations, and other groups – public and private – in their jurisdictions. Although the module was developed primarily for local coordinators, it should also be useful for personnel at area, State, regional, and national levels whose jobs demand the effective use of coordination techniques.

In devising this program – a program, incidentally, which should also be useful to other agencies and organizations – our job at Iowa State University was to develop training materials that could be used to teach coordination skills. The specific objectives of this effort were to:

- Provide coordinators with knowledge about how to create coordination effectively.
- Provide knowledge about the barriers that interfere with creating coordination.
- Present a model that can be used to plan for, create, and evaluate coordination.
- Provide material that can be used by coordinators to develop skills in applying the knowledge presented.

By CHARLES L. MULFORD and GERALD E. KLONGLAN
Research Sociologists / Iowa State University

During the past year we have developed and field tested the training materials in three seminars held at the DCPA Staff College at Battle Creek, Michigan, and in two other shorter conferences. Participants included local civil preparedness coordinators, State and regional training personnel, Federal research and training personnel, key agency decision-makers, and the team from Iowa State University.

Different Training Patterns Considered

Participants evaluated the seminars both orally and in writing. The nearly unanimous conclusions were: (1) the research team had been successful in pulling together the knowledge about interagency coordination; (2) the applied training materials can be used in a variety of teaching situations; and (3) persons at all levels of the civil preparedness program, and especially local coordinators, need to be exposed to these coordination skills. But it was also agreed that not all coordinators should receive the same amount of training. As one local coordinator put it, "Give them what they need when they need it." New coordinators may need to be *oriented* to the skills, while experienced coordinators may profit most from a State training seminar or in-depth training in coordination at the DCPA Staff College.

As a result of the project, four separate documents are being prepared, each of which is linked to the others: (1) *Creating Interorganizational Coordination,* the research report which documents all activities in the project: (2) *Creating Interorganizational Coordination: An Orientation*, which is a general introduction to the subject of coordination, and presents the principles in a straightforward manner, a brochure that could be made widely available to those concerned with the topic; (3) a detailed *Instructor's Guide* which presents everything needed for the various training options and should be highly useful for training personnel at all levels; and (4) a *Student's Workbook* which contains activities, guidelines, checklists, and practice materials, and can be used in a wide variety of training situations.

Major Ideas Described

While we will certainly not try to give a complete summary of all major points thrashed out in the seminars or the training materials growing out of the project, these concerns and ideas do stand out:

- Disaster preparedness organizations do have unique coordination problems compared with other governmental units or voluntary organizations.
- You can't do the job alone. No one expects or wants you to try.
- Public pressures for coordination have increased.
- Authority doesn't work in the private sector.
- Coordinated efforts have greater impact on meeting objectives than going it alone.
- Fear of losing autonomy and not getting credit are major roadblocks to coordination that must be overcome.
- Strategies are available to assist local coordinators become much more effective in the coordination process.
- Even disadvantages and obstacles to effectiveness can be turned to your advantage.

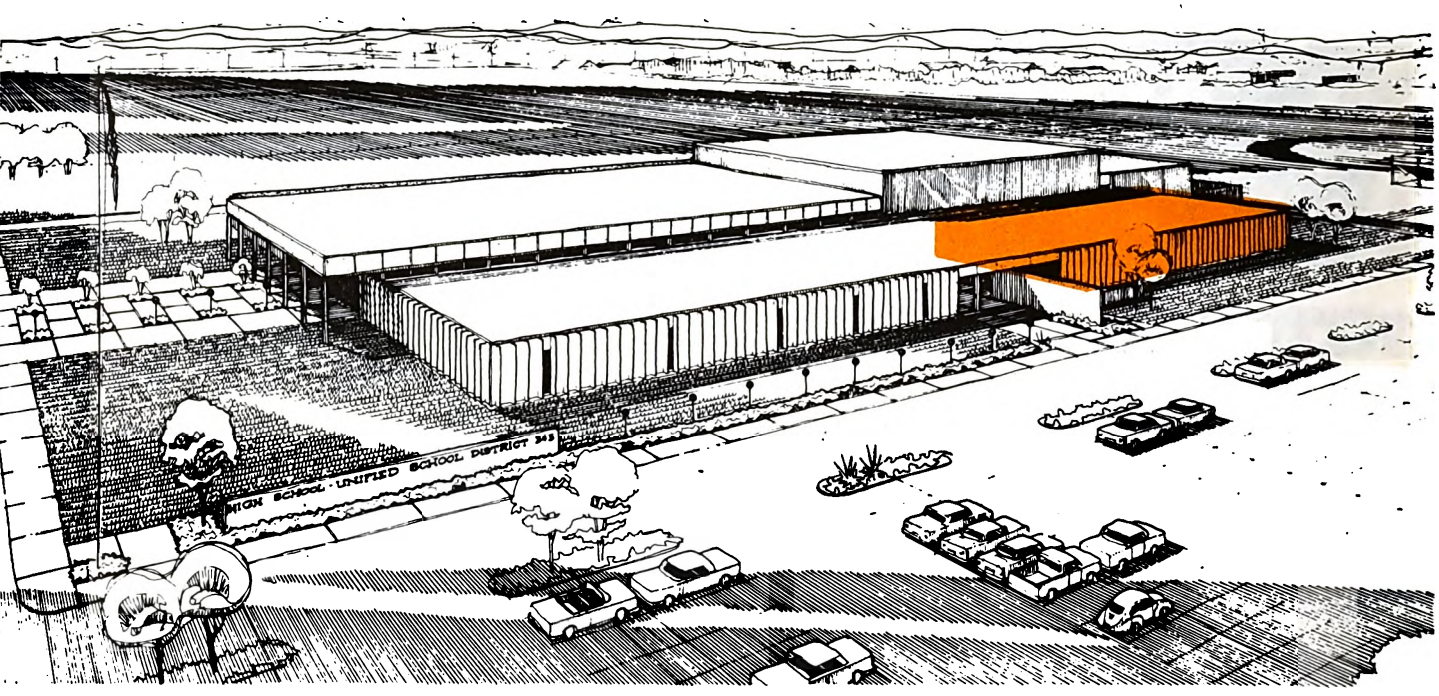
The job of a coordinator is to achieve greater impact by getting people and organizations to work together. All of the research evidence indicates that civil preparedness coordinators who do coordinate – not just give lip service to it – are much more effective in their job. The concensus of those who have participated in this project as researchers, monitors, advisors, and as seminar participants is that the knowledge that has been developed is highly relevant to the job of the local civil preparedness coordinator.

The materials and training programs associated with this project will be deployed to local civil preparedness coordinators as soon as possible. The first item out probably will be the orientation brochure on coordination. Making the program a part of the DCPA Staff College curriculum and State training courses and seminars will take a bit longer. Instructional materials must be produced in quantity and necessary train-the-trainers events held. But by early next year the program should be well on its way to help local civil preparedness coordinators improve their skills in working effectively with groups. ■

By D. B. WARD
Associate Professor of Architecture / University of Utah

Safer schools in Kansas

(Professor Ward is under contract with DCPA to collect data on buildings designed with special protection. He has developed numerous DCPA publications illustrating how shelter was incorporated into new buildings. "Schools in Kansas with Tornado Protection." TR-79, is one of his most recent publications.)



A TORNADO SHELTER (shaded area) designed into the music and home economics rooms of Perry High School in northeastern Kansas.

The architectural firm of Horst, Terrill, and Karst of Topeka, Kansas, routinely provides an extra service for its clients. The firm, whose practice is mostly school architure, incorporates a storm shelter into almost every school it designs.

This special feature is emphasized in promotional brochures issued by the Topeka architects.

The prevalence of extreme winds, expecially tornadoes, throughout Kansas, the area of the firm's professional service, has made this routine practice of including storm shelter both acceptable and desirable to school clients.

"Shelter is provided because people in Kansas are concerned for the safety of children in school due to the high tornado frequency in the region," Gary G. Karst, a partner in the firm, noted, adding: "School administrators seem to be very happy to have the shelters easily accessible on short notice. It gives them peace of mind."

Perry High School, located in the small community of Perry in northeastern Kansas, illustrates typical work of the architectural firm – both in the design of educational space and in storm shelter design. The educational concept for this one-story school is one of open, flexible space in which peripheral instruction modules open into a core area consisting of a resource center, a large-group instruction area, and a physical education area. The storm shelter was designed into the music and home economics rooms. Reinforced-concrete walls and roof replace standard steel-framed construction in the shelter module to provide tornado protection.

The music and home economics rooms were selected as the most appropriate space for the shelter for several reasons. Overall floor area in these rooms was large

enough to accommodate, on an emergency basis, the school's enrollment of 400 pupils. Enclosure of these areas also offered a natural boundary for the heavier concrete construction required for the shelter. And the concrete construction afforded an additional benefit of reducing noise transfer associated with a music area.

Two Basic Approaches Used

Noteworthy in the context of the school's architecture is that the dual-use storm shelter space has been skillfully integrated into the building design. Educational functions are not impaired by the presence of shelter. Also, interior and exterior finish of the shelter module are of the same quality as other portions of the school.

Because storm protection has been widely incorporated into its work, the architectural firm has somewhat standardized the design concepts and criteria for shelters, even though particular applications of the concept vary to fit many different schoolhouse plan arrangements. In general, two basic approaches to storm shelter design have been followed: (1) below-grade, or partially depressed shelters, and (2) aboveground, rigid "box modules," as in the Perry High School design.

Belowground storm shelters in the lower level of two-level buildings are preferred by the architects because they inherently afford good protection for pupils. Unless upper portions of walls are exposed aboveground for these shelters, only roof modifications are needed to gain the desired rigidity to resist collapse should a tornado strike. The architects also make the storm shelters usable space for daily instruction or other school-related activities. They do not create just single-use shelters and, therefore, do not create two-level schools just to provide the shelter. Still, when functional requirements can be accommodated and site conditions permit, the architects will develop belowground shelter. Sloping site conditions work best for the two-level schemes.

State Law a Factor

Sometimes belowground or depressed instructional space is not compatible with functional requirements or construction budget limitations of a school. As Mr. Karst points out, "We try to avoid any solution requiring excessive grading to develop belowground space." And there's another influence on schoolhouse planning by the firm: Two-level schools are discouraged in Kansas by recent State legislation which requires accommodation of handicapped persons in public buildings. Ramps or elevators are necessary for two-level schools, and this costly requirement encourages one-level, at-grade construction.

When belowground space is not workable in a schoolhouse design, the firm makes use of an aboveground "box module" shelter concept. These aboveground storm shelters are independent, completely integral concrete boxes placed within a steel-framed schoolhouse. Although structurally independent, the "box module" is incorporated into the school design so successfully that the presence of a storm shelter is not apparent to school users. Typically, the architects have chosen as the locations for the "box modules" relatively uncluttered open spaces having some instructional purpose on the first floor. Music instruction rooms, as illustrated in the Perry High School example, have been especially suitable for this type of design.

In the standard "box module" design, protection is achieved by means of reinforced-concrete walls on all sides and reinforced-concrete pan-joist roofs. Schoolhouses designed by the firm typically are of steel-framed roof construction, so the "box module" becomes an independent element of the structural system—a feature which enhances its protective qualities. Enclosure walls of the "box modules" typically are of 8-inch concrete thickness with exterior facing of brick or precast concrete panels, or of 12-inch concrete thickness with exposed, textured concrete exterior surfaces. Windows are avoided in the shelter modules due to the hazard of wind-blown debris. However, this constraint has had little effect on suitable locations for the shelter modules in open-plan school designs. Also, doors in the shelter modules are positioned to provide natural baffling, or baffle walls are included.

Little Effect on Costs

In all schools, these storm shelters – belowground and aboveground – are dual-purpose spaces which are used daily for instruction, so the incorporation of special shelter has not added significantly to construction costs. One other point: The storm-resistant designs in all cases have been introduced to provide safety for school occupants. Reduction of damage by extreme winds to other portions of the schoolhouses, except through the usual standards applied to construction detailing, has not been a focus in the work of the architectural firm.

In addition to protection from tornadoes, the school shelters also offer protection from radioactive fallout resulting from a nuclear attack. Evaluations show that the aboveground "box module" shelters offer fallout radiation protection very close to the minimum level recommended by the Defense Civil Preparedness Agency, and the belowground shelters usually offer adequate fallout protection.

More than 25 schools designed by the Topeka architectural firm have been constructed throughout Kansas with designed storm shelters. This concern for pupil safety and resulting protective measures are, in themselves, noteworthy. In addition, practical applications of tornado-resistant building design add to our technical capability to answer life-safety problems posed by the hazard of nature's most vicious small storm. ■

Industrial security in modern society

In this era of astonishing industrial and technological growth, no field has shown a greater responsiveness to change than that of security and loss prevention. Yet, surprisingly, this essential element of our business economy has come into its own only in the past quarter of a century.

The genesis of industrial security was largely during the period of accelerated industrial defense activity in the United States during World War II and in the Korean conflict in the early 1950's. During that period the concept of security was on a rudimentary level, concerned mainly with the protection of industrial defense and government facilities against sabotage and other hostile acts. All that was changed, however, by the mid-1950's when the United States emerged as the world's mightiest political, nuclear, and industrial power.

More Sophisticated Approach Required

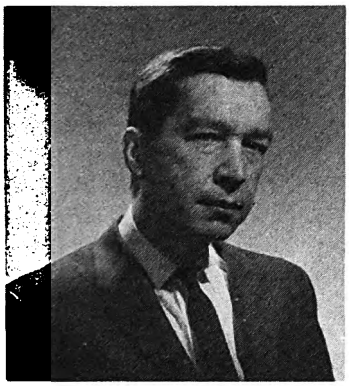
The impact of those tumultous years upon this country was to create entirely new areas of industrial and governmental activity, requiring a far more sophisticated approach to the problem of security than had been the case. It was out of that time that the first truly professional security administrators emerged. In response to this feeling of heightened professionalism in the security field, the American Society for Industrial Security (ASIS) was organized in 1955. Its founders were among the first to recognize that industrial security was an integral part of the new industrial and economic order. They also foresaw that, henceforth, the entire problem of industrial security would have to be viewed in a wholly new context, and that high standards would have to be established to give the profession the prestige it deserved. These founding members had been trained in the hard school of war. They were completely realistic about their role in our expanding world of economic, political, and industrial systems.

Some of this increased professionalism had already been reflected in the records of preventing foreign espionage and sabotage achieved by security officials during World War II and during the Korean War. Considering the many new problems we were coping with in that period, I think that, for the most part, we handled them expertly and perceptively. But we were finding our way in a new world, and that is never easy or fool-proof. And since ours is an ever-expanding field, faced always with new situations, we shall have to come up with new solutions for many problems in the years to come. But that is how a science grows; we cannot expect to have instant answers to new situations created by a society in ferment.

Human, Technical Complexities Grow

One of the most important consequences of United States involvement in World War II was the ushering in of a new era of economic and social change. With this fantastic economic growth came a corresponding increase in the complexity of human and industrial relationships, including many areas we had never dealt with before. We gradually came to see that security is not merely a custodial function, but is a much more complex concept involving the whole spectrum of activity – individual and property rights, and international consequences. It became evident that security was nothing less than an essential ingredient of the mortar holding together the various segments of our industrial and social order. With effective security we could protect industrial and individual integrity.

We know now that if government, private industry, or nations are to function effectively, they must take every



By O. P. NORTON
Executive Director / American Society for Industrial Security

precaution to create a climate of security and safety in which all persons can function at their optimum levels of performance through the understanding and voluntary cooperation of each, rather than through primary reliance on laws and regulations. Removal of that precious element of security from our vast industrial establishment would create disastrous consequences. So, far from being a private police function, industrial security is a pillar of the world and society in which we live.

The Problem of Nuclear Power

To illustrate this point further, one need only take a brief look at the role of security in nuclear power development – a matter of the greatest urgency in view of the worldwide energy crisis. Within the next decade it is anticipated that the United States will build a series of nuclear reactors capable of supplying a substantial portion of our energy needs. This is an immensely complicated and expensive undertaking, requiring the utmost care to protect both the environmental and industrial sectors. The persons in charge of the security for this gigantic task will have to be highly informed, intelligent people, with a clear understanding of the establishments they are protecting. This entails a knowledge of the technological side of nuclear energy production and its attendant risks. They will, in effect, be a part of the process rather than a mere internal police force. What is true in nuclear energy is equally true in other fields. When we talk of security today, we are dealing with a far wider complex of activities than could have been imagined even as recently as a decade ago.

Not only is security an important element of modern American business organization, but it has also become an indispensable instrument of management, screening out undesirables, and protecting both industrial and individual rights without trespassing on those ideals of personal liberties guaranteed by our Constitution.

Treading a Narrow Path

Beginning with the 1960's we have witnessed a greatly increased sensitivity among minority and ethnic groups along with a rising tide of expectation among all our people. This increased awareness, together with the information explosion made possible by a rapidly growing computer technology, raises many new security problems. Other problems have been created by intensified foreign trade competition, with its attendant risk of possible industrial espionage to acquire secrets of technology. So along with the greatly expanded task of vigilance, there goes the need for equal care to avoid trespassing upon individual rights guaranteed by our Constitution. The security official must often tread a very narrow path to avoid legal complications. It is an extremely demanding job, requiring a high degree of knowledge and professional competence. It is certainly not the kind of work which can be entrusted to an untrained person.

Even understanding the legal complexities of today's security situation is not enough for the industrial security professional. He must also have an almost intuitive grasp of the human dimensions of his work. That is why we require that all applicants for membership in the American Society for Industrial Security be individuals in positions of responsibility.

A Forum for Information Exchange

ASIS membership is made up of knowledgeable and experienced people who are able to view their work in its most professional and universal aspects. A primary objective in establishing ASIS in 1955 was to provide security

Industrial security in modern society

directors and supervisors with a means of channeling their varied experiences into a common reservoir of professional knowledge. We were aware that the ideas, methods, techniques, and other factual data developed in one sector of industry could be applied with equal advantage in another area. Just as industires have pooled their experience for mutual benefit, we believed that security officials could cooperate to add to the general knowledge to raise the standards of their profession. This has already been done in such varied fields as engineering, chemistry, accounting, personnel, and many others.

Other considerations motivating us in the formation of ASIS were the desire for increased professional competence, and the creation of nationwide security standards, lifting our work to higher levels of performance. Moreover, the creation of a national society would not only unify the security profession, but would also result in an exchange of ideas, techniques, and methods of operation. As a result of the many advantages made available to the security officials and supervisors through this increased and collated knowledge, the development and administration of security programs and measures would be improved. This, in turn, would greatly strengthen our business and government systems.

Certificate Program Under Development

Within recent months, ASIS has been working to develop a certification program to ensure the highest possible level of professional competence in the security field. As presently contemplated, the certification program would be administered by a Board of Certified Security Managers, consisting of nine distinguished security professionals. Each member of this Board would be appointed for a period of three years. Three three-year appointments would be designated every year and would rotate so that terms overlap.

The Board would have sole power to determine whether an applicant meets the requirements for a Certified Security Manager. Such certification would be based on the successful completion of a battery of eight tests, four of which would be mandatory, and the remaining four selected from a group of optional subjects. Experience of practitioners active in the field would be weighed in considering eligibility. The program is now under consideration for implementation at the earliest possible date. With this move, we have taken another long step toward establishing the American Society for Industrial Security as the foremost organization of supervisory security officials in the country.

In the relatively short time of our existence, we have made a lot of progress. We still have a long way to go, but I'm satisfied that we're headed in the right direction. ■

She also told it to the Marines

By ELSIE JANE BECK
Director
Natural Disaster and Civil Defense
Cattaraugus County, New York

1975 has been designated by the United Nations General Assembly and the President of the United States as International Women's Year. What an appropriate time to hear from a county woman civil defense coordinator.

So many times we hear, "It sounds like a man's job," or "A woman shouldn't be in such a job." But civil defense must be a concerted response to any unusual emergency – a response that calls for maximum use of each community's resources and with a greater need for coordination between emergency forces than normally exists. We are concerned with the survival of people, and that's a concern that women live with everyday, always.

Basic Concept of Survival

The female species of the human race brings life into this world. I submit, then, that women are far more adapted to the principles of survival than our male counterparts. Before the birth of a child, a woman is concerned with some basic tools of survival planning – food, water, lodging, safety, health care. Following the birth of the child, she has to be concerned with basically the same planning for months and years ahead. Therefore, a woman has a natural instinct for this very basic survival concept. As the family grows, so do her responsibilities for her family's survival.

This is how I look upon the role of a woman civil defense director. Her home is her family and her community is her family, too. In her home, father is "boss"; she is coordinator. As a civil defense director or coordinator, the Chief Executive Officer, the Mayor, or Chairman of the Board of Supervisors is her "boss"; she is coordinator. I would be remiss if I did not add that love of God and country are prerequisites of successfully serving either family.

At the early age of 21 while a member of the United States Marine Corps (which is 200 years old this November 10), a statement was made to me by Gunnery Sergeant Lou Diamond at Parris Island, S.C., that I share with you. Lou Diamond is a man whose life has become a colorful part of Marine Corps tradition, but he impressed me when I asked him what he thought of women in the Marine Corps.

"The Marines have gone to hell when they admitted dogs and women to the Corps," he growled.

A Marine Challenge

Somehow, his words created a challenge for me. I vowed to serve the Corps as proudly and honorably as I could, realizing as a woman that resentment by the male sex was, indeed, there. Since that time, with the exception of seven years, I have served two "families." And now, some pertinent thoughts for you women readers . . .

First, as women it is past time that we really reappraise our basic attitude toward ourselves and quit selling ourselves short. We are really a very capable, remarkable, and enterprising group. Those of us who pursue full-time positions, plus run a household, do so under a variety of pressures and adverse conditions that would make most men shrink away in horror. I have given considerable thought to the question of why so relatively few women achieve notice in this world, and I believe it is woman's own self-image that puts barriers in her road – often not only in getting the job she wants, but, more important, in being the secure, motivated, self-accepting person she ought to be.

Men show little hesitancy entering fields formerly dominated by women, so why should women? It takes courage to know what you are and to be what you are. There is no economic or vocational discrimination against women but there appears to be a psychological discrimination which, in effect, reduces a woman's personal sense of worth and competence. Indeed, many women disqualify themselves before the male world has a chance to rebuff them.

Women Can Do the Job

If one looks at them as part of the structure of "family life," each of the services in civil defense can be administered and coordinated by a woman just as well as a man. We can use our ingenuity, imagination, emotions, and self-control to a much greater advantage in civil defense planning, I believe, than our male counterparts. However, the road is not easy. There are many areas in our programs and policies which require skills foreign to most women. Humbly and coyly I admit that I do not comprehend at times, and I seek out the male staff member or volunteer to accomplish the job.

The local civil defense director or coordinator has an awesome responsibility 24 hours a day, and it is necessary to indoctrinate your family and friends to this responsibility because your personal plans are subject to change at any time. Both of my "families" have accepted their responsibilities. The Chairman of the Cattaraugus County Legislature is actively interested in civil defense and understands the programs. His support is outstanding. As a woman, I never make demands but I say, "I need your help." It is impossible for anyone to learn all there is to know about each of our services, but I listen and absorb all that I can from the Chiefs of Services.

Some Points To Keep in Mind

Always be a lady, as difficult as it might be, remembering that as a woman you are in a field foreign to most women and you must have the respect of your counterparts. Never be afraid to ask advice from superiors in your field. Keep the public informed of your programs, and most important, your "official family" informed. Offer training courses regularly. Work closely with the emergency service people and establish close liaison with the Red Cross chapters in your area. Get to know your utility and industrial community. And from 22 years of experience in civil defense, including three major flood disasters and a number of isolated ones, keep your plans updated – know WHO, WHAT, and WHERE so that you can move quickly, calmly, and assuredly in an emergency.

It is impossible to do this job alone, but with the cooperation of your staff and the emergency services, the wheels will roll to get the job done.

There are always obstacles to overcome, challenges to face, apathies here and there. But women, recognize your power and put it to use! Each of us has two families – our home and our community. Does not their survival depend upon you? ■

By JACK H. DUNCAN / Deputy Director / Office of Emergency Services / San Diego County, California

San Diego Hosts Defense Board

MASS OF BRASS – Members of the Inter-American Defense Board and College, plus local dignitaries, listen as Jack Duncan (standing, foreground), Deputy Director of the San Diego County Office of Emergency Services, describes what is going on in a local exercise.

San Diego County Photo

Ever had the feeling someone was watching you? We did, glanced around, and there stood 94 representatives of most of the Western Hemisphere.

On May 9, the United States civil preparedness effort was put on display in the form of the Unified San Diego County Office of Emergency Services. We hope – we believe – we did a good job.

Actually, this all began way back in August of 1973 when we opened our remotest closets to the scrutiny of "OSA" – the On-Site Assistance program of the Defense Civil Preparedness Agency and the California State Office of Emergency Services. That we came through "OSA" with flying colors is evidenced by our being picked to host a visit by the Inter-American Defense Board (IADB) and the Inter-American Defense College (IADC).

The Inter-American Defense Board is the oldest international military organization in the Western world with its founding dating back to 1942. It was created, developed, and expanded by the combined States of the Americas with the charge of collective planning for the defense and security of the Western Hemisphere. Its theme is that of harmony, mutual assistance, and solidarity against aggression.

The Inter-American Defense College is a subsidiary organization of the IADB. A military institute of high-level studies located at Fort Lesley J. McNair, Washington, D.C., it is devoted to conducting courses on the inter-American system and the political, social, economic, and military factors that constitute essential components of inter-American defense. Its student body is usually about 40 students from 14 American countries with each country allowed no more than 5 officers. To be eligible, a student must hold the rank of lieutenant colonel, or above, or be a ranking government official, usually in the foreign ministry.

Role of On-Site Assistance

But back to "OSA." During the several-month period from the first contact to the final report, our

4,200-square-mile county was thoroughly covered by "OSA" people. Because our Office of Emergency Services is a unified operation, each of the 13 incorporated cities and the 8 agencies into which the county government is divided received attention from "OSA" personnel. The idea of "OSA" is to suggest areas of improvement in the organization and response capabilities of disaster preparedness. It is not an inspection from "outsiders" and it is not a test – merely professionals in the field of civil defense inviting other professionals in for a consultation of their operations. But one result of the On-Site Assistance project here was our being selected to host the May visit of our Western Hemisphere military friends.

The first part of the IADB-IADC visit was almost routine to us. Starting at 9 a.m. was one our quarterly disaster rehearsals which we have dubbed "Sub-regional Exercises." This one was scheduled for the City of San Diego, calling for a light plane to "crash" in the campus of Patrick Henry High School. The drama department of the school provided 56 "casualties" who had their wound moulages and other make-up applied by instructors from the Navy Hospital Corps School. Responding with mutual aid were ambulances from the cities of San Diego, La Mesa, El Cajon, and the Santee, Lakeside, Poway, and Alpine Fire Protection Districts, as well as one private ambulance service. A Coast Guard helicopter was called to the scene by radio to airevac the most seriously injured "victims" to the Naval Regional Medical Center. Our only deviation from out usual multi-jurisdictional exercise was to explain to the officers, in English and Spanish, what was happening.

Of the 94 officers, 75 were from Latin American countries; 20 were generals or admirals. The senior officer and Chairman of the Inter-American Defense Board, Vice Admiral O. H. Perry, Jr., USN, was accompanied by the Director of the Inter-American Defense College, Major General George S. Beatty, Jr., USA.

Briefings at the Emergency Operations Center

After all the "injured" had been transported to the six hospitals participating in the exercise, where they received simulated emergency room treatment, and after the coroner had completed his work, the visitors boarded buses for the short ride to the Office of Emergency Services center at Gillespie Field in nearby Santee.

At Gillespie, we presented a slide show titled "Just in Case . . .," the story of the Office of Emergency Services, and briefed the group on the local, State, and Federal relationships. We also guided them through our Emergency Operations Center with its almost fantastic communications system. One U.S. admiral remarked that he was unaware that civilian preparedness had reached such a sophisticated state as evidenced by our facility. Sergeant Oscar Morlett, international liaison officer of the San Diego County Sheriff's Office, explained the county's unofficial ties to Mexico. This is an important aspect affecting our entire county area because of the proximity of the 700,000 residents of the City of Tijuana which adjoins San Diego.

We next showed the observers our "Rescue Street" training aid, a full-scale mock-up of damaged buildings, explaining to them how the "Street" can be used to practice shoring, tunneling, and rescue techniques for earthquake recovery. We also displayed sample materials from one of our 13 Packaged Disaster Hospitals which we set up in our parking lot. A California State OES-funded fire and rescue unit was dispatched by the Santee Fire Protection District so the officers could actually handle the hardware and see the degree of cooperation between the State and local agencies. The OES rig is one of scores assigned to local departments with the stipulation that they are to be available for mutual aid responses anywhere in the State upon request by the State Office of Emergency Services. The Latin American officers found this arrangement to be of particular interest.

Appreciation Expressed by All

Presenting the San Diego County Office of Emergency Services with a lovely hardwood and tile plaque of the Inter-American Defense Board, Rear Admiral Olemdo of Ecuador gave a gracious speech congratulating the community for its disaster response enthusiasm. The 4,000 student body of Patrick Henry High had been joined by Mrs. Frances Dias, Director of DCPA Region 7, County Supervisor Lou Conde, San Diego City Councilman Jim Ellis, and many other dignitaries of the community.

Major General Beatty presented the office with a similar plaque of the Inter-American Defense College and, in his presentation speech, we felt humbled and honored by the sincereness of his appreciation.

Colonel Dorce of Haiti said that, because his country experienced so many disasters, he had learned much from us about community organization. Brigadier General Miro of Argentina was highly interested in our lack of reliance on the military forces. Colonel Joe Smith of the U.S. Marines gave an emphatic nod of agreement when we explained that, if our area experienced a war-related disaster, the armed forces would be away fighting. We would welcome all the help they could give, but could not expect more than a token of assistance in wartime.

We are very proud to have been chosen from among the hundreds of excellent local civil defense agencies to put on the show for these distinguished visitors, many of whom may someday become chiefs of state of their nations. We hope they left the Unified San Diego County Office of Emergency Services favorably impressed with the profession which we represent. We tried out utmost to put on a good show and a realistic one. We didn't want to give a false impression of our response capabilities, and yet we wanted to demonstrate exactly how San Diego County remains ready. ■

Our Guy at Junior High

By EARL T. TILDON
DCPA Research

"Bureaucrat" – Webster describes this fellow as "one pursuing a narrow and arbitrary routine." Is that the way most people judge those who work in DCPA headquarters – as disinterested officials who don't really get out from behind their desks to live and work with people? If so, meet Earl T. Tildon in just one of his excursions into the "real world." He's a Federal Bureaucrat but he's also a Civil Servant – and a Citizen.

"If a nuclear bomb falls on Washington, D.C., and leaves a crater, what do we do?" This was a question put to me by a student at the Kelly Miller Junior High School in Washington, D.C.

If you want direct questions on fundamental points, give a talk on civil preparedness to a junior high school class. My experience with such a class was highly revealing to me and may be of help to others.

A Teenage Niece Starts It

The "project" started earlier this year when my teenage niece asked me to visit her school and talk about my job. Later I received a call from her teacher, Ms. Bess Stamps, extending a formal invitation. Ms. Stamps' class was studying careers – the variety available, the type of preparation needed to pursue a particular career, and the kinds of potential awards from the careers. I accepted this opportunity to share with young people the kinds of work done in the Defense Civil Preparedness Agency and the importance of this work to survival. My thought was that the invitation provided an opportunity to tie the business of careers into the business of preparedness and thus "kill two birds with one stone." In one respect the invitation was quite a coincidence since my schoolteacher wife, Eva, had listened to my disaster-preparedness speeches (at home), and had agreed with me that such information should and could be incorporated into the school curriculum at the junior high level and, indeed, in certain grades at the elementary level.

The invitation was an opportunity, but I must admit it also presented some problems. The main one, in my own mind, was – how in the world could I give such complicated information to teenagers? What if my presentation sailed over their heads or was boring? Right away I decided to prepare a written presentation they could read at their leisure after I had finished and left.

Getting Prepared on Preparedness

Preparing the material on civil preparedness as a career wasn't too difficult. Much of this I could do on the basis of my own personal experience. But getting across to teenagers the essential preparedness message was another matter. Fortunately, there was material at hand aimed just at this purpose – a textbook, *Your Chance to Live*, and visual aids developed by DCPA and first distributed in 1973 primarily for use in 8th- and 9th-grade classes. I drew heavily upon this material which had never been seen by students at Kelly Miller Junior High School, and, as I understand it, in many, many other schools throughout our Nation. (The "why" of this gap in preparedness education is a complicated explanation. But we've got to bridge that gap, and the sooner, the better.)

On the appointed day, I met with the students in the school library where a 16mm sound projector and screen were already in place. My pitch was in three parts: a brief description of the Federal Government, with emphasis on DCPA; a 14-minute film, "Nuclear Disaster," one of the

Our Guy at Junior High

statistican, to a requirements analyst with DCPA Research.

The emphasis, of course, was on the fact that their opportunities were, in most instances, just as great as mine, and that I still have room to grow in my career and an opportunity to earn more money. I related my various jobs to the kinds of functions in the Federal Government, and my DCPA job with the preparedness function.

And Now For the Questions

Then came the 14-minute *Your Chance to Live* film on "Nuclear Disaster," and the question-and-answer session.

As the questions came, it soon became apparent that the young people were as much interested in the subject of nuclear disaster as they were in a career.

"What do we do if Washington is hit?" the young man asked. I answered the best I could. But I was troubled then, and am troubled now, by the fact that it had not occurred to the student that, under such circumstances, his life would possibly end abruptly. He had no awareness of the capabilities of nuclear weapons or of the individual and community action needed to meet the threat. And in a few years that boy will be, or can be, responsible for his community and its preparedness for disasters.

My experience at Kelly Junior High School prompted me to suggest to my schoolteacher wife that she order a sufficient number of *Your Chance To Live* manuals for use as a supplement in her teaching of science in the elementary school. Her principal agreed, and ordered the manuals from the DCPA Region Two office at Olney, Maryland.

If young people are exposed directly to the nature of disasters and the need to be prepared for them, they will be more responsive to civil preparedness as adults. And if the information is presented in an interesting and simple enough manner – as it is done in the *Your Chance To Live* materials – chances of comprehension and retention are great.

I hope that people across this land, especially in neighborhood and community groups, will initiate the kinds of programs that will guarantee maximum exposure of all lifesaving information, especially for young people. If each person starts with the premise that sharing our information with our neighbor costs nothing but a little time, a great multiplier effect can be achieved for preparedness.

DCPA Director John E. Davis put it this way: "If we are to have national, State, and local lifesaving systems which are fully effective in wartime and peacetime emergencies, all of us must have the education, training and experience to match the job."

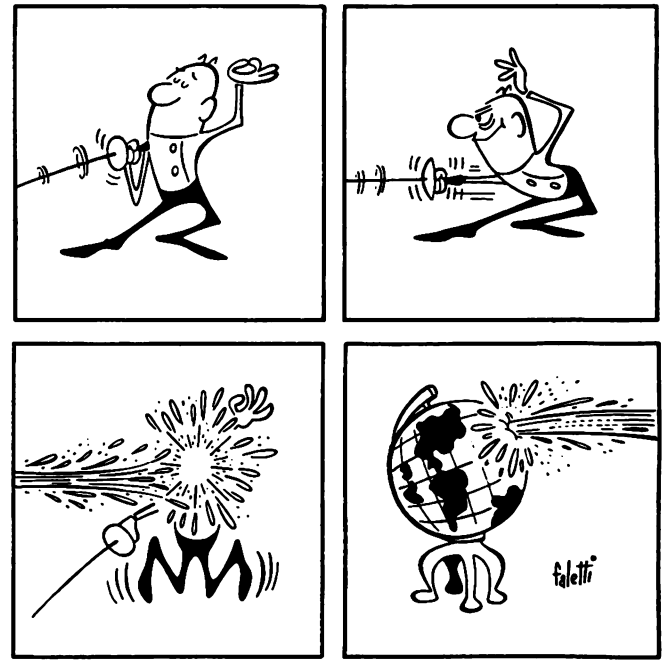
It's simply a matter of priority, as I see it. And in civil preparedness, education is the highest priority of them all. ■

HAZARDOUS MATERIALS MANUAL

A 125-page manual, based upon material used for the last two years in training more than 1,200 persons in Colorado in the techniques of responding to transportation accidents involving hazardous materials, is available to others desiring to carry out similar preparedness programs.

The manual was designed expressly for the National Hazardous Materials Conference held in Colorado last January. ("Hazardous Material Seminar," FORESIGHT, November-December 1974.) Lesson plans in the manual cover such topics as general classes of hazardous materials; recognizing rail placards, labels, and truck placards; safety features of cargo tanks; radioactive materials; tactics of fire fighting; fire prevention and handling LPG emergencies; poison and hazardous substances; tactics of law enforcement; and agencies available for assistance.

The manual is available at $10 a copy from the Colorado Committee on Hazardous Materials Safety, 1247 Champa Street, Room 104, Denver, Colorado 80204.



Here's a digest of news items on civil preparedness topics:

COORDINATION AND CONTROL—"A new State facility, the emergency operations center in Boone National Guard Center, in Frankfort, was recently completed, bringing key staff members together and providing a well-organized operations center for use during an emergency," reports the *Journal-Enterprise*, Providence, Kentucky. "Prior to construction of the facility, the State did not have adequate space or assets to conduct operations," the item continues. The new EOC has an auxiliary generating system and a command and control console, "giving the State a central area that connects all State radio networks." The cost was $110,000, fifty percent covered by a Federal (DCPA) grant. . . . Howard Colyer, Director of the Madison County (Kentucky) Emergency Disaster Commission, told the Richmond *Register* plans are in progress to establish an EOC for the area to provide "speedy and coordinated efforts" to save lives and assist in disaster relief. Matching funds will be provided by the federal government (DCPA) the item says. The action topped a year of planning and preparations following a tornado disaster of last spring. . . . "Indiana Civil Defense Headquarters, in the basement of the State Office Building, becomes a general communications center in the event of disaster—like April 3, 1974's tornado," reports the Greenfield *Reporter*. The communications are "tied into NAWAS," so that messages can be relayed to and from other areas of the country. . . . The LaSalle police jury approved a final project application for construction of an Emergency Operating Center in the Courthouse. C.U. Branton, local civil defense director, will file the application with the Defense Civil Preparedness Agency, the Shreveport *Times* notes. . . . "We had almost nothing last April 3," said James L. Matthews, director of communications in Kentucky's State Division of Disaster and Emergency Services. "It was one big mish-mash," he told reporter Anthony Pearce-Batten of the Louisville *Defender*. Now headquartered in a new EOC, DES boasts a radio console which puts the emergency unit into instant contact with other State emergency agencies. Backing up the electronic equipment is a detailed plan assigning responsibilities to seven government agencies, each having a DES coordinator. . . . "EMERGENCY CENTER BUZZING IN STORM" reads the headline in the Omaha *World Herald*. Photo shows Governor Exon receiving briefing from EOC personnel. . . . A feature in the St. Paul (Minnesota) *Dispatch* focuses on storm operations in the State EOC under direction of State Division of Emergency Services Director Wes Lane and his deputy Roy Aune. . . . The possibility of receiving 50 percent matching funds for an EOC in the proposed Chisago (Minnesota) Law Enforcement Center was explained by a DCPA representative from Battle Creek, notes the Lindstrom *Press*, provided the basement portion of the building meets civil defense requirements. "Properly constructed, it would be that portion of the building used by county officials to direct emergency operations in the case of a natural or nuclear disaster," the report explains. . . . Kalamazoo, Michigan, has a newly equipped Civil Defense Communications Center. The *Gazette* photo shows Coordinator Tom A. Lewis and communications officer Maurice Hope inspecting the new equipment with Sgt. Richard Gordenier of the State Emergency Services Division. . . . An On-Sight project prompted an editorial in the *Sentinel* (Winston-Salem, North Carolina) which noted "The change in name from Civil Defense to Civil Preparedness is significant. Preparedness is a public defense against a variety of common peacetime disasters. Communities must be ready to deal with such emergencies. . . . Preparing for an emergency is no more than common sense. There is no reason why any community with the emergency resources and expertise of ours should be caught unprepared by disaster." . . . More than 40 Fulton County department heads and city officials attended a briefing prior to the start of an On-Site Assistance project in Gloversville, New York, reports *The Leader-Herald*. New York University's E.O. Glesne, director of the project, cautioned the group against thinking "only of major disasters. If we can prepare for disasters of a smaller nature, the preparations for a major disaster will follow." Glesne warned the officials that nuclear disaster preparations should not be overshadowed by readiness for natural disaster. . . . "They'll tell us what's right with our disaster program as well as what's wrong," said Lee County (Florida) Commissioner L.H. Whan of an upcoming OSA project. A 16-man team will interview close to 200 representatives of government, schools, hospitals, utilities, and private businesses in the course of the project (Ft. Myers *News Press*). . . . In Davidson County (North Carolina) notes the Thomasville *Times*, "Teams of federal and state Civil Preparedness personnel will interview key people from government, industry and emergency service units to help determine current emergency capability and present recommendations to the county commissioners." . . . "Clay County (Florida) Board of Commissioners unanimously agreed to advertise for a full-time county civil defense director at a base salary ranging from $10,600 to 11,600 plus mileage," reports *Clay Today* of Orange Park. "Knowledge of the background and objectives of the federal, state, and local civil defense programs" is one of the prerequisites listed.

LOOKING AHEAD–In a speech at the National Press Club in Washington, Dr. Fred Ikle, Director of the U.S. Arms Control and Disarmament Agency, said about nuclear proliferation to smaller nations: "We are not now prepared to defend our country against nuclear threats that could come from many different sources. Our entire nuclear arsenal and all our strategic doctrines are directed against one or two major adversaries–and these are governments that are in control of their nuclear forces, and we assume, care about the survival of their country. How can we protect the American people in a world where nuclear bombs would be in the hands of many more countries?" (*UPI* Washington Wire Service). . . . In a column in the *New York Times*, Senator Symington writes, "The possibility that nuclear weapons may soon be in the hands of many more governments–as well as terrorist or criminal groups–is one of the gravest security issues facing the United States." Senator Symington notes, "Today more than 50 countries have nuclear reactors and. . .about 30 currently possess weapons quantities of plutonium that could be used in a bomb development program." . . . The *Baltimore Sun* reports from Rio De Janiero, "A Peronist Congressman in Buenos Aires has urged the Argentine government to build an atomic bomb. . . . The *American Legion Magazine* for May has an extensive article by H. Allen Perry on "The Threat of Nuclear Blackmail."

THE NATION'S DEFENSE–From the *AP* account of President Ford's speech to the Daughters of the American Revolution in Washington: "The President said a recent poll showed that a majority of Americans believe it is important to maintain a strong military, but they don't like the cost of doing so. 'This is a basic dilemma; sooner or later citizens must make a choice,' he said. Detente with the Soviet Union 'has been possible only because of U.S. strength and resolve. To weaken our defenses is to weaken one of the foundations of detente,' he said." . . . Quoted over *UPI* wires, Secretary of State Henry Kissinger said, "I think it is important to keep in mind that our relationship with both the Soviet Union and the People's Republic of China is based on ideological hostility, but practical reasons exist for cooperation in certain limited spheres." . . . The *New York Times* commented editorially in support of the U.S. defense budget, "A normal, or preferably, a better-than-normal Congressional review of the Administration's defense requests is much in order. What must be avoided at this sensitive time is the kind of large-scale reduction that could be seen abroad as a policy change." . . . *Reuters* news service reports from Nanking, China, "Chinese militiamen have dug a huge complex of underground shelters outside this eastern city which they claim could provide sanctuary against all known nuclear and chemical weapons. Running 1.75 miles beneath lush farmland close to the Uangtze River, the tunnels can accommodate about 20,000 people." A British press delegation which toured the shelter was shown an air filtering system, heating, storage and dining arrangements, water tanks, and an underground rifle range and workshop. . . . Pamlico County CD Director Derrill Quigley points out in a column in the *Pamlico County News* that the Soviet government is "relentlessly working for a strong civil defense capability to improve both civil and military defense." The Soviet program, Quigley adds, is based on the "material and human resources of the entire Soviet Union," is provided for "by well thought-out coordination," and is "a matter of public concern. Every Soviet citizen," he notes, "is required actively to participate in carrying out civil defense measures, fulfilling an obligation to the homeland." . . . In Eden, North Carolina, the *News* reports that "with no discussion, county commissioners adopted a broad community shelter plan submitted by county civil preparedness director Jerry Wallace." Wallace's plan provides for four sequential phases–warning county residents, movement of the population to shelter, preparing the shelters themselves, and planning for re-emergency. . . . Gerard C. Smith, a former chief U.S. disarmament negotiator, called on the United States and the Soviet Union to eliminate their land-based anti-missile defenses around Moscow and at Grand Forks, North Dakota. He said the ABM sites could "harbor a hidden nucleus for a broader nationwide defense." Mr. Smith also said, according to the *UPI* wire service report, that current consideration by the Pentagon of the feasibility of limited nuclear warfare was likely to require an increased effort in civilian defense to be credible. He questioned whether the American people were prepared to accept an enlarged program of bomb shelters and mass evacuation plans. The *New York Times* carried the *UPI* story. . . . In Raleigh, North Carolina, the *News and Observer* reports that the Defense Civil Preparedness Agency recently contracted with a team of Research Triangle Institute scientists to find out if abandoned mines and caves could be quickly equipped to accommodate masses of civilians in a nuclear emergency. RTI used a mammoth limestone cave near Kansas City, Missouri, for its experiment and, according to the *News*, Milton Wright, who headed the study says, "the answer is 'yes.' " The contractors used huge industrial fans to pull air into the caverns–enough to support a population of 130,000.

WEATHER WATCH–The *Chicago Tribune* reports that "major death-dealing tornadoes occur in a predictable pattern that repeats itself every 45 years, a University of Chicago researcher and two co-workers have discovered."

A pie-shaped "high-risk" quadrant creeps clockwise at a steady pace, rotating about northeast Arkansas at the rate of one turn every 45 years, the researchers say, and add that civil defense and other emergency agencies should take the 45-year cycle into consideration in budgeting and planning. "Currently," they say, "the high-risk sector is pointing east-southeast, covering southern Illinois, southern Indiana, southern Ohio, Kentucky, Tennessee, northern Georgia, and northern Mississippi." ... "Last week more than 50 officials flocked to the Lee County (Florida) Courthouse for a Red Cross seminar on disaster preparedness," reports the Ft. Myers *News-Press*. "The news they heard was both good and bad. Thanks to improved communications and better interagency coordination, southwest Floridians will have more warning than ever before to flee a hurricane. But due to the area's booming growth and antiquated road network, it may be harder than ever before to evacuate the potential victims." A Red Cross official warned that a hurricane such as Camille would take a greater toll in Florida than in Louisiana because of denser population patterns. Michel Hitzing, Lee County's civil defense director, says an evacuation would be compounded by 50,000 people living in mobile homes in the area. ... The *Progress Examiner*, Orleans, Indiana, surveyed local readiness on the anniversary of the April 3, 1974 rash of tornadoes in the midwest. The survey notes that "In the ensuing year, magazine and newspaper stories and television programs have spent much time educating people on tornadoes." The item also notes that emergency plans have been made for the towns and schools of Orange County, that a warning siren has been installed in the Springs Valley area, town officials of Paoli are working with the federal government to get federal funding for sirens, and Orleans will install its siren within a week." ... "A system of tornado shelters located in schools throughout Adams County have been utilized by Adams and Wells County Civil Defense Director Joseph Klarke to devise a plan of adequate storm protection for mobile home residents and owners of homes not equipped with basements, the Berne, Indiana *Daily Witness* reports.

PUBLIC WARNING—"Tuscaloosa County Civil Defense Director Sam Sloan proposed Monday that a quarter of a million dollars be spent to build an emergency public warning system." (*News*, Birmingham, Alabama). ... A State civil defense representative met with Cuming County Civil Defense Director Bud Scharfen and other local officials to discuss federal aid for getting additional warning sirens, reports the *News*, West Point, Nebraska. ... The *Herald*, Spartanburg, South Carolina says, "Civil Defense Director T.J. Gregory says his agency is seeking federal revenue sharing funds to install warning sirens throughout the city and county to alert residents in the event of an approaching storm." ... Reports the *Times*, "A siren warning system for the city of Natchitoches (Louisiana) that could be used to alert the public in any type of disaster is in the planning stage, according to Norm Fletcher Director of the Parish Civil Defense Agency."

CP PEOPLE—"State Civil Defense Director C.J. Sullivan, who specializes in Alabama disaster aid, has been designated the state's coordinator for disaster relief," the *Advertiser*, Montgomery, reported. Sullivan's first official act was to inform the public of a new, toll-free number to call for information on Vietnamese orphans and refugees. ... In Lake County, Florida, newly appointed civil defense director Donald Quaglotti says the big need in the county is for hurricane shelters. He points out that fallout shelters and hurricane shelters are not necessarily synonymous. "There is usually plenty of warning (about hurricanes) if people know what to do," and is stressing a public information effort (*Sentinal-Star*, Orlando). ... "Individuals as well as governments should be prepared for disasters, according to Henry F. Frey (Lycoming, Pennsylvania) county commissioner. It is definitely the responsibility of county government to be prepared to cope with disaster. But people also have a responsibility to take care of themselves." Mr. Frey and his fellow commissioners have recently established a county Emergency Services Department which combines the services of Civil Defense, county communications, and emergency medical services (*Grit*, Williamsport). ... In Warren, Minnesota, John R. Pearson was honored with a distinguished service award from Governor Wendell R. Anderson upon completion of 15 years of service as Marshall County's civil defense director (*The Sheaf*). ... In New Jersey, Hunterdon County's CD Director Albert Kahn was able to announce, in the classic Mark Twain tradition, that "the report of my death was an exaggeration." Through a mix-up in names, the Lambertville City Commission was informed that Kahn had died. However, when a city commissioner journeyed to Kahn's home to pay his respects, it was not a bereaved family but Kahn himself who greated him at the door. The city fathers corrected the error, but will not take back, they said, the prayer and tribute to Kahn as having been "very faithful and reliable in his mission," (*The Trenton Times*). ... Mrs. Carolyn Whit, named director of county civil defense by the Person County Commissioners, becomes the second female civil defense director in the history of the State of North Carolina, reports the *Courier Times*, Roxboro. ... Provo (Utah) Mayor Russell D. Grange says his city must get ready for prompt emergency action because of recent earthquake activity on the Wasatch Front. "With predictions of future quakes along the front it is time we get serious about disaster preparedness," he announced. Grange has asked CD director Swen C. Nielson to survey all departments to determine the extent of the city's emergency resources (*Idaho Statesman*, Boise).—**Joseph V. Quinn**

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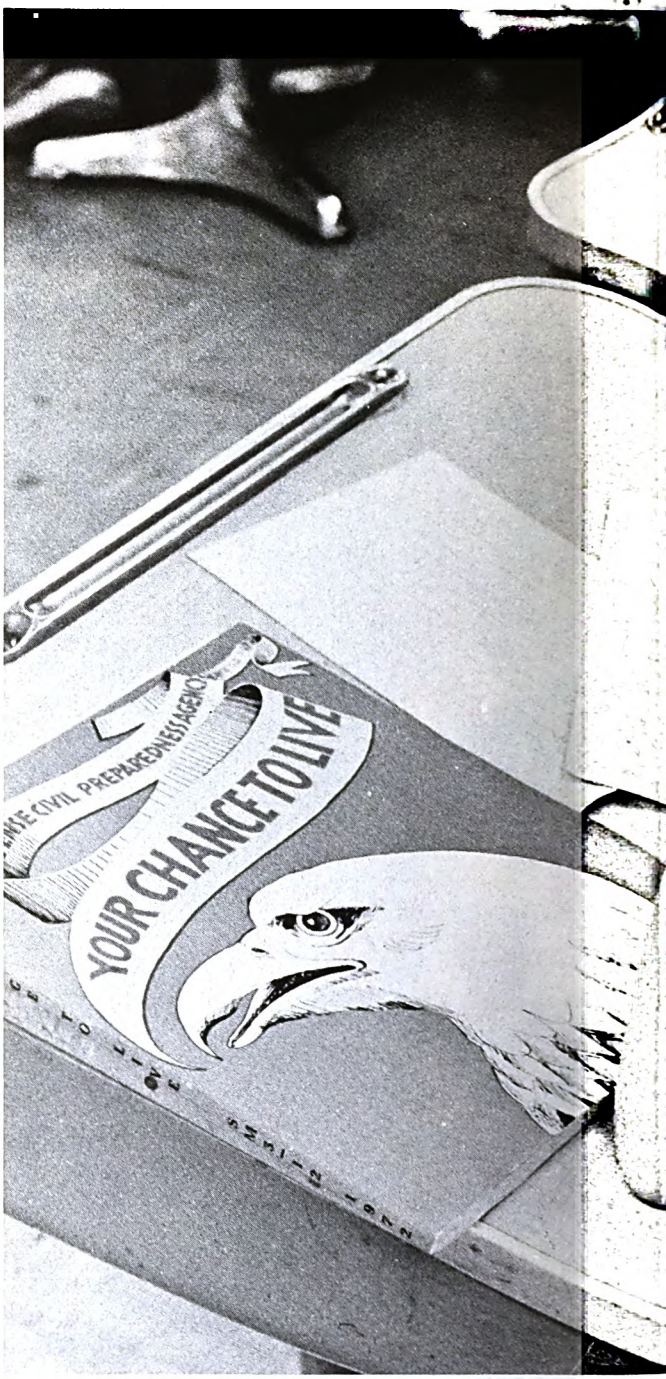
American AID in Foreign Disasters



Four More Films

Four new films in the *YOUR CHANCE TO LIVE* series will be released by DCPA this fall, completing this series of educational films. Included are three 14-minute films, PSYCHOLOGICAL RESPONSE, TECHNOLOGICAL FAILURES, and HEAT WAVE, and a 27-minute INSTRUCTOR'S GUIDE.

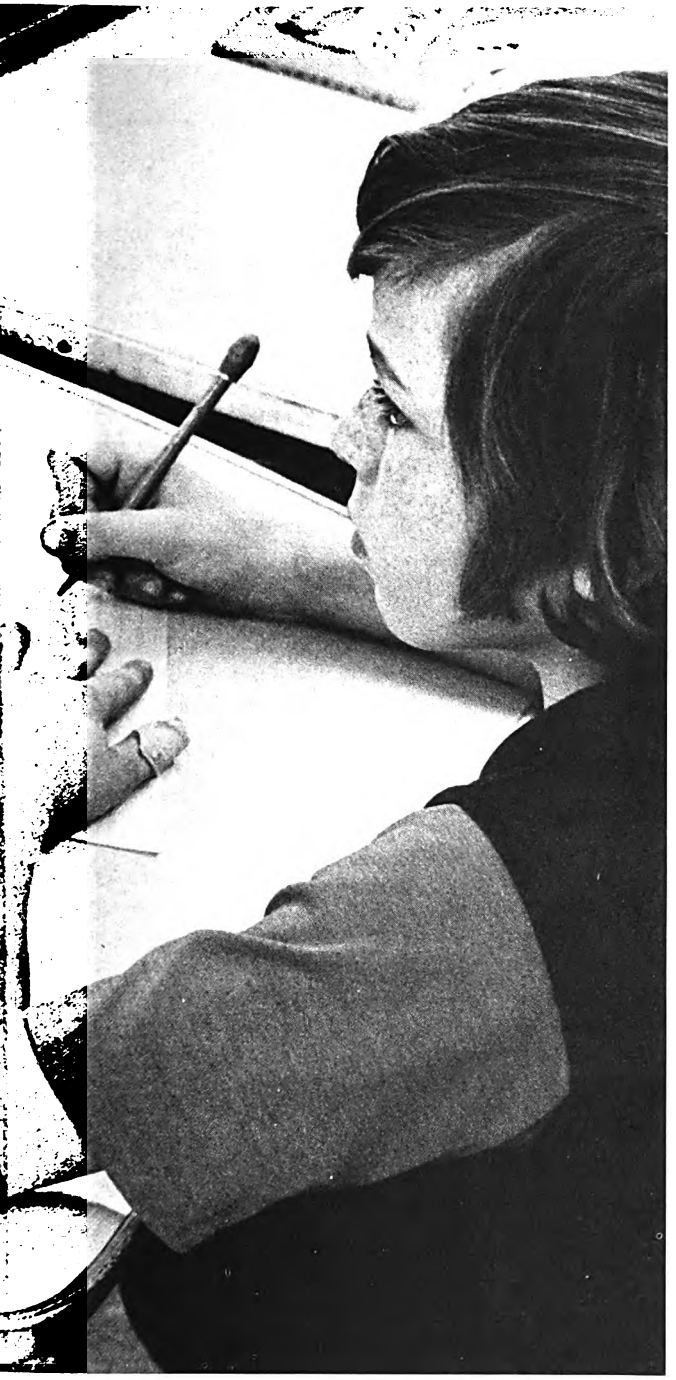
Other films in the series are EARTHWATCH, EARTHQUAKE, FLOOD, FOREST FIRE, HURRICANE, NUCLEAR DISASTER, POLLUTION, TORNADO, and WINTER STORM.

All 13 films are available with English or Spanish language narration, and are being distributed through the civil preparedness education coordinator in those States that have a contract with DCPA to include civil preparedness in the school curriculum. The films are *not* available through Army Audio-Visual Centers. In addition, the films have been produced in filmstrip form (English narration only) with cassette sound track. For information to purchase any of the films or filmstrips, write to Screenscope, Inc., Suite 2000, 1022 Wilson Blvd., Arlington, Virginia 22209.

FILMS SPARK SCHOOL PREPAREDNESS

By VERNE PAULE / DCPA Region Seven

STUDENTS WATCH TV SHOWING of one of the YOUR CHANCE TO LIVE films shown over KVK-21 the Fresno County instructional television station for schools. Michael Jarman is the teacher of this class at Powers Elementary School.



A LITTLE INDIVIDUAL STUDY helps, too, Andy Hudson decides as he writes out his "pollution solution" after watching the "Pollution" film on his classroom television set.

Fresno County, California, in the heart of San Joaquin Valley, is one of the Nation's richest agricultural areas. Over a million acres are watered by irrigation. Grapes, figs, and cotton are the chief crops grown. The City of Fresno, with a population of over 175,000, is the county seat, located about 200 miles north of Low Angeles. It is also the southern gateway to the fabulously beautiful Yosemite National Park.

Fires, floods, and earthquakes are constant dangers confronting residents of the county. A rare tornado struck Fresno County earlier this year making citizens aware of a new hazard. Combined with natural disasters, man-caused emergencies present a continuing need for school vigilance and preparedness.

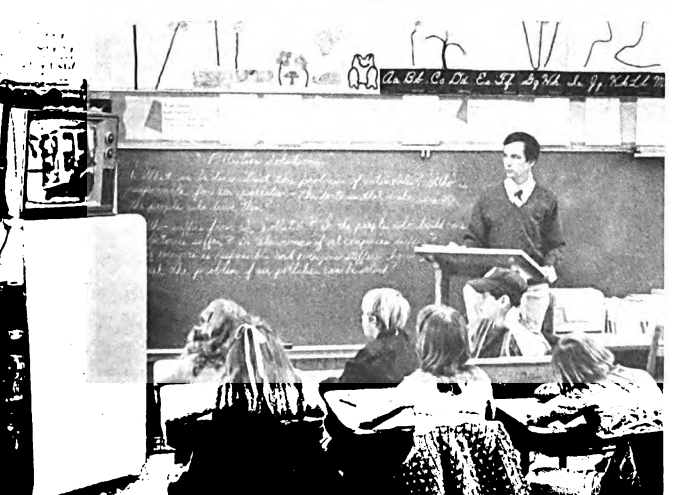
The Seed of a Program

Considering all possible emergencies, a group of Fresno County school administrators met last December to preview the Defense Civil Preparedness Agency's film series *YOUR CHANCE TO LIVE*. According to Kathryn Kendig, Consultant in Radio and Instructional Television for the Fresno County Department of Education, what started out to be a "media party" turned out to be an important new thrust. It became abundantly clear that there was a broader objective than previewing films. The BIG objective was to meet a need, expressed by everone present, to provide some kind of a countywide emergency plan for schools, including an educational program.

Participants in the December preview session met their own challenge by forming into an ad hoc committee, then went to work. Since then they have developed a countywide "master plan" for schools that will facilitate the efforts of school districts throughout Fresno County.

Additionally, the Fresno County schools have initiated a unique approach to give emergency training to teachers and pupils by telecasting the *YOUR CHANCE TO LIVE* films over KVK-21, the county schools' instructional television network.

The ad hoc committee was headed by Ralph Moser, Principal of Lafayette School and Coordinator of Emergency Services for the Fresno Unified School District. He has attended the Institute of Civil Defense and Disaster Administrator Course at the University of Southern California, and the Civil Defense Education Seminar at the Defense Civil Preparedness Agency's Staff College at Battle Creek, Michigan. He is also a Mobilization Designee Officer (MOBDES) to Fresno County's Office of Emergency Services.



FILMS SPARK SCHOOL PREPAREDNESS

Mr. Jean Stovall of the Clovis Unified School District headed a sub-committee to develop the countywide emergency plan.

Board Approval Obtained

First, Fresno County Schools Superintendent, Ernest A. Poore, obtained the Fresno County Board of Education's approval of the Committee's resolution that a Civil Defense and Disaster Preparedness Plan be adopted. Then Stovall's sub-committee dreafted the plan in the form of a flipchart clearly defining responsibilities and procedures for each type of emergency.

Superintendent Poore stated: "Our Fresno County Schools' Civil Defense and Disaster Preparedness Committee is working toward a countwide 'network' which will include: (1) a model emergency plan developed in cooperation with the Fresno County Office of Emergency Services, (2) the designation of a coordinator at each school site, and (3) the extension of educational programs via our countywide instructional television system."

As evidence of the working relationship between local government and schools, committee member Nathan "Hank" Henderson, Director, Fresno County Office of Emergency Services, is assisting in the publication of the flipchart for dissemination to the local districts. As planned, the flipchart will be furnished to each classroom teacher and administrator within the total area of Fresno County. Approximately 6,000 flipcharts will be distributed.

"Use of the *YOUR CHANCE TO LIVE* films in our educational program is a major step in our ultimate goal of protecting lives and preserving property in Fresno County," Henderson said. "Our Fresno County School Superintendent and staff have been most helpful and enthusiastic in promoting the film series."

Mrs. Kendig worked closely with Norman L. Myers, Coordinator, Disaster Preparedness Education, California State Department of Education, to promote the film series. Mr. Myers said: "Mrs. Kendig has inspired the administrators and has been most helpful and enthusiastic in utilizing the film series which was programmed over Fresno ITV KVK-21 for both teacher and student instruction. For the first time in California, and perhaps for the first time in the Nation, a county office of education has utilized instructional television for both in-service education for teachers in disaster preparedness which is then followed by use of the series for classroom instruction."

Teacher Training Course Given

Due to the efforts of the Disaster Preparedness Education staff and Mrs. Kendig, the in-service education was incorporated into an accredited college extension course for the teachers. Mr. Myers, who conducted the course, reported that 126 teachers throughout the Fresno City and County schools enrolled for college or district credit. Additional teachers viewed the series on a non-credit basis.

The film series was developed in support of the *YOUR CHANCE TO LIVE* educational program, aimed primarily at 8th-and 9th-grade students. Thousands of *YOUR CHANCE TO LIVE* teacher and student manuals, covering a wide variety of emergency situations, have been distributed to participating schools in Fresno County by the California State Department of Education. DCPA has distributed the materials to each State for use in local educational programs.

"We have a beautiful media package in the *YOUR CHANCE TO LIVE* program," Mrs. Kendig said. "The films are short and stimulating. The teacher's manual suggests a variety of teaching-learning methods that relate to different school subjects and motivate problem-solving on the part of the pupil. The student manual presents background information on disasters in a format that appeals to youth."

Enthusiasm in the Classroom

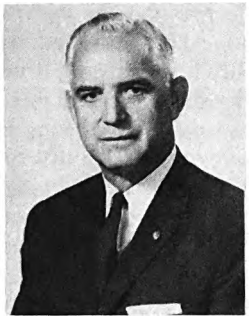
Enthusiasm for the use of the *YOUR CHANCE TO LIVE* series is perhaps best exemplified by teachers in Fresno County who have used them. A few examples:

Carol Robertson, sixth grade teacher: "I grew up in the Los Angeles area and have been familiar with the nuclear warning drills. I am glad to see this warning is being emphasized in the series. It is the first time I have seen this presented in the 13 years I have been teaching."

Grethen Choate, Junior High School English teacher: "The films are interesting to the students. They have provoked considerable discussion and thinking. The subject matter is appealing. Most kids are concerned about survival in one way or another."

Carol F. Baker, sixth grade teacher: "Students who have not participated in large group discussions all year are volunteering readily. I have used the films as discussion starters. Even the dismissal bell doesn't stop the discussions. My initial concerns about student comprehension of the films were totally unfounded."

From his position as State Coordinator for Disaster Prepardness Education, Mr. Myers assessed the *YOUR CHANCE TO LIVE* program this way: "Teachers and administrators are well aware that, in an emergency situation, the action is in the classroom. Teachers recognize the need for instruction in disaster preparedness and have been most receptive to the workshop approach and the materials that are furnished. They do not consider this a new area of instruction to be added to the over-crowed curriculum, but an opportunity to enrich and improve some of the present instructional offerings. Fresno County has designed a program to make classroom instruction in disaster preparedness a reality." ■



viewpoint

Objective: To make the community, and citizens within the community, better prepared to deal with the effects of nuclear attack or peacetime disaster.

How do you achieve this?

Over the past years, we at Federal level have pursued various means of fulfilling our joint obligations with the State and local governments in developing and maintaining nationwide civil preparedness.

At State and local level the prime objective was the same—but ideas and methods for reaching the always-elusive goal sometimes didn't mesh with Federal concepts and implementation.

"Federally imposed" programs, baited with the carrot of matching funds and sometimes with surplus and excess goodies, didn't always go down well.

Somehow when the funds and property and program guidance reached the community they often seemed distorted in the eye of actual local needs, and of local capabilities for realistic application.

What then, was the answer?

A few years ago, a new idea in management began to flower: its name—participatory management. The concept wasn't really new, but as managers both in and out of government looked around, they were surprised to see how little "participation" there was by everyone concerned in various systems.

The idea began to take hold, and is credited in many instances with introducing more realistic and more efficient systems and programs. We encouraged participatory management in civil preparedness—and we took a good hard look at our own programing and management system.

We had a functional system—but it was cast in the old mold: it was topheavy in superstructure, designed around national objectives; and weak at the foundations, with funds trickling down to communities in thinly sliced allotments based on those national objectives; and with little hard data and other information on which to determine local *needs*.

We decided to change that.

After a full year of development, we now have an "objectives oriented" system, based on a good, firm foundation of finding out local needs *first* in relationship to the overall objectives of the national program. The program and budget needs of all participating local governments would be gathered and assessed by the States. The DCPA Regions, in turn, would do the same with each State program and budget submission. And the Regional program and budget requests would then be passed along to DCPA Headquarters. The result is that for the first time, we could have reasonably accurate knowledge of the civil preparedness needs of every participating community in the Nation.

The new system recognizes that emergency preparedness needs and effort necessarily vary with each level of organization. The system therefore is organized in four distinct levels: (1) the citizen, (2) the community, (3) the State, and (4) the Nation.

Briefly, the new management system encompasses not only the basic establishment of objectives, but also programing, budgeting, reporting, and evaluation. The last two elements—reporting and evaluation—are in the long run fully as important as the other elements. As hard data and information develop on ongoing programs—from the communities to the States, and on to the Regions and then to DCPA headquarters, we will have a continuously developing, more firm and more realistic foundation on which to base future objectives and growth.

By "future objectives and growth" we come full circle to the objective I stated at the start of this column: To make the community, and citizens within the community, better prepared to deal with the effects of nuclear attack or peacetime disasters.

Many of you will be involved in implementing the new "objectives oriented" system—at local, State, or Federal level. Dedication of effort by all will be necessary for it to function effectively: to be useful in achieving the always challenging goal of preparedness.

John E. Davis
John E. Davis
Director

October 5-11 is National Fire Prevention Week—a good time to check your knowledge of fires.

A National Household Fire Survey was conducted recently by the National Bureau of Standards of the Department of Commerce and the Consumer Product Safety Commission. Of the 33,000 households surveyed, 2,463 reported fires in the last year. Here are a few results of that survey:

- 65% of the fires started in the kitchen.
- Peak time for those starts was between 5 and 6 p.m.
- Three quarters of all household fires were discovered by females.
- Almost three quarters of all household fires were discovered immediately.
- Over 60% of all fires involved appliances; more than half of these involved ignition of grease or other foods.
- About 90% of the residence-related fires were put out by a member of the household, most often by a female. The fire department was called to less than 10% of the residence-related fires.

It would seem, then, that the most common (if not the most dangerous) type household fire occurs in the kitchen and involves either a flammable liquid, such as cooking grease, or an electric appliance. Are you and your family aware of the quickest and safest methods of stopping such fires before they can spread?

WHAT MAKES A FIRE: (1) fuel to burn; (2) heat to make it burn, and (3) air to keep it burning. Take away any one factor and the fire will go out.

FIRE EXTINGUISHERS AND THEIR USE

Not all types of extinguishers can be used safely on every kind of fire. Pressurized water extinguishers (Class A) are good for trash, paper, cloth, and wood fires, but are normally not used for flammable liquid fires (Class B), or electrical fires (Class C).

Trash, Cloth, Wood Fires

Fires that are burning ordinary combustibles can be put out by cooling or smothering. A stream of water from a garden hose or a fire extinguisher or splashes from a pail of water aimed at the base of the fire will cool the object so that it will stop burning.

Flammable Liquids and Gas Fires

Flammable liquids are those which give off flammable vapors; i.e., gasoline, oil, kerosene, and paint. *A flammable liquid fire must be smothered.* Use a foam, dry chemical, or carbon dioxide extinguisher (marked for Class B fires). Avoid close blasting; it could spatter and spread the fire. If the burning liquid is spread out and not deep, the fire can be put out by throwing sand or dirt on it. Never use a solid stream of water on this type fire. Small cooking fires can be extinguished by turning off the heat source and then covering the flaming pot or closing the oven door. One common kitchen item—baking soda—is an excellent means of fighting kitchen fires. Throwing a handfull of baking soda into a blazing skillet will take away the fire's oxygen and kill it.

Electrical Fires

Electrical fires are usually caused by the shorting of electric wires or the overheating of electrical, equipment *There is always the danger of electrical shock while fighting this type of fire.* First, try to unplug the appliance or shut off the main electric switch at the fuse box. Then fight the

foresight

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John E. Davis
Director

Georgiana H. Sheldon
Deputy Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

fire with dry chemical, carbon dioxide, or any other Class C fire extinguisher. The fire-extinguishing agent in these extinguishers will not conduct electricity, and the user will not get an electrical shock. Never use water on an electrical fire unless you are absolutely sure that the electricity has been shut off.

A Class ABC extinguisher can be used on all three types of fires.

CLOTHING FIRES

Clothing fires occur frequently during morning hours in the kitchen. Loose-fitting sleepwear or loose-sleeved clothing should not be worn while cooking. If children awake before parents, the kitchen should be closed off to prevent an unsupervised child from having access to the stove. Don't store "bait," such as cookies and cereal, over or near the stove. Space heaters are a frequent cause of clothing fires. Make sure they are placed away from traffic, and children and old persons are cautioned to keep their clothing away.

IF CLOTHING CATCHES FIRE

Never run or remain standing if your clothing catches fire. Drop and lie down where you are. If indoors, drop to the floor and roll into a rug, coat, or blanket. If outdoors, drop and roll on the ground.

BURNS

Plunge burned skin into ice water, keeping area submerged until the pain disappears, or apply towels that have been soaked in ice water. Don't put greasy ointments on burns. Call your doctor immediately if burns are serious.

–Sandra E. Farrell.

(More tips on fire safety in the next edition of FORESIGHT.)

New Fire Film

CONFLAGRATION, a new 28-minute, 16mm color film will be released this fall by the Defense Civil Preparedness Agency.

The film tells the story of the fire in Chelsea, Massachusetts in October 1973 which consumed an 18-block area. But CONFLAGRATION is primarily the story of the heroic efforts of an army of 700 firemen from 69 surrounding communities who joined the firefighters of Chelsea in a century-old tradition of mutual assistance. Together they battled 40-mile-per-hour winds and a firestorm that destroyed one quarter of the City of Chelsea before being brought under control.

The film, coded DDCP-20-288 for ordering purposes, will be released to all Regional and State civil preparedness offices. Prints will also be available on a short-loan basis from Army Audio-Visual Centers (film libraries).

$9 Million State Warning Net

If Kentucky Governor Julian Carrol has his way, the State will have the best emergency warning and communication system in the country.

A year after a series of tornadoes killed 88 people and injured 1,269 more in Kentucky, the Governor called a press conference to announce his approval of the Kentucky Emergency Warning System (KEWS). When fully operational, the system will link all State communications systems to the State Emergency Operations Center in Frankfort, and provide the means to instantly inform all residents of the State of an impending emergency.

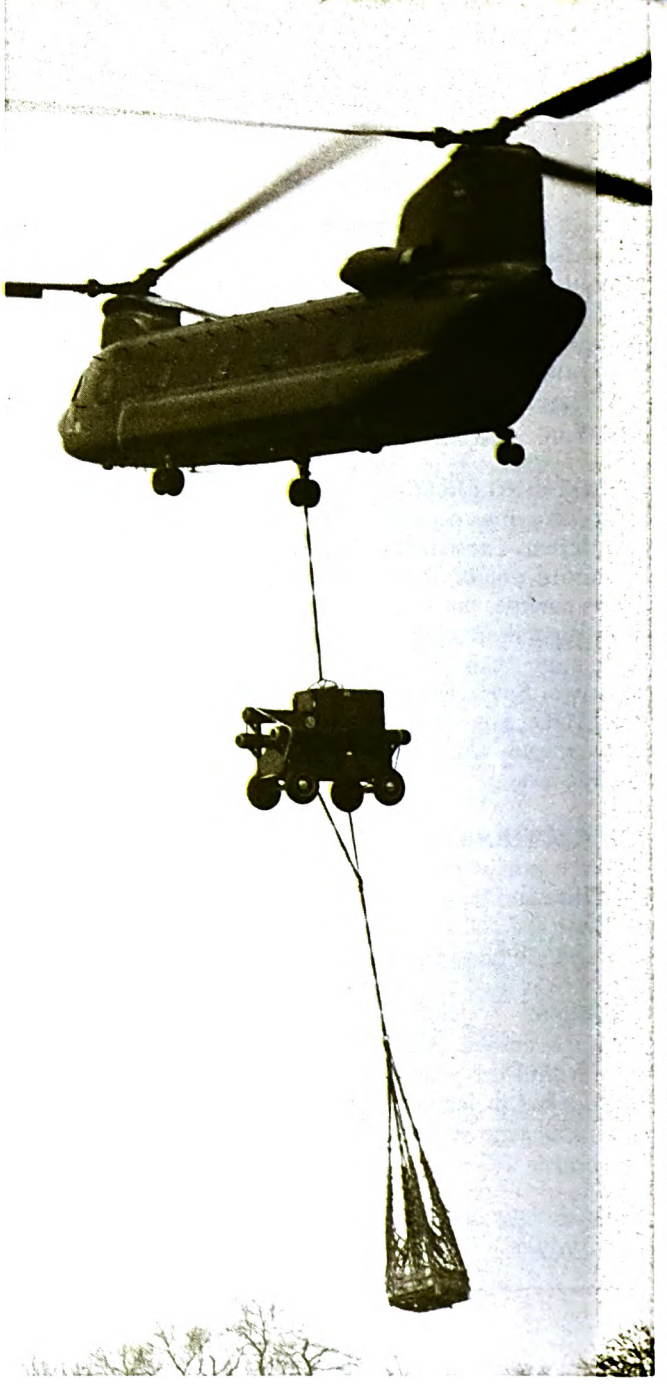
"During the tornadoes of 1974," Governor Carrol said, "we learned that it is essential to gather information at a central point so that damages can be quickly assessed and aid efficiently dispatched." The $9 million KEWS will solve that problem.

One of the most important aspects of the warning system, Governor Carrol explained, is that it will provide an immediate alert to more than 1,300 schools. Warning receivers will be automatically activated even if not in use at the time. (During the 1974 tornadoes, 11 schools sustained damage of more than $2.5 million, but no children were injured.) Industries, businesses, and private individuals will be able to purchase nominally priced equipment to receive the warning signal.

According to James L. Matthews, director of communications for the Division of Disaster and Emergency Services (DES), coordinating officials will be able to provide aid much more efficiently because of KEWS. The network will be monitored around-the-clock on a daily basis by the Kentucky State Police and will connect the Emergency Operations Center in Frankfort with all 16 State Police posts, DES area coordinators around the State, Kentucky National Guard armories, the State Division of Forestry, Department of Fish and Wildlife, Department of Transportation, all Kentucky Educational Television transmitter sites, and other agencies with disaster response capabilities.

Kentucky Adjutant General Richard L. Frymire, who is the Director of DES, explained that more than $200,000 has already been spent to purchase and install some equipment. Additional work will be done as funds are made available and Governor Carrol told the press that he would ask the 1976 session of the State General Assembly to appropriate funds necessary to complete the project.

Concluding his announcement, Governor Carrol said, "I am insisting that Kentucky have the finest total emergency warning and reaction program in the Nation. It is a program that the people of Kentucky must and will have."–**Jack S. Morgan, DCPA Region 3.**



AIRLIFTING AN EMERGENCY POWER GENERATOR from a DCPA Engineering Equipment Stockpile into an isolated flooded area. U.S. Army photo.

MONTANA BEATS THE FLOODS

By GLENN F. GARCELON
DCPA Region Eight

"You can see the high water mark about five feet up on that brown house over there," William E. Murray shouted over the roar of the big pump. "But if you look in the front window, you'll see that all the furniture and appliances were taken out ahead of the flood. That makes you feel pretty good."

Murray, Civil Defense Director for Cascade County and Great Falls, Montana, was taking me on a tour of the west side of Great Falls which, five days previously, was completely under water. A massive snowpack and heavy spring rains had combined to push the Sun River six feet over flood stage. Much of the water remained trapped in depressions which formed huge lakes two or three blocks wide and several feet deep. Five 1,500-gallon-per-minute pumps and over a mile of pipe from the DCPA Engineering Equipment Stockpile had been flown in by the Air National Guard to help move the muddy water back to where it belonged. It was a slow process.

"We evacuated over 4,000 people from this area in the space of 18 hours," Murray said. "Most of them had enough warning so that they were able to move their things to the second floor or truck them out." Murray had asked residents of the threatened area to open all doors and windows before they left in order to reduce the possibility

MONTANA BEATS THE FLOODS

What did the Governor think could be done to make the response even better next time? "We've got to have more training and additional communications," he said. "We were fortunate this time in that flooding occurred in counties which had good civil defense organizations, but we've got to get all of our 56 counties up to the same level. Some County Commissioners don't think civil defense is important because they haven't had any disasters recently. The inevitable result is that they aren't prepared when the time comes."

Governor Judge recommended I talk to Teton County Civil Defense Director Florence Anderson. "They did a splendid job up there," Governor Judge said. "She said it went exactly as the civil defense training program said it would. She went home from the training session, had a drill, and when the flood hit, everything went like clockwork. Everyone know his place and who was in charge."

"That's right," said Mrs. Anderson in an interview in Choteau the next day. "At no time did the situation get out of hand. The State Civil Defense people set up a flood exercise for us two years ago and, as a result, we had the foresight to move one of our fire trucks to the other side of town so that the flood waters wouldn't cut us off, and we had the names and addresses of our sick or elderly prepared in the event they had to be assisted in the evacuation. We also pulled a number of the water cans out of our fallout shelters and filled them with drinkable water before it became contaminated."

"Even the *Your Chance to Live* civil preparedness education series paid dividends," Mrs. Anderson said. "The kids know what the warning sirens mean. Last month, a short circuit set them off and kids all over town set about waking up their parents. This time when we announced we'd be sounding them if evacuation were necessary, we had confidence that the children would be backing us up."

"Confidence" was a word which appeared in Bill Murray's vocabulary that day as well. "Confidence comes from planning," he said. "When the flooding began, I was in Boise with my Guard unit. Monte Tanberg, the State Civil Defense Coordinator for the District, and Bill McIntire, a volunteer who walked into Monte's office 'cold' off the street, set up the whole operation. Because we'd worked it all out ahead of time, I was sure that the problem was being handled correctly."

Planning isn't the whole answer, Tanberg noted. "Without decent communications," he said, "we would have been lost. We found the four-wheel drive communications van the county got from the DCPA excess property program indispensible, and the DCPA National Warning System line put us in instant contact with the Weather Service for warning information and any questions we had."

Good Emergency Information Is Essential

Good communications means more than good equipment. Murray explained: "You've got to follow up and double check each new piece of information you get. Three minutes on the phone at the right time will save you 3 hours on the phone later on." Murray's staff notified all media that there would be just one number to call to get accurate information, and he disseminated all information through Radio Station KMON, the local Emergency Broadcasting station.

Translating the Weather Service's warning messages into terms the average person could understand was done by Bill Rammer, Montana's Chief Meterologist, who spent long hours at the Command Post. "We had the predicted food area outlined on a big map," said Murray, "so that when we received an inquiry from a resident, we could tell by his address whether he should consider evacuation."

I asked Murray if the DCPA On-Site Assistance project, designed to assess and improve local civil preparedness programs, had been of any benefit. He noted that one "action plan" item, the conduct of a disaster planning seminar for public officials, was a particularly useful part of the project conducted 9 months earlier. "We had an excellent seminar and I think many people realized for the first time that we *do* have a professional operation. Consequently, we got lots of cooperation when the time came."

Over a cup of bad coffee and a piece of cold pizza a local shop had donated sometime during the previous week, Murray related a recent experience with a reporter from the *Wall Street Journal*. "She was asking me about Crisis Relocation Planning. I told her I wasn't at all sure we could evacuate this city in the 3 or 4 days called for in the CRP guidance. Well, we just got finished moving more than 4,000 people, almost 200 mobile homes, and tons of household goods in 18 hours. I might have to call her back and retract."

Damages Exceed $21 Million

Sixteen counties in northwestern Montana sustained more than $21 million in damages in the June floods, most of this in a six-county area (Lewis and Clark, Cascade, Flathead, Glacier, Teton, Pondera) where more than 25 percent of the people in Montana live.

But with all the damage, Montanans were proud of how they coped with the disaster. As Governor Judge put it: "We have outstanding civil defense organizations in Montana. Civil defense communications and warning were excellent. We were in control all the time. There were no surprises." ■

Regional Roundup

HOUSTON, TEXAS

Through the cooperation of the local telephone company, Houston residents have received an 8 1/2-by-11-inch civil preparedness basic instruction placard in their telephone books.

Houston Civil Defense Director Fred K. Fox said the cost of preparing and distributing the cards was borne entirely by the telephone company as a part of its public service program.

One side of the card contains information on the basic warning signals and the actions to take, hurricane emergency instructions, and general preparedness information. The other side has a map for tracking a hurricane in the Caribbean and Gulf of Mexico.

PALM BEACH COUNTY, FLORIDA

A medication storage and rotation program has been developed by Palm Beach County Civil Defense with the assistance of County Health Department personnel.

Civil Defense Director Robert C. Owen said that County Pharmacist Jerry Jean Stambaugh and Mrs. Anna Ziegler, a registered nurse, checked all medications stored at the Palm Beach County Civil Defense Emergency Operating Center, and established procedures for their use and rotation.

Under the system, all drugs are taken out of the Emergency Operating Center annually just before the hurricane season, and are replaced with fresh supplies. The medicines taken out of the EOC are used in the county pharmacy. "In this way civil defense is assured of having a fresh supply at all times—drugs that are stored in a locked closet with a limited number of personnel having keys," Director Owen said.

HONOLULU, HAWAII

The Oahu County Civil Defense Agency has expanded its system to warn people when the island is threatened by deadly high surf. In addition to Weather Service and civil defense advisories over the radio, special signs have been posted at strategic points on beaches to warn the public of changing conditions due to high surf.

In addition to the signs, a civil defense mobile communications and warning truck is prepared to move through danger areas advising the public over a public address system.

John W. Bohn, Jr., Oahu Civil Defense Administrator, pointed out that last year five beachgoers were lost in one high surf. "We must impress upon the public the extreme dangers of the high waves that hit us virtually every fall, winter, and spring, and we hope this new system will do that," he said.

MILWAUKEE COUNTY, WISCONSIN

When the young man with the cuts on his forehead was taken to the registration desk of the hospital emergency room, the nurse took one look at him and said, "Suture room." A few minutes later another patient was brought in and the nurse said, "Trauma room."

In the suture room, the orderly went to work with mask, rubber gloves, and cleaning kit. He used Phisohex and saline solution to clean and rinse the injuries. When the doctor arrived, he saw clean wounds, devoid of dried blood or foreign matter.

In the trauma room, the other orderly was busy hooking up the straps of an EKG machine to the patient's extremities as a doctor and two nurses performed closed chest massage, artificial respiration, and cathaterization.

Those two orderlies are neither medical students nor paramedics. One is a member of the Wauwatosa Police Reserve and the other a member of Explorer Post 709, sponsored by the Wauwatosa Police Department.

Under a program developed by the administrative staff of Milwaukee County General Hospital and the Division of Emergency Government Services, Milwaukee County Sheriff's Department, they and other members of their units work on a voluntary basis a couple of hours on Friday nights in the hospital emergency room under the supervision of doctors and nurses.

Jose H. Lowry, Training Officer for the Division of Emergency Government Services, emphasizes that "programs of this nature can be undertaken almost anywhere and their value is incalculable."

CENTRALIA, ILLINOIS

The town of Centralia, Illinois came alive during the weekend of June 21-22 when 139 civil defense vehicles and related equipment rolled into that area for Excessarama III,

(Concluded on page 15)

When Moses—with some help—parted the Red Sea for the Israelites to escape from Egypt, he was controlling nature's elements in a way not achieved before or since.

With minor exceptions, modern man, like his ancestors, must still adjust to whatever weather, earthquakes, and other freakish conditions nature dishes out. He even adds to his misery with man-made emergencies like industrial blasts and transportation accidents.

But modern man need not suffer the catastrophic loss of life and long-term disruption of society wreaked by past disasters if he uses new techniques of communication, transportation, weather forecasting, and preparedness planning to avert the worst effects and marshal resources for efficient recovery.

Worldwide Response System

Within the United States, this work is a cooperative effort of various Federal, State, and local governments, plus private organizations. When the United States pitches in to help other nations stricken by disaster, however, the "ball" is carried by the office of the Foreign Disaster Relief Coordinator (FDRC) and his staff in the U.S. Agency for International Development (AID), a part of the U.S. Department of State. Chief "ball carrier" is AID Administrator Daniel Parker, who was appointed by President Ford early in 1975 as his Special Coordinator for International Disaster Assistance.

FDRC is virtually a unique outfit. With the exception of Great Britain's, it is the only unit of any government in the world whose sole mission is to help the citizens of other nations stricken by disaster. It's a sort of professional "Good Samaritan" for Uncle Sam.

America did not come late to such a role. In 1812, early Americans—already steeped in the frontier tradition of helping one another meet hazards to life—voted through their Congress for the first $50,000 in disaster aid to earthquake-stricken Venezuela. Since that time, the United States has never refused to aid a nation requesting a helping hand in a disaster, even when the U.S. was sometimes at odds with a recipient nation diplomatically. An average of 45 times a year, including 5 or 6 "big ones," the people of the United States, through AID, respond to the needs of victims of a new disaster which has struck somewhere in the world.

This American response—well meaning as it has always been—has not always been as well organized. Russell S. (Tim) McClure, AID's worldwide disaster coordinator, points out that "especially in disaster-prone countries, disaster is part of the continuing environment." Yet, even into the early 1960's, the U.S. Government kept meeting each disaster "as if it had never done it before."

The result was often a kind of disaster anarchy. Sometimes, too few supplies were sent to one disaster area while the wrong kind were piling up at other shipping points, such as woolens for the tropics, or rain wear in the desert. National-aid missions and voluntary agencies sometimes got in each other's way or worked at cross purposes, while other areas were ignored.

American AID in Foreign Disasters

By RUSSELL B. CLANAHAN

WORLDWIDE COMMUNICATIONS CENTER at the U.S. State Department used to coordinate American assistance to other countries hit by disasters. (AID photo)

CHARTING EMERGENCY ACTION are William R. Dalton (left), Assistant Foreign Disaster Relief Coordinator for AID, and Robert W. Harris, one of his staff members. FDRC operates on a yearly budget of about $400,000 but coordinates about $150,000,000 worth of foreign disaster relief annually. (AID photo)

BLASTING A PATH through banyan trees on the Island of Mauritius in the Indian Ocean after Cyclone Gervais struck the island last February. Sailors from the carrier USS Enterprise dynamited the road block. The cyclone blew trees across roads on many parts of the island, and since there wasn't a single chain saw available, AID arranged for 12 to be sent in from Guam along with water tanks and tents to help the residents. (AID photo)

An End to Disaster Anarchy

The beginning of the end of this ad hoc approach to international disaster relief came in 1964 with the establishment of the office of the Foreign Disaster Relief Coordinator. Over the past 10 years, FDRC has played a key coordinating role as the U.S. Government and voluntary agencies responded to some 430 foreign disasters which left an estimated 3.5 million dead and 400 million disaster victims. Dollar damage exceeded $11 billion. Donor nations, including the United States, and private and international organizations have provided $2.8 billion in emergency relief and rehabilitation.

Of course, other nations contributed to this great international effort. Among leading donor nations to disaster-stricken countries are Canada, Great Britain, the Scandinavian countries, the Arab states. West Germany, and Communist China. But because of America's worldwide supply and stockpiling system, surplus foodstuffs, and widely dispersed fleet of transport planes, ships, and helicopters, the United States has always been preeminent in international disaster relief efforts.

The word "coordination" is not only in the FDRC title, but is the key to its entire operation. To coordinate any large operation is to gather information from many diverse but relevant sources, evaluate that information to set priorities, and then arrange for task forces to carry out essential jobs.

Unique Communications Hub

In FDRC, the heart of this coordinating effort takes place in the 1 1/2-year-old Foreign Disaster Relief Coordination Center—the only one of its kind in the world—at AID's Washington, D.C. headquarters in the State Department. It looks a lot like a civil defense emergency operating center, but with maps, four world-time clocks and communications links set up to work on a global basis.

Just outside the carpeted, sound-proof main control room is a telephone console which can handle 500 to 700 calls a day. When one or more major disasters have riveted public attention to widespread human suffering, that console is lit like a Christmas tree with calls offering assistance, seeking information on loved ones, or reporting on activities underway. Calls are screened and directed to appropriate specialists occupying the 14 "hot seats" around the horseshoe-shaped table in the control room.

With telephone ties into the State Department and Pentagon communications systems, personnel in the control room can reach almost anywhere at anytime. Special circuits connect with Geneva, Switzerland, home of the United Nations Disaster Relief Office and the League of Red Cross Societies.

FDRC is also connected to State Governors who have been asked to appoint special State disaster coordinators to serve as a point of contact and information dissemination between AID and the American public on major disasters. Nearly all Governors have responded to this AID request, naming in the majority of cases their State Civil Defense Director. AID communicates with these coordinators through the National Warning System (NAWAS) run by the Defense Civil Preparedness Agency, which transmits the messages for AID. NAWAS reaches all State Governors and State civil defense offices by direct wire.

The elaborate FDRC coordination center is part of the American mechanism for providing help in a hurry. FDRC officials are acutely aware that each hour lost can cost additional lives, especially during the first 72 hours of a major disaster. Other measures to speed emergency aid include blanket authorization for the American ambassador in any stricken country to approve the use of up to $25,000 for immediate critical needs. In addition, by stockpiling emergency supplies in Panama, Guam, Italy, and Singapore, AID is able to reach a disaster scene much more quickly with tents, blankets, medical supplies emergency power generators, small boats, and the other immediate necessities on the road to recovery.

Working on Disaster's 3-R's

Even at best, that road is a rocky one, as a stricken nation or region struggles through "Diaster's 3-R's": Relief, Rehabilitation, and Rebuilding.

1. **RELIEF**—The kind FDRC is mainly engaged in involves getting disaster victims some kind of shelter, food, and pure water, averting disease, and sometimes removing people altogether from the afflicted area. To do this, FDRC has had a $15 million contingency fund to buy necessities and transport them where needed. Because FDRC has leverage in obtaining surplus foods and appealing for donated goods and services, the actual value of disaster relief granted foreign nations each year approximates $150 million. AID has also shipped surplus civil defense fallout shelter tinned crackers to many nations faced with critical food shortages.

2. **REHABILITATION**—These are the immediate follow-on efforts to bring back some semblance of normality to people's disrupted lives. For example, temporary bridges are constructed, electric power and communications systems are brought back into operation, and people return home to salvage what they can. The *Relief* and *Rehabilitation* stages are the ones in which AID's Foreign Disaster Relief Coordinator is involved.

3. **REBUILDING**—American long-term help to a stricken nation is channeled through AID's regional bureau. Speed is no longer crucial, and closer attention is paid to the most efficient use of available funds and to better planning. For example, such funds would not be used to rebuild on a flood plain or other hazardous location.

There is nothing new about the Disaster 3-R's; people have been going through the same dismal sequence in one way or another for thousands of years. What is new, points

out William R. Dalton, the assistant to FDRC Coordinator McClure, is that "disasters are becoming more serious each year due to the constantly increasing number of people affected in this overcrowded world." This is why he feels there is a rapidly growing interest worldwide in disaster planning.

International Seminars Held

Because of its pioneering role in disaster relief work, both at the governmental level and through privately-funded voluntary agencies, the United States is in a unique position to meet this global interest. Since 1969 it has been doing so through sponsorship of 6-week annual International Disaster Preparedness Seminars bringing together more than 80 high officials from 25 nations with a disaster relief or public safety responsibility in their homelands.

This is the graduate school of disaster planning. The officials brought from abroad already have contended with emergencies in their homelands, so one of the most important functions of the seminar is simply to exchange experiences and techniques. The United States learns much from these exchanges as well as imparting what knowledge and broader perspectives America has gained by its worldwide disaster efforts.

In a typical seminar, such as the most recent one from June 10 to July 18, 1975, discussions and theory are mixed with practical demonstrations. The group, for example, went to Roanoke, Virginia to observe a community-wide exercise of emergency services' response to a simulated airliner crash into a school. Then a critique was held involving an exchange of ideas between Roanoke officials and the Seminar participants from 21 countries.

There is much altruism inherent in AID's disaster mitigation efforts through the seminars and the better disaster planning which results. But there is also some hard-harded thinking behind these efforts. Disaster mitigation can save money, both for the United States and the national struck by a disaster.

Karl Mahler, Chief of FDRC's Disaster Technical Assistance Branch, explains it this way:

"For the disaster-threatened country, disaster planning makes good sense because it means that economic disruption will be held to a minimum, and people will get back to work earlier. By controlling disease and getting roads and production facilities back in operation, people's incomes are restored and the nation is able to retain its export trade, protect foreign markets, and earn foreign exchange."

Benefits to All Concerned

The United States benefits also, he points out, when other nations are better able to help themselves. Instead of "shotgunning" its aid, America can focus on special needs of the disaster-struck country while the nation can supply many of its own basic needs such as food and water from stocks near the area of need. "For instance," Mahler said, "if a nation can stockpile food or the means to purify local water, it means we could fly X-ray equipment, technicians, and medical supplies to them instead of food, water, or shelter items."

In addition, Mahler points out, the United States depends on other nations for much of our raw materials and as markets for our products. "By helping to assure their well-being, we also help our own," he noted.

The United States Civil Defense Council (USCDC), the national organization of local civil defense officials, is among the organizations that cooperate closely with AID's office of the Foreign Disaster Relief Coordinator. At its October 1975 conference in Albuquerque, USDC, in concert with FDRC, will conduct a panel on domestic and international coordination in handling relief supplies for disasters occurring in foreign countries.

One of the big problems in international disaster assistance is in determining just what is actually needed in a stricken country. To facilitate the exchange of information with other donor nations, to open new information channels with disaster-prone countries, and to avoid costly mistakes, AID has donated this year $750,000 to the United Nations Disaster Relief Office, which has virtually no resources of its own. Again, by helping others, we help ourselves.

Among America's many good traditions are sympathy and help for a person, or a country, when down and out. At the same time, there is enough "Yankee trader" in most of us to demand our money be spent wisely to help people to help themselves. AID's international disaster program is an effort to do both. ■

Regional Roundup *(Continued from page 11)*

the third annual exhibit of Defense Department property on loan to civil defense agencies. The program is held to show the public how the equipment has been repaired, painted, and turned into a valuable asset to local communities.

Centralia Civil Defense director Orville Franke said some 900 citizens turned out in 99-degree weather to view the massive outlay of equipment at the Fairview Park Shopping Center.

Byrad R. Bridgett, Coordinator of Mutual Aid Region 5A of the Illinois Emergency Services Agency, and the man directly responsible for the three Excessaramas, said he started the program when "I decided we could do much more than we had been doing to get our equipment in shape and take pride in it."

Emergency equipment displayed ran the gamut from 2 1/2-ton trucks designed into fire trucks, to scuba diving gear. It included such pieces as jeeps, trailers, emergency power generators, panel trucks, wreckers, launch boats, rescue vans, communications vans, lighting equipment, and the versitile slab, four-wheel-drive former Army "mules."

Lessons from the

Hurricane Lady, packing 150-mile-per-hour winds, and tidal waves reaching 23 feet, swept through Naples, Florida on the Gulf of Mexico on June 20, testing to the hilt the emergency preparedness of Collier County, an area of 58,000 permanent residents and thousands more in the winter months.

Property damage was devastating. There were some fatalities. Many persons were injured, but casualties were comparatively low because 65 percent of the population had been evacuated the day before.

Heavy rains and strong winds lashed the beaches as the tidal waves increased in intensity, leaving visible only roof tops of houses along the coast and stores in the near-shore business district. Water 10-to 12-feet deep spilled across the Tamiami Trail beyond the Naples airport three miles to the east. The Emergency Operations Center in the Collier County headquarters complex on the first floor was flooded and fourth-floor temporary quarters had to be used as the full force of the hurricane swept ashore.

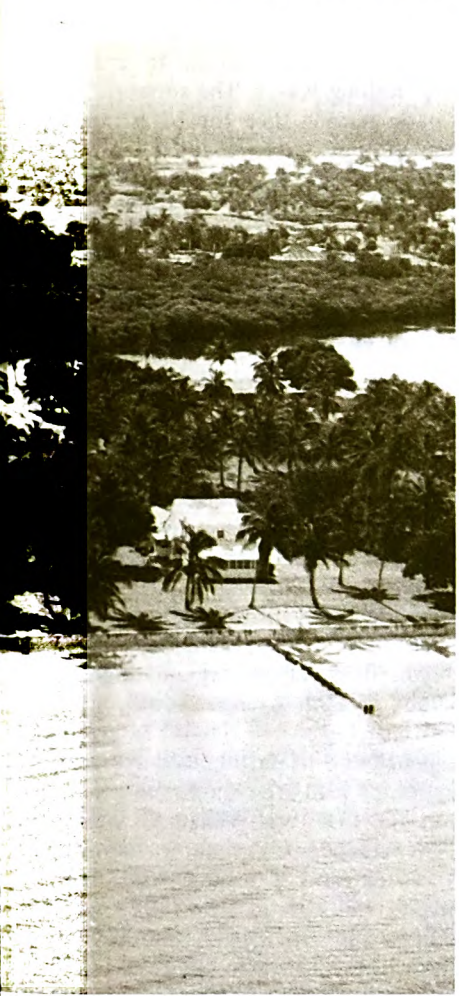
Problems at the Zoo

All power was cut off. Palm trees were uprooted. Fish from the Gulf were swimming in the streets. Lions, tigers, reptiles, alligators, and other animals from Jungle Larry's Safari in Caribbean Gardens on U.S. Highway 41 near the center of Naples, scrambled in all directions when flood waters upended fences at the well-known Zoological Park. Mobile homes were lifted from their anchorage. Yachts, cabin cruisers, fishing vessels, and other power and sail boats were blown out of the water from their moorings. Fires broke out in service stations when electric wires were

Lady...

By JOHN G.W. MAHANNA

Naples Daily News photo



The problem . . . the area . . . and the preparedness planners.

felled by flying tree limbs, spreading to the plush shopping areas between Broad Avenue, South and 14th Street, South. The art galleries, boutiques, and other fashionable businesses on the attractive promenade from the Tamiami Trail to the Gulf were a mass of ruins. Condominiums, millionaires' estates, and high-rise structures between Port Royal, Vanderbilt Beach, Bonita Springs, and Fort Myers Beach to the north were severely damaged, some crumbling at the foundations. Other buildings, including several beach houses constructed on pilings or "stilts," fared better as water gushed beneath the first floors.

Realistic Training Exercise

These are only a few examples of the simulated problems faced during a training session to test the emergency capabilities of local governments in Collier County in the event of a disaster—either nuclear or natural.

The Hurricane Lady exercise was programmed by two coordinators for Florida State University's Civil Preparedness Extension Program, Norman H. (Scrappy) Scawthorn and Rick Kasten, both veterans of creating hypothetical situations that can become grim realities. Also participating in the disaster preparedness exercise were John Buchanan, South Florida Area Coordinator for the Florida Division of Emergency Government, and three forecasters from the National Hurricane Center in Miami, who tracked the simulated hurricane from southeastern Mexico, where it formed, until it hit Naples. The trio also prepared the advisories beginning with the first bulletin on June 17 when "Tropical Storm Lady was located by Air Force reconnaissance 150 miles southeast of Cozumel, Mexico and is moving north."

Detailed Weather 'Bulletin'

Regular advisories were given daily as Lady strengthened to hurricane force. As Lady passed near Cuba a hurricane watch was in effect on Wednesday but at noon on Thursday when the Center described the hurricane as "extremely dangerous, threatening the Florida coast," emergency hurricane warnings were put into effect, resulting in this "bulletin" from the National Weather Service's Hurricane Center:

This Statement Applies to Collier County.

Hurricane warnings are in effect for that portion of Collier County from Naples northward. Gale warnings and a hurricane watch are in effect for the remainder of Collier County.

The main threats from this hurricane are flooding of low-lying coastal areas and damage resulting from hurricane-force winds.

It is recommended that the following areas within Collier County begin evacuation immediately. The City of Naples south of Fifth Avenue South... the area between State Road 858 (Kelly Road) and Naples Bay and south of Davis Boulevard... North Naples west of Third Street and west of Crayton Road... the Vanderbilt Beach area on the beach side of Vanderbilt Drive... all other areas in Collier County north of Naples within one-half mile of the beach.

For the remainder of Collier County... including Marco Island... Goodland... Everglades City... Chokoloskee... a slight shift in the course of this storm could require evacuation of these areas and residents should be prepared for immediate action.

All mobile home occupants in the hurricane-warning area should secure their homes and property and relocate to designated shelters or permanent-type structures outside the evacuation areas.

Storm tides of near 10 feet are forecast over portions of Collier County and tides should begin rising later tonight.

Gale-force winds are expected early Friday and will be increasing to hurricane force by mid-morning on Friday over the warning area.

Six hours later the hurricane warnings were extended, advising mobile home occupants to relocate to designated shelters, urging all persons in the Naples coastal area, Vanderbilt Beach, all of Marco Island, Goodland, Everglades City, Chokoloskee, and all other areas in Collier County within one-half mile of the beach to evacuate immediately.

Early the following morning, about 4 hours before the full force of the hurricane hit Naples, all residents who had not been able to evacuate were urged "to go to the nearest well-constructed high-rise building and wait out the storm in an interior hallway above the second floor."

While these advisories were being received from the Miami Hurricane Center, Collier County's emergency preparedness plan was being given a severe test.

Sightseers Are in Trouble

The famous Naples fishing pier, a symbol of the area's history, posed a major problem during the exercise.

"Four sightseeing tourists are on the end of the pier watching the tidal waves build up and they won't leave," reported a Naples policeman to the temporary EOC.

Soon the wooden peir structure started to crumble under the weight of the lashing waves. The supports gave way at the half-way mark, leaving thee tourists stranded. There was no way they could escape to safety as the winds reached gale force. Storm tides nearly 5 feet above normal were forecast to accompany the arrival of the storm center within the next few hours.

Here was a classic example for the exercise participants to try to solve. Unlike similar incidents in previous hurricanes, county officials found the authority given by the Florida Legislature to compel people to evacuate a threatened area, could have been invoked in this case, saving the lives of the tourists.

Built in 1888 as a freight and passenger dock, the Naples pier stands as a community landmark. Narrow gauge train rails spanning the length of the pier transported freight and baggage in the early 1900's.

Hurricanes in 1910 and 1926 caused considerable damage to the pier, but it was Donna in 1960 that practically ripped it appart. In 1961, through the generosity of Mr. and Mrs. Lester Norris of Naples, the destroyed pier was rebuilt along Tahitian lines. Open day and night, it stands sturdily at the foot of 12th Avenue, South, facing the Gulf of Mexico.

Charged with the responsibility of putting into operation the Collier County Emergency Plan after the first hurricane advisory was received at the EOC was William C. Walker, Jr., the County's Civil Preparedness Coordinator. A former insurance company executive and a retired U.S. Army Captain, he was named to the post in April 1973, took DCPA Home-study courses, and attended the DCPA Staff College at Battle Creek, Michigan "to gain as much knowledge as I could to handle this important job."

On-Site Assistance Project Helps

One of his first important moves was to enlist the support of the Board of County Commissioners to request DCPA and State authorities to help increase the county's emergency operating capabilities through an On-Site Assistance project. A survey was completed within the year and a master plan is in the process of being worked out.

However, because the hurricane season generally starts June 1 and extends to October, Walker and the Board of County Commissioners wasted no time in agreeing to test the county's resources. Consequently, the team of Scawthorn and Kasten from Florida State University prepared the simulated disaster and lined up the participants in three categories—executive, operations, and support.

During the week-long briefings with top county and city officials, the programmers explained the functions of the

County Commissioners as the executive arm; the operations group made up of the County Manager, the sheriff, fire and police chiefs, health and welfare authorities, engineers, Red Cross, law representatives, and others; the support group including messengers, switchboard operators, map, problem and shelter status board plotters.

They emphasized that the damage situations which are assumed for the purpose of the exercise are designed for trianing purposes only. Effects are assumed solely for the purpose of providing members of the emergency staff with an opportunity to consider and deal with the widest possible variety of emergency problems.

At the increased readiness briefing for the hurricane exercise, the participants were told, "It is most important to understand that any location in Florida could be in the path of a hurricane and that all possible measures to protect people against the high winds and water through the use of shelters must be carried out."

Records Tell the Toll

National Oceanic and Atmospheric Administration records show that, since 1900 in the State of Florida alone, 3,151 people lost their lives in 22 hurricanes. In 1928, when hurricane wind-driven waters of Lake Okeechobee in Florida overflowed into populated areas, 1,836 people were killed. And when the Labor Day hurricane storm in 1935 hit southern Florida, 408 deaths were reported.

De. Neil Frank, Director of NOAA's National Hurricane Center in Miami, has noted that the population of beach residents along the Atlantic and Gulf coast has increased by more than 40 percent during the period 1960-1970. In Naples the population has tripled in 10 years and building permits have more than tripled in the same time frame.

"Although the U.S. has not had a major killer hurricane since 1969—when Camille caused more than 300 fatalities—the threat of a devastating series like those we had along the East coast in the 1950s is constantly present," Dr. Frank emphasizes. "Much as we would like to, there is no way we can predict in advance whether or not the coming season will be relatively quiet, like the past few years, or incredibly destructive, like 1954 and 1955, when in both years major hurricanes scourged the Atlantic Seaboard in rapid succession. So our message to community leaders in hurricane-vulnerable areas is: *Be ready.* Think now what you would do if your city were about to be hit by a major hurricane. Conduct drills."

That is why the Collier County Board of County Commissioners was eager to test and examine its emergency preparedness capabilites.

Newcomers Need to Know

Bill Walker, the Civil Preparedness Coordinator, felt after the exercise was completed that "considering the facts, I think it went quite well. I was particularly pleased with all of the agencies that participated. For some it was an entirely new concept of operation." He added that he hopes to schedule similar exercises in the future, especially since only 10 percent of the county's current population has ever experienced a hurricane and knows what to expect.

The South Florida State Civil Preparedness Coordinator, John Buchanan, concluded the test showed the importance of planning ahead. "We have to mobilize and think about getting our resources out of here so they can be used in recovery efforts," he added. "This means detailed planning."

However, county and city officials observed many flaws in the test. A few of the points they made were that the role of the County Commissioners as executives in an EOC must be better defined; evacuation routes are inadequate; public works equipment needs to be moved to high ground before the storm and spread out to various sections of the county, and, plans must be developed to protect the agriculture community.

But the entire week's activities, aimed at saving lives in an emergency, was perhaps best summed up by Thomas E. Hayer, Editor of the *Naples Daily News,* who said:

"Having stayed right here when Donna hit us right on the button in 1960, I am very respectful when it comes to hurricanes and I think this respect is shared, without undue panic, by everyone in this area. Expect them, know what to do when they hit, and pray they never develop to hit anyone. That's our motto." ■

HURRICANE PARTIES ARE OUT

Today with the enactment of legislation by several States, hurricane parties like the one that cost the lives of 24 persons who ignored civil defense warnings when Hurricane Camille roared through the Gulf coast at Gulfport, Mississippi in 1969, may become a thing of the past.

The Florida Legislature has given power to the Governor to "direct and *compel* the evacuation of all or part of the population from any stricken or threatened area within the State if he deems this action necessary for the preservation of life or other disaster mitigation, response, or recovery."

According to the Council of State Governments, the action taken in Florida stems from the Example State Disaster Act suggested by the Council, and has been enacted with some variations by 18 other States: Arkansas, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Nebraska, North Carolina, North Dakota, Rhode Island, South Carolina, Texas, Virginia, and West Virginia. Legislation is pending in several other States.

The Example Act and supplements have been endorsed by the National Governor's Conference and the National Conference of State Legislatures.

Disciples in disaster relief

The Salvation Army

By MAJOR ERNEST A. MILLER
National Consultant for Public Affairs
and Disaster Services / The Salvation Army

This is the third article in a special FORESIGHT series on religious groups in the United States that have organized themselves to provide timely assistance to the victims of major disasters.

Salvation Army disaster services can take many turns. Some recent incidents of that service occured in:

■South Boston, Massachusetts: Hot food from mobile canteens was supplied to residents of a neighborhood without heat during a 2-day power blackout.

■Oakland, California: 10,000 diapers were rushed to Travis Air Force Base for Vietnamese orphans arriving from overseas.

■Dubuque, Iowa: Canteen service was maintained around-the-clock for sandbaggers along the Mississippi River levees while the waters rose.

■Tocoa, Honduras: In the wake of Hurricane Fifi, an emergency field hospital was set up with a volunteer professional staff assembled from seven countries.

■Bronx, New Youk: A 19-year-old volunteer canteen worker arrived at a fire ahead of the canteen, n time to: pull a drowning man from a nearby river; apply artificial resuscitation; ride with the ambulance to the hospital, helping to restart the victim's heart twice on the way, and return to the fire scene for further canteen duty.

■Louisville, Kentucky: Following a tornado, a home owner said, "Whoever thought we'd be living in a $70,000 home one day and eating our meals at a Salvation Army food center the next day?"

A Tornado Tells the Story

The story of Salvation Army disaster service may best be told by focusing on the story of a single disaster: a tornado that swept through Omaha, Nebraska, in the spring of 1975.

Within minutes after the storm passed, the Salvation Army was moving in to help. First to arrive were volunteer crews in mobile canteens ready to provide emergency feeding to tornado victims and rescue workers. Quickly three separate feeding stations were set up in strategic sites in the disaster area.

Mobile feeding units fanned out from the station to reach victims and workers in remote areas when they could not easily come to the stations. A refrigeration truck was located near the command post to assure access to fresh-food supplies as needed. Emergency feeding was to continue for several days—as long as victims remained dislocated, and as long as rescue workers were on duty.

Communication with this network of service was maintained through a team of communications volunteers who manned a central mobile-communications van, and who operated their own citizen band mobile radio units.

As volunteers offered to help, they were put to work sorting and preparing clothing for distribution. Always a tedious and highly essential job in any disaster with many victims, the work with clothing went on for many days with hundreds of volunteers taking part. Thousands of garments were distributed to those who needed them.

Salvation Army buildings in the area became busy centers for disaster service. A principal function was food preparation. But other activities included emergency housing for victims, assembly and storage of their personal effects, and counseling and assisting individual disaster victims.

Special Counselors on Duty

Much of the counseling following the disaster was centered in the "One-Stop Service Centers" set up by the Federal Disaster Assistance Administration. Salvation Army counselors were on duty there, including a professional case worker experienced in dealing with acute human problems. And the human problems confided to the counselors were often complex and deeply felt. For example, a daughter came to get help for her mother who was huddling in one room of the house, less damaged than the rest. Mother was too proud to ask for help. A father had just been released from the hospital to go home. But the house had been destroyed in the tornado so he was brought to the Salvation Army counselor.

While Salvation Army counselors were dealing with these problems, helping victims to find answers and to be relocated, other workers were walking through the devastated area, moving from one pile of debris to another, seeking out those who did not know that help was available. Leaflets were distributed telling people where to go for help, and other victims were located in their damaged homes and taken to find help.

Salvation Army personnel engaged in the Omaha disaster operation included 31 officers brought in from nearby cities. Many of these were trained social workers, and all were experienced in disaster releif. These were assisted by more than 1,100 volunteers, many of whom were a part of regularly structured volunteer disaster teams, while others were recruited at the scene.

Statistics of Service

The statistics of Salvation Army service in the Omaha tornado are impressive:

- –3,850 full meals
- –60,000 cups of coffee
- –32,000 sandwiches
- –37,000 cold drinks
- –22,600 garments of clothing
- –6,486 hours by Salvation Army personnel
- –8,974 hours by volunteers

In the Salvation Army, no one is assigned to disaster-related duties full time. But everyone is ready to serve as needed when disaster strikes. Salvation Army officers and employees often have long and extensive experience in disaster service. Some have served in many parts of the Nation and have thereby gained experience in many types of disasters.

Volunteers Have Key Roles

But by far the largest number of Salvation Army disaster workers are volunteers. Many volunteers are members of Salvation Army advisory boards or service unit committees. When disaster strikes in remote areas, these people often alert Salvation units nearby and call in equipment from other cities, while taking charge of an immediate relief effort at the scene.

In many cities, Salvation Army disaster teams are organized to respond quickly to an emergency. These teams are made up of volunteers who work with the Salvation Army, under Salvation Army identification and direction. Some disaster teams specialize in communications, with each man owning and operating a citizens band two-way radio. With a well-equipped communications center, often a mobile trailer laden with electronic gear, the team moves quickly to a disaster site to provide communications for relief workers.

Recently, when a tornado ripped out the center of a mid-western city destroying local telephone equipment, police radio and other communications, a Salvation Army emergency-communications team moved into the area. Volunteer members of the team operated their own radio equipment for several days, providing the only communication in and out of that city, until normal service could be restored.

Other emergency teams operate mobile canteens for emergency feeding. Volunteers maintain and service the equipment, while supplied are kept ready for immediate preparation and serving in nearby kitchens.

Volunteer members of emergency teams often purchase their own special uniforms and equipment, meet regularly for training exercises and planning, and give generously of their time to sharpen their skills for service.

Emergency Equipment Is Essential

Disaster readiness requires the assembly and maintenance of a wide variety of equipment. The Salvation Army has become well known for its emergency feeding services and related equipment. This includes the familiar mobile canteens with coffee and sandwich service. But far more sophisticated equipment is deployed throughout the Nation as well, including: mobile-communications centers, water-purification units, modern canteens with self-powered refrigeration and cooking facilities, trucks, vans, and buses.

A basic resource is the network of Salvation Army buildings, community centers, camps, hospitals, and institutions in a thousand cities throughout the Nation. All of these stand ready for emergency housing or for other purposes as needed in time of disaster.

Always ready are quantities of clothing and household supplies which may be passing through Salvation Army thrift shops and rehabilitation institutions. It is Salvation Army policy that all these supplies may be used immediately if needed in a disaster.

SALVATION ARMY OFFICER comforts a fire victim.

The Salvation Army has learned that, in times of a major disaster, the immediate need is so great and established services so limited, that the combined efforts of government and many voluntary agencies are often inadequate. While victims of disaster wait for service, there is work and need for everyone able to serve. Therefore, the Salvation Army has always worked closely with other volunteer groups and various units of government. While services of two or more groups may seem to be similar, those services need not be duplicative while needs exist, and while the services are not competitive.

In recent years cooperation among voluntary groups and government agencies has improved greatly. This has been achieved through the holding of regional, State, and local disaster-planning meetings with growing frequency. Several different groups are sharing the initiative and sponsorship of these meetings. The climate of cooperation in them is warm and productive. The Salvation Army is helping to work for better cooperation and more effective service in all parts of the country.

Relationships between groups are often furnished by written agreement. A formal agreement has been signed between the Salvation Army and the Federal Disaster Assistance Administration, the agency that coordinates Federal relief in major peacetime disasters. Agreements also have been signed with the Defense Civil Preparedness Agency and with the Civil Air Patrol. Still other formal relationships are being developed with voluntary organizations, such as the Red Cross, Church World Service American Radio Relay League, and others.

A recognized requisite for good disaster preparedness is training. The Salvation Army is taking steps to insure that its people are prepared and properly trained. Training exercises in cooperation with other agencies often grow out of local planning meetings, and Salvation Army workers readily participate. In cities where voluntary disaster teams are organized, regular training is a part of their continuing routine. At every administrative level there are frequent reviews of training programs, along with equipment and inventory checks.

The Salvation Army has recently published a new manual called *ACTION–Manual for Emergency Disaster Service.* It sets forth procedures for meeting the needs of disaster victims, and outlines the organization and authority necessary for effective service.

The manual lists action priorities for disaster service. It lists "meet the need" as the first priority. Then it directs the worker to "set up a station," and "contact local authorities," along with other procedures. The manual is intended for the use of volunteers as well as full-time Salvation Army officers and staff. It gives guidance for a variety of disaster situations, and it sets forth Salvation Army policy for use of resources and facilities in time of disaster.

A Matter of Human Concern

The Salvation Army got started in disaster service out of purely human concern. The Salvationists care for people. And that care grows out of the religious convictions of the Salvationist who believes that love for people is an expression of love for God, and that by serving needs of people he also serves God.

This close identity of the Salvationist with God's love has often been a critical factor in disaster relief, for seldom is human strength stretched so thin as in the victims of overwhelming disaster. In the moment of most acute crisis, the presence of a uniformed Salvationist can be a vital link to God.

This spiritual quality is recognized everywhere as a part of the service of the Salvation Army. For that reason Salvationists are often called upon in a disaster to perform those functions where human care and spiritual strength are most needed: identification of the dead, reassurance at the hospital, counseling of victims and their families.

When a disaster occurs, Salvation Army people drop everything and go to meet the need. That has been a tradition everywhere for a hundred years. But with new skills and capabilities, Salvation Army workers are giving better and more effective service in the 1970's than ever before.

Salvation Army workers serve better because they have met with other local groups and officials to plan for an emergency.

They serve better because they work together with others to avoid duplication of effort.

They serve better because they have taken special training courses and have participated in preparedeness exercises.

They serve better because they work with improved equipment and facilities.

They serve better because of many volunteers, sometimes numbering in the thousands, who work with Salvationists to meet the needs of people.

Knowledge Quells Radiation Fear

By COLONEL ALFRED A. DE MATTEO / Coordinator
Civil Defense and Disaster Control / Morris County / New Jersey

A year ago a worker in a Morris County, New Jersey industrial plant was exposed to radiation. During the few hours following the accident, it became apparent that all emergency departments were lacking in knowledge as to what radioactivity is, what it can do, and how to handle exposure and contamination cases.

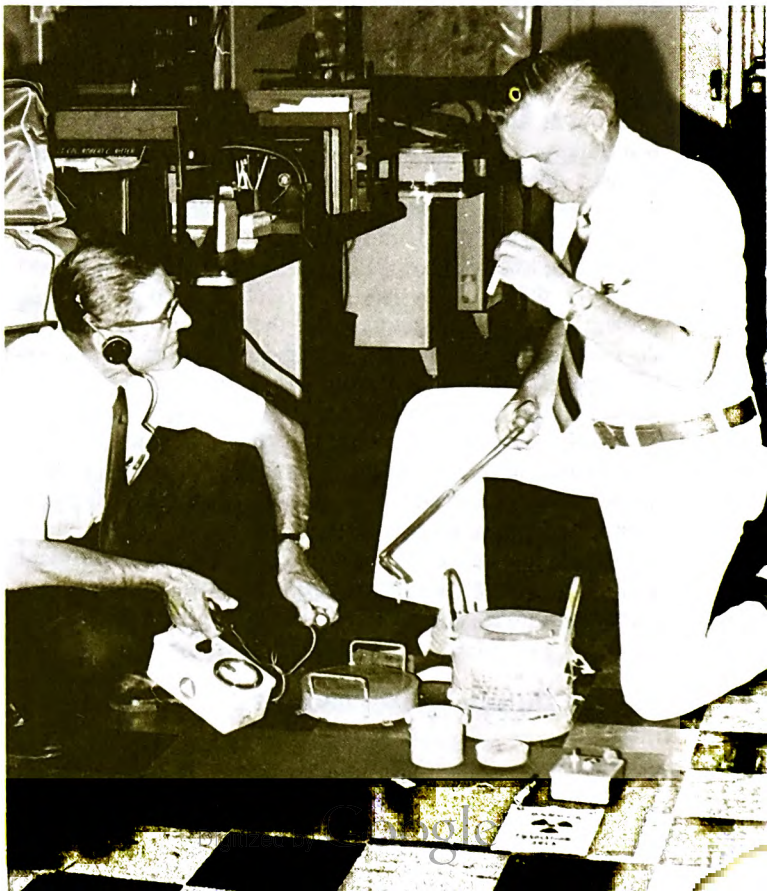
Recently, due to lack of knowledge, a simulated "radiological incident" in our community was interpreted by some as the real thing. The method of caring for the "victim" could have resulted in a serious tragedy for him had it been an actual accident. Proper communication was lacking, and the confusion was so widespread that it reached the U.S. Nuclear Regulatory Commission located at King of Prussia, Pennsylvania. The Commission's Senior Radiation Specialist, Robert McClintock, offered to come to Morris County and give a talk on "The Potential for Highway Accidents Involving Radiological Pharmaceuticals and Other Radiological Material, and Methods of Handling Such Accidents."

Mr. McClintock and Dr. Charles Gallina, a Radiological Specialist from the Commission, made a convincing presentation which was followed by a lively discussion period. The audience consisted of every type of emergency service personnel from all over the country, including representative groups from three of Morris County's hospitals.

A fear of the unknown is one of man's greatest enemies, and the characteristics of nuclear radiation are unknown and, therefore, feared by many people. To help eliminate this fear, members of the emergency services teams in 5 of our 39 municipalities have taken a 6-hour course to become familiar with radioactivity's benefits, dangers, how to detect radiation, and how to handle a radiological accident. This was a modified, approved course presented by an instructor team from the Morris County Civil Defense and Disaster Control organization. In the past 6 months, 192 emergency services personnel have become qualified in radiation detection and monitoring. Radioactivity is no longer an unknown to these people, so a radiation casualty will now be treated by them without fear or ignorance.

With our highways, airways, and railroads carrying an increasing percentage of radioactive cargoes every day, we have to learn to live with the radiological age. Nuclear reactors now supply one percent of the power in the United States. Due to present and future requirements for electricity, nuclear reactors could represent 30 percent of our Nation's power source within a decade. We should be ready for it.

RADIOLOGICAL MONITORING INSTRUCTORS John Morgan, left, and Robert C. Ritter of the Morris County, New Jersey Civil Defense and Disaster Control staff.



Reservist in a

By COLONEL HERBERT W. McMILLIN

What would you do if you were a colonel in the Air Force Reserve without a "slot," living in a community that is predominantly a "Navy town," and wondering where you could find a Reserve assignment? I was in this position in 1971 when I began to hear of Mobilization Designee positions in the Civil Defense program.

At first I thought that it was a bit ridiculous. I couldn't see where civil defense could use a high rating like a full colonel. But since I had nothing to lose, I stopped by to see the Jacksonville Civil Defense Director, Bob Blodgett.

A Rewarding Assignment

Let me tell you that I couldn't have been more mistaken about the civil defense program and it's alliance with the Air Force. My Civil Defense MOBDES position has been one of the most rewarding assignments in my Reserve career, and I have held some mighty fine positions with the Air Force Logistics Command, the Military Airlift Command, and the Air War College. I think it's great that the Air Force has made these positions available to help the home-town civil defense directors, and at the same time to give Reservists a chance to use their skills in a meaningful program.

Do you know what makes the civil defense program a rewarding assignment to me? It's the fact that each month brings a new challenge. Plus the fact that I get to see each assignment through to it's conclusion. Working with the Jacksonville Civil Defense Director has been a very good experience because Bob Blodgett gives you the freedom to use your skills to the maximum. Bob likes to go over the project plan at the beginning, and then to turn you loose to do your thing. I keep him posted with frequent "how-goes-it" reports, and when I need his counsel, or help, he is always willing to do his part.

In civil defense, the mission is clear and it is an important one. We want to get the mission accomplished, with a near-zero level of expended funds, by applying copious quantities of that magic ingredient in civil defense—coordination and cooperation—to all levels of government and with many private companies. This has been the challenge, and it is of the first order of importance.

Job One: Organize Military Resources

One of my first assignments was given to me by Bob in some very general terms to the effect that there are a

Colonel McMillin is an Air Force Reservist assigned to the Jacksonville, Florida Civil Defense Office. A professional engineer, he serves as an administrative officer at the Naval Air Rework Facility in Jacksonville, a Navy depot for aircraft maintenance. He is a graduate of the Air War College.

good slot

number of major military establishments in the Jacksonville area (several Navy bases, the National Guard, the Coast Guard, and the Navy hospital), that each organization has a wide range of capabilities, and something should be done to bring these people together so that they could help each other in case of a whopping no-notice disaster that was bigger than any one of them. And while we are at it, let's try to tie in the City of Jacksonville emergency capability, and don't forget our three Beach communities located in the same county and the emergency capabilities they have.

At first Bob and I talked about what we could and could not do. Then he turned me loose to prepare a plan on how to pull all of these organizations together. I developed a plan for the Mayor of Jacksonville. Hans Tanzler, to sponsor an "advisory group to the Mayor" with the advisory group to include the senior military commanders (active duty and reserve) of the military organizations, the Corps of Engineers, the Coast Guard, the National Guard, and representatives from the Sheriff and Fire Departments, as well as the leaders of the Beach communities. The plan included how they might meet together to plan for how they would help each other and the community in an emergency.

The advisory group has held a number of meetings, and has developed a computerized list of equipment that could be ready very quickly. The group has conducted one test exercise of how each would react to a major marine fire and explosion, and is now getting ready to see how they would hang together during and after a major tornado. My part was to take care of those little coordinating details, such as getting a central meeting place, lining up the players, scheduling the meeting, publishing the agenda and the minutes, and keeping all the players informed. It all adds up to a high level of satisfaction for me when I realize that Jacksonville now has a group that it didn't have before I started, a group that is planning to help each other and to care for the citizens in the community when disaster strikes with no notice.

Helicopter Airlift Arranged

Another assignment was to arrange for the airlift of several surplus helicopters from the storage base at Davis-Monthan in Arizona to Jacksonville and Miami. Bob asked me to see what I could do to turn on the airlift, to let him know when it would be ready, and to find out what would be needed in the way of preparatory work. Since I had worked with the Military Airlift Command in a previous Reserve assignment, I contracted MAC to arrange for the flights. It took three flights to move the five helicopters from Arizona to Florida. The greatest moment of satisfaction for me came when I met the C-130 that brought the first two helos into the Navy base in Jacksonville. It was a real pleasure to watch the Reserve crews unload the helos onto trailers to go to the city helicopter compound. This project has provided the City of Jacksonville with four helicopters to improve it's civil defense capability. Bob and I were both pleased with the project, and it was done in a very short time period, without any guidelines, and without a single delaying incident.

A final example will show the diversity of assignments. Bob and I had discussed the need to improve the after-hours security at City Hall and at the Court House. I developed a spectrum of proposals, ranging from the use of additional security guards to an access-control system that is monitored by a small computer and TV video displays at all entrances. I expect that one of the proposals will be adopted in next year's budget review.

When I tell my friends of the type of assignments that I get, they usually ask if civil defense is a 48-paid-drill program. Always they are amazed to find that the program is a "points only" proposition as far as the drill periods are concerned. I usually hasten to point out that I do get paid for the 12-day active-duty periods, and for any schools that I attend. And speaking of schools, civil defense has sent me to two courses at a fine school: the Defense Civil Preparedness Agency Staff College at Battle Creek, Michigan.

One Drawback: No Star Rank

I would want to mention one of the drawbacks in the Civil Defense MOBDES program. In my case, I've completed the Air War College and, as all colonels are, I am interested in getting selected for a slot for brigadier general. As far as I can determine there are no brigadier general slots in the civil defense program and I think that's a shame. Maybe in the future, DCPA will establish one or more positions at the brigadier general level, and thus further utilize the Reserve skills all the way to the top levels of DCPA.

To sum it up, based on my personal experience I would not hesitate to recommend to any Reservist an assignment in civil defense. It's an opportunity to use your skills in a meaningful experience. ■

Tagging the Injured

By JACK H. DUNCAN / Deputy Director / Unified Office of Emergency Services / San Diego County / California

It began in Chula Vista, down near the Mexican border. In the hills of that city, overlooking sparkling San Diego Bay, lies beautiful Southwestern College, one of California's community colleges.

A twin-engine plane "crashed" onto the campus, "striking" a large group of students enroute to the parking lot. It was, luckily, only an exercise, coordinated by the Unified San Diego County Office of Emergency Services (OES), because 50 "victims" were scattered over the lush park-like grounds.

A multi-jurisdictional response followed. Assisting with mutual aid for Chula Vista were the fire and police departments from Imperial Beach and National City plus Lower Sweetwater, Bonita-Sunnyside, and Montgomery Fire Protection Districts. As ambulances from four private companies and the fire departments converged on the scene, the first emergency response units to arrive began to triage.

"Triage" is one of those exotic words used by medical professionals. It translates as "medical sorting of the injured for priority of treatment." A triage team moves through a large number of victims, literally playing God–that is, making spot decisions on who gets what priority for transportation to a hospital emergency room, for stabilization at the scene, for treatment at the scene, or even for being too far gone to help.

Problem: A Special Tag Needed

The exercise scenario had six hospitals participating with victims actually being processed through their emergency rooms. A later critique of the exercise pointed up the need for some sort of triage tag to be applied at the scene–a uniform method for the entire region. The hospitals already used a uniform tag, but one suitable for the field was required.

What followed was months of indecision by the many organizations and jurisdictions involved in exactly what was needed. The hospital tag was far too fragile and complicated for field use. Other designs were unacceptable for various reasons, too, many because of unusual disaster conditions–rain, darkness, gloved hands, etc., were too difficult to handle.

Finally, the Unified San Diego County Office of Emergency Services took the initiative and designed a set of four tags: first priority treatment labeled "IMMEDIATE," second priority labeled "DELAY," and the last priority, "MINIMUM." The fourth tag was to be "11-44," the local code for deceased. The tag designs were submitted to the El Cajon and Santee Fire Departments for comments, and then to the San Diego County Emergency Medical Care Committee. Approval by these organizations put the matter back in the lap of OES.

Down to the Nitty Gritty

After a long session with a printer, colors, exact size, and weight of paper were decided on. "Immediate" became a light red, "delay" was yellow, "minimum" was green, and "11-44" was white, all with black printing. Size was chosen to obtain the maximum number of tags from one run through the press without waste.

The point for affixing was decided by the OES with approval by Emergency Medical Care as the left wrist in all possible cases–otherwise the most obvious place commensurate with the injruies.

The method for attaching was left to the OES to research. After experimenting with plastic cable ties (too expensive), string (too hard to tie in the dark), wire (too much danger of cutting skin), a paper-covered wire called Twist 'N' Tye was chosen. They were purchased from Grant Laboratories, 6020 Adeline St., Oakland, California for $2.48 a thousand.

Only one addition could have been made. If the 1/4-inch hole at the top of the tag could have been reinforced, it would have been sturdier. Cost, however, made that prohibitive. The cost factor was ever-constant because the tags were unbudgeted and 37,500 had to be printed to be distributed in the 4,200-square-mile county. With a population of 1 1/2-million, 13 separate incorporated cities, and 37 fire departments, the supply of tags had to far exceed the usual estimates of injuries during a catastrophic incident.

All 24 hospitals, 92 ambulances, and the many rescue units in San Diego County are now making use of the special triage tags–and it all started with a preparedness exercise in Chula Vista. ■

TAGGED "IMMEDIATE"–Mr. Duncan demonstrates one of the special triage tags on Bonnie Dudley, a student worker. Mr. Duncan is on the right.

San Diego County Photo

FAST, ACCURATE EMERGENCY INFORMATION

GREENWOOD COUNTY Civil Defense Director Donald K. Skidmore places a call over his county's hotline system, the Fire Alarm Automatic Conference System, by which he can collect 20 local government and law enforcement officials with one call. Greenwood Index-Journal Photo.

RADIO STATION ANNOUNCER CLARK MUNGO of WEAB in Greer, South Carolina, says the Greenville County Metropolitan Emergency Telephone System (METS) hotline helps him get the word to the public during severe weather watches, and cuts down on all those telephone calls from weather-wary listeners. Photo by Frankie Stephenson.

By HOWARD H. LINDSAY
South Carolina Disaster Preparedness Agency

In an emergency, one of the most critical needs is the ability to transmit to key response officials notification that a threat exists, or disaster has occurred, and then to maintain reliable communications with these officials for coordination of their activities.

Civil preparedness personnel in at least two South Carolina counties believe they have taken a giant step in meeting these needs with the installation recently of two multi-station hotline telephone systems, different in name and method of operation, but identical in purpose.

In both Greenville and Greenwood counties, which installed hotline systems late last year, the objective is to provide a means of simultaneously communicating vital disaster information to key emergency personnel to expedite and coordinate response and minimize delay and duplication of effort.

Tornadoes Prompt Better Systems

Both counties are populous textile centers in South Carolina and both have been a favorite "playground," in recent years, of tornadoes. Consequently, increased emphasis on bolstering civil preparedness capabilities has held a high priority among both residents and governments of both counties.

Greenville, largest in population of South Carolina counties (260,000 people) and with the State's third largest city (61,436 people) as its county seat, installed its hotline system in November. Known as the Metropolitan Emergency Telephone System (METS), it is a copy of a telephone network pioneered by the City of Denver, and believed to be the second of its kind in the Nation, according to Greenville County Civil Defense Director Marion M. McGrady.

The system connects 27 key agencies in the county, including civil defense, city and county police, the highway patrol, fire departments, school district headquarters, Greenville General Hospital, Red Cross, Duke Power Company, and the news media offices.

Of these, 12 can initiate as well as receive calls, while 15 can receive only, including the news media offices. The latter can monitor any call once initiated, and comment on the line once it is opened.

Weekly Tests Conducted

This system consists of a red telephone at each station which is activated by the press of a button. When the system is activated, a signal sounds in each station until a monitor answers. The originating party delays giving his message to permit monitors at all receiving stations time to reach the phone, then calls the roll of stations. Any stations failing to receive all or part of the message will be called by conventional telephone for a repeat.

The system is tested with a roll call of stations each Tuesday and no serious outages have occurred to date.

The Greenwood system is similar in many ways to the METS but is known as the Fire Alarm Automatic Conference System (FAACS). It consists of a primary circuit connecting 10 phones and a secondary circuit with 10 other phones. The system can be expanded to as many as 50 lines.

Like the Greenville system, the receiving stations include civil defense, law enforcement, fire departments, the school district office, local hospital, power company, and in addition, the rescue squad, the executive assistant to the county council, and the assistant city manager of the City of Greenwood.

Unlike Greenville's system, it can be activated from only two points – the office of the Greenwood County Civil Preparedness Agency and the Greenwood City Police Department.

Similarities and Differences

Another difference is in the method of activation. In Greenwood, the dispatcher flips a toggle switch at the base of the hotline to initiate a call over the 10-phone primary circuit. If he wishes also to include the secondary receivers, he dials "0." The latter procedure would be standard except in possible large-scale emergencies in which a delay of minutes could be catastrophic. In such cases, the civil preparedness coordinator would request the city police to dial "0" and activate the secondary alerting list.

Included on the secondary alerting list are the telephone system, commissioner of public works, civil preparedness communications officer, the National Guard, area radio stations, and the local newspaper.

Similarities with the Greenville system include a conventional telephone backup. According to Donald K. Skidmore, Greenwood civil preparedness coordinator: "Once the system is activated, we have a roll call. Then we deliver the message. If some telephones are not answered, there are standby personnel who can be contacted by standard telephone."

Also similar to the Greenville system is the option for open-line (party line) communication. Once the line is open, anyone can communicate with anyone else on the line.

Financial Arrangements Vary

A variation in the two systems is the manner in which they are paid for. In Greenwood, the county paid the entire costs for installation and also pays 50 per cent of the maintenance costs, while the other half is financed through a project application with the Federal Government.

In Greenville, on the other hand, some departments in the system pay their own way. This includes the municipal police and fire departments, one of the hospitals, and the school district. The county, meanwhile, through its civil defense office budget, pays costs for lines into the county hospital, State Highway Patrol, Weather Service, Red Cross, and the civil defense office.

The Greer office of the National Weather Service is located only 13 miles from the City of Greenville, and thus can be included in the Greenville METS system. The nearest weather station to Greenwood, on the other hand, is some 60 miles away in Augusta, and is therefore not on the hotline system, but contact between the two offices is maintained via a direct-line telephone.

Greenwood also has backup sources of weather information. In addition to the National Warning Service line in its Emergency Operations Center, Director Skidmore can obtain up-to-the-minute advisories at any time from Duke Power Company which maintains a computer warning system based on weather reports from localities scattered over a broad area.

One definite concern to civil defense officials in both counties is the mounting costs of telephone services. In Greenville, for example, Director McGrady has found that installation costs per telephone on the system have more than doubled since the system was inaugurated.

Local Emergencies Demonstrate Value

Systems in both Greenwood and Greenville were operationally tested for the first time in January when a severe storm front moved across the State producing tornado watches lasting for several hours. Both have been activated for threatening weather since, but as of late April, no disasters had occurred in either county to provide an all-out test. Civil defense directors in both localities would be happy if no such occasion arises. As Greenville Director McGrady comments: "It's there if we never have to use it."

Although emergencies for which use of the systems had been anticipated have been slow in surfacing, the system has demonstrated its value in a couple of situations which were unforeseen in the original planning. Within only a few weeks after installation of the Greenville system, an altercation erupted in the emergency room of Greenville General Hospital, during which a recalcitrant guest fired off a pistol, wounding another visitor. Immediately after hearing the shot, the nurse on duty in the office reached for the red telephone, activated the METS, and within a matter of minutes law enforcement officers from both city and county were at the scene and succeeded in subduing the aggressor, preventing further injury to other occupants.

In another instance, when a sheriff's deputy had been fatally wounded in attempting to arrest a narcotics peddler, an all-points bulletin was issued to city and State police.

Don Gase, communications supervisor for the Sheriff's Department, recalled: "Our switchboard got jammed up with calls and we pulled the second shift in early to help handle them. Then I went on the METS line with information for the news media ... just the facts they wanted. The phone calls slackened noticeably almost right away."

Positive Reactions to the System

So the system has demonstrated its worth in special instances. What about viewpoints of officials in member agencies which have not as yet seen it put to a real test?

Those spotchecked in Greenville are all for it. The dispatcher for the Greenville Fire Department, Pierce Pollard, for example, commented: "It's definitely an improvement. Previously, we would have to call each one of the departments individually. And if you dialed a number and got no response, you'd have to call back, so it might take as much as 30 minutes. Now, all we do is pick up this phone, mash the button, and we get every one of them at one time. As a rule there's someone standing by these METS phones at all times...."

James R. Spillers, meteorologist-in-charge at the National Weather Service's Forecast Office near Greer, concurs: "I think the METS telephone system for the Greater Greenville area certainly is one of the worthwhile projects undertaken by civil defense. We think it will be a great asset to us in getting out warning to key people for fan-outs to the general public ... the news media stations, the public offices downtown. We think it's a great idea and we're delighted Greenville County has gone into this.... It probably cuts 5 or 10 minutes off getting to the essential people, and 5 minutes in a severe storm warning or a tornado warning means a great deal of time for people to prepare."

And Clark Mungo, announcer for Radio Station WEAB in Greer, adds: "We get the message straight from the weather bureau (over the METS). And a lot of times when there's a tornado or something, a lot of people get scared, they're calling in, and tying up the lines. So with METS, I think it will be a lot better."■

From the Press

Here's a digest of news items on civil preparedness topics:

NUCLEAR STRATEGY—On June 15, *Parade* magazine (with an estimated 19 million readers) published an article on mines as shelters. It was based on an article in the May/June issue of *FORESIGHT*. The *Parade* article drew widespread media attention to national civil defense policies and programs, linking them with the concept of flexible response as a nuclear defense strategy. The *Parade* article noted: "'Our estimates now,' says a researcher for DCPA, 'are that under Crisis Relocation Planning criteria, there is a potential for sheltering 50 million people in level, dry and readily accessible mines.'" The article went on to point out that DCPA has found space for 6 million people in some 2,000 mines around the country and that Montana, Utah, and Missouri are States with "lots of usable mine shafts."

"Crisis relocation is part of a new strategic policy called flexible response," reporter Phil Stanford wrote. "The key word in Flexible Response is Options. According to (Secretary of Defense) Schlesinger, being able to move people out of cities—and thereby remove them as possible targets for enemy missiles—is an important strategic option.

"If the Russians are able to evacuate their cities in time of crisis, the United States, he says, must be able to do the same. This year, in his annual message to Congress, Schlesinger said that the Russians have already developed extensive plans for evacuating their cities." . . . The *St. Louis Post Dispatch* noted that Secretary Schlesinger's strategy of flexible response calls for "a great deal more in the way of fallout shelters and training than has so far been undertaken." . . . An article in the Chicago *Sun-Times* pointed out that "The DCPA's research on civilian evacuation and shelters is a logical extension of Schlesinger's belief that civilian casualties can be contained in a limited nuclear war. The belief behind DCPA planning is that evacuations can be effected during the 'tension period' before a war, perhaps lasting weeks."

PEOPLE, PLACES, EVENTS IN CP—From an editorial in the Houston *Chronicle*: "In the category of Nice Things to Know was the news the other day that the Houston Civil Defense Department will very soon be staffed 24 hours a day, seven days a week, instead of the present schedule of weekdays only. The enlarged and expanded service will be without extra cost to the city because 64 military personnel will be used to augment the present protection and their duty with the city will be in lieu of their regular reserve duties, for which they will be paid by the federal government. It appears an excellent arrangement for the community." City Civil Defense Director Fred Cox points out how reservists' varied skills are valuable for emergency operations. . . . "A team of nearly 20 state and Federal Civil Defense officials Tuesday began helping Knoxville and Knox County become better prepared for a disaster," reported the *News Sentinel*. Lacy Suiter, operations and training officer for the State CD office, told local government and community leaders that "Tennessee has had more natural disasters since 1969 than any other state. He said Memphis is 'the center of the tornado world' and the area between Cookeville and Crossville one of the worst in the nation for flood disasters." . . . "Equipment to better prepare Rapid City (South Dakota) and Pennington County in case of a disaster will be displayed Saturday, according to Mayor Art LaCroix, who proclaimed the day Civil Defense Day. The equipment was obtained with federal assistance obtained through the Civil Defense." (*Rapid City Journal*).

SOUNDING THE WARNING—"The small death toll in the tornadoes in Mississippi this year is proof you can do something to protect yourself and others. A survey team of Region 3 Civil Defense (personnel) has learned that the low loss of life and injury toll is due to excellent advance warning systems and the fact that children herded to the 'safest' part of a school building. The CD has learned a secret—outside walls may blow down and windows shatter, but inside halls remain intact, protecting the children." (Jimmie Bell, "Everybody's Business" columne, *Sun Herald*, Biloxi-Gulfport) . . . An editorial in the Omaha *World Herald* notes "death was not commensurate with destruction" in the May tornado disaster. That it was not "is attributable in large measure to the efficient working of the warning system." The *World Herald* also reports that "Mayor Zorinsky ordered Friday that civil defense sirens be sounded whenever there is an official tornado warning. The policy has been that sirens are activated only when a tornado touches the ground." The Mayor told the *World Herald*, "If a tornado came down and hit a school, I'd hate to try to justify to the parents of those students why the sirens weren't blowing." . . . The Davenport *Times Democrat* quotes Wayne Walters, Johnson Country Civil Defense Director: "Iowa City stands naked in the path of a tornado," because the city has no way to warn most of its residents. The city uses a power plant steam whistle to warn some of the city's residents. Concerned citizens have offered suggestions about warning devices to Mayor Edgar Czarnecki. One idea—the installation of "cherry bomb" firecrackers in strategic locations that would be set off to deliver tornado warnings. **Joseph V. Quinn.**

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Part I

Nuclear War: A Soviet Option

Reports from Europe

Swedish Shelter Symposium

Diplomatic Conference in Geneva

Crisis Scenario

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

NASA photo

PART ONE

NUCLEAR WAR: A SOVIET OPTION

This article is the first part of a presentation made by O. C. Boileau, President of the Boeing Aerospace Company, at a Seminar on Technology and International Security, sponsored by Harvard University and the Massachusetts Institute of Technology. Because of the length of Mr. Boileau's presentation, it is being published in two parts by FORESIGHT.

By O. C. BOILEAU
President
Boeing Aerospace Company
Seattle, Washington

When Kosta Tsipsis invited me to participate in your seminar, he touched off some rigorous soul-searching in my corner of the Boeing campus in Seattle. I asked my public relations guy what he thought about me taking on this assignment, and he reacted with predictable alarm. "I can see it now, in Jack Anderson's column," he said. " 'Boeing bigwig launches fright campaign to sell more missiles.' "

Well, I guess I will have to take that chance. I think the subject matter being explored this afternoon is important enough to override both public relations considerations and my own personal trepidation.

In any event, I'm coming to you with questions–not with answers. I don't pretend to know the solutions to the concerns I want to talk about, and certainly I don't profess that they call for bigger and better missiles. At any rate, I assure you I left my salesman's satchel at home.

I don't mean that I am going to *avoid* the subject of missiles, for they and bombers are at the heart of any discussion of international security. So I will talk a bit about strategic weapons and similar unpleasantries with which we in the defense business have had to become acquainted. This is essential to any examination of the strategic balance between the U.S. and the Soviet, and of the changes which appear to be taking place in this balance. I am going to ask you to consider the question of whether America's long-term policy of strategic deterrence can remain valid indefinately–both in the light of these changes and of what appear to be Soviet objectives.

Lessons From History

I want to start by going back a ways in history. I recognize that here I am venturing onto ice which is a bit thin for a guy who is an engineer by trade. My rather limited exposure to history has left me with one overall impression: That our world is one in which nations rise and almost inevitably fall. Often the causes of a fall are complex, but usually they include the fact that some other power comes along with superior military capability and provides a push. In 2000 B.C., the Egyptians and the Aegeans dominated the known world. Both empires collapsed following military disasters. The Persians reached their peak about 500 B.C., after which they, too, suffered a series of military defeats. The Romans held more power and influence, relative to their world, than any other nation in history. The road to their collapse was built upon a number of things, most of which I'm sure you know better than I, but in the end it was military defeat at the hands of the barbarians which administered the coup de grace.

The United States is a relative newcomer on the world scene, yet its power and influence have been the dominant factor on the international front for three decades now. But history, like everything else, seems to move faster these days; there are historians who say we already have passed the peak of our power and are on the downhill side of the curve. I am not prepared to argue this view pro or con. But if it is true, it is composed of many things ranging from the League of Nations to Watergate to the conflict between Congress and Administration over control of foreign policy.

In the case of the Aegeans and the Egyptians, the Persians and the Romans, collapse was preceded by degeneration, stagnation, lack of leadership. (They never got a chance to write history books.) But the final shove that sent them over the brink was *military*. In today's world the only power which conceivably may become able to apply that kind of push to the United States is, of course, the Soviet Union.

The Soviet View

The Soviet's leaders, beginning with Lenin, have made no secret of their own view of history. They foresee the collapse of the West and the eventual triumph of communism. In this sense, they are not speaking merely as leaders of a powerful nation, but as men charged with the duty of carrying out the revolutionary mission of communism. The proclaimed objective of this doctrine, as you know, is a universal communist society. To them, this is the preordained outcome of the historical process. Any means they choose to employ in hastening this process, then, must be moral–because the ultimate objective is moral.

I think we ought to paste this point in our hats, and take it out and look at it when we think about the Middle East, or detente, or SALT agreements.

And if we think these communist leaders are poor prophets, maybe we should recall some of their early writings. A communist document called the "supplementary theses" said this:

> "The breaking up of the colonial empire, together with the proletarian revolution in the home country, will overthrow the capitalist system in Europe. Consequently, the Communist International must widen the scope of its activities. It . . . must assume the task of combining the revolutionary forces of all the countries of the world."

Well, the colonial empires have been broken up, and capitalism in Europe is in disarray. And the revolutionary forces are on the march in many places, from Italy and Portugal to Angola – with Soviet assistance, military and otherwise.

In 1920 Lenin wrote this:

> ". . . The so-called cultured states of Western Europe and America are incapable of understanding either the present position of things or the real state of relative power . . . The capitalists of this whole world and their governments will shut their eyes to the kind of activities on our side . . . and will in this manner become not only deaf mutes but blind as well. They will open up credits for us, which will serve us for the purpose of supporting communist parties in their countries. They will supply us with the materials and technology which we need for our future victorious attacks upon our suppliers. In other words, they will work hard in order to prepare their own suicide."

Warning From Solzhenitsyn

In a recent interview, Alexander Solzhenitsyn seemed to agree. He said, "The West is on the verge of a collapse created by its own hands." He said he has noted a decline in both the strength and resolution of the West during the two years he's been out of Russia. And he warned that the Soviet "economy is on such a war footing that, even if it were the unanimous opinion of all the members of the Politburo not to start a war, this would no longer be in their power." What Solzhenitsyn seems to be saying is that the degeneration is under way and that, off there in the wings, the military power is being prepared to apply the final push.

Now I don't know that Solzhenitsyn is any better a prophet than the guys who said Ohio State was going to win the last Rose Bowl game. Nor am I saying the Free World is in the same shape the Romans were in just before the Visigoths romped into their end zone. I've simply been trying to lay out some perspective which I think deserves as much attention as weaponry when we get to talking about long-range international security–or insecurity, if you wish.

As a matter of fact, the question of the balance of strategic power today is more confusing than the pre-primary information was in Massachusetts a few weeks ago. You can draw almost any conclusion from the deployed numbers of missile launchers, warheads and bombers, and the various estimates of deployed throw weight, equivalent megatonnage, and missile accuracy. Depending on which expert you believe, you can decide that the present U.S. advantage in missile accuracy and number of warheads either offsets, or does *not* offset, the Soviet advantage in throw weight and number of launchers.

What Do They Believe?

It seems to me that this argument over numbers, advantages and disadvantages, obscures the real issue of ultimate concern: Can the Soviet's strategic forces defeat those of the United States, either now or in the future? Or–and this is perhaps equally important–might Soviet leaders *conceive* them to be capable of defeating the strategic forces of the United States?

Now, when I raise the specter of the strategic forces of the Soviet attempting to defeat those of the United States, I am not speaking of the ultimate holocaust most of us see in our nightmares. I am not talking about the wholesale devastation of cities and populations. I am referring to a nuclear exchange in which each side attempts to knock out the other's strategic forces. This is terrifying enough, bloody enough, but it is not necessarily unthinkable. As a matter of fact, it is the kind of engagement military men think about when they worry about the possibility of nuclear war.

In assessing the relative strength of the two powers, the answer cannot necessarily be ascertained by comparing what each side has: the warheads in silos, the submarines and the bombers. What is most important is what each side can *do* with what it has. The true relative strength can be determined by postulating the situation likely to prevail at the end of a strategic counterforce exchange. The throw weight surviving after such an exchange is an appropriate total measure of the residual capability on both sides. What does each side have left with which to dominate the situation after the exchange? Remember, too, that most of the targets remaining after a counterforce exchange

NUCLEAR WAR: A Soviet Option

would be soft targets—sitting ducks. Hence missile accuracy and other refinements in the original postures would no longer be of much significance.

I am going to ask you to suspend judgment, for the moment, on the *likelihood* of any strategic attack by the Soviet. I don't want us considering its rationality at this point. I want us simply to examine *capability*, based on the best estimates available to the United States at this time.

Nuclear Catch-Up

If the Soviet had attacked U.S. strategic forces at any time during the 1960s, and the United States had responded, the United States would have emerged from such an exchange with clear superiority. In other words, our remaining strategic forces would have been stronger than those which remained in the Soviet Union.

In 1964, however, the Soviets began playing catch-up. They began to close the gap. And by 1973, America's position of superior post-exchange strength had disappeared. At that point, the Soviets had acquired sufficient capability to attack U.S. strategic forces with the expectation that, even if the U.S. fired back, the exchange would end with the Soviets retaining the greater strength.

Since 1973, the Soviets have increased their margin of post-exchange superiority. In the years ahead, this edge will continue to expand. By the mid-1980s, the Soviets will have acquired a large margin of absolute superiority over the United States.

The data on which these cold-blooded estimates are based are calculated on total throw weight. But they employ throw weight as a *dynamic* index of capability. The "after" or post-exchange balance considers the number, size, and accuracy of each side's remaining warheads, as well as the prospective survivability of those forces which would be left. It takes into account U.S. advantages, as well as those of the Soviets. What we have here, in short, is a perspective quite different from the one usually presented, which is a straight comparison of static throw weight.

There are those who argue that total force throw weight, even after a counterforce exchange, is not a valid index of capability. We have looked at *every* reasonable index—at equivalent warheads, number of warheads, counter military potential, equivalent megatonnage, and total numbers of bombers and missiles. By every one of these, the Soviet will hold strategic superiority after a counterforce exchange.

What About SALT Agreements?

Now if you're still with me at this point, I'm sure you're asking: What about the SALT agreements? Aren't they supposed to preserve the strategic balance—the balance of terror? Well, these projections of a continuing rise in Soviet superiority are based on a representative estimate of both U.S. and Soviet forces under the current Five Year Development Plan. They take into account the restraints placed on both sides by a SALT agreement which would impose the limits outlined at Vladivostok in November, 1974. Neither this proposed agreement nor its predecessor, the SALT agreement of 1972, will affect this trend. They merely constrain certain static indices of capability.

Remember that the Vladivostok accord would permit the Soviet to retain 300 larger silos—for the so-called "heavy" missiles. The U.S. would not be permitted to build any of these. We simply obtained a freeze on the present numbers of both heavy and light missile silos—and our number of heavies is zero. But we agreed to let the Russians catch up with us in the category in which we do presently hold a lead. This is the arming of missiles with multiple warheads, the MIRVs.

In a recent interview with *The National Observer*, Fred Ikle shed some light on what went on at Vladivostok. Ikle is director of the U.S. Arms Control and Disarmament Agency. He said: "Negotiating with the Russians is tough. They tend to press for higher numbers. We had to settle for what we could get at Vladivostok." And we used to call ourselves Yankee traders!

The last sentence is *my* comment, not Ikle's. But for those of you who share the standard suspicions of the Pentagon, it might be interesting to point out another comment made by Ikle. He noted that both the Pentagon and the Joint Chiefs of Staff favored lower levels of missiles than were finally approved at Vladivostok. My company builds missiles, but I'm with the Joint Chiefs. I'd gladly trade our Minuteman profit for a world in which neither we nor the Russians had any missiles at all.

To come back to those estimates I've been throwing at you—I recognize there's a temptation to say they're all hyperbole. Or they're based on nothing more substantial than the kind of factors you use when you're deciding which horse to bet.

Well, I know the type of men who make these calculations; I respect both their ability and their objectivity. And that's why I don't always sleep well at night. But there's some therapeutic value in giving a talk like this one. Now when I lie awake worrying, there may be some comfort in knowing that maybe one or two of you are lying awake too. If we can get enough smart people worrying about it, maybe someone will come up with a solution.

Now that I've tried to convince you that we are going to be faced with Soviet nuclear superiority as far as the eye can see, it's time to ask whether such superiority is really usable.

'Mathematical Fiddle-Faddle'

Ever since the Soviet Union got its first nuclear weapon, the American policy has been to deter nuclear conflict rather than to attempt to win it. I'm sure most Americans believe that if the Soviet Union were insane enough to attack us, it would be annihilated by the U.S. retaliation.

"Overkill" has become a buzz word. We're told that the U.S. has the capability to kill every man, woman, and child in the Soviet many times over.

Actually, the U.S. has never had this kind of capability. We *do* have more than enough capability to kill the people in Russia's cities, provided they don't leave town. But the term "overkill" is nothing but mathematical fiddle-faddle; it has nothing to do with reality. After all, you could put the world's entire population in one piece of territory 19 miles in diameter, and kill them all with half-a-dozen bombs.

Whatever lethal capability the U.S. has, Russia has the same capability—with respect to you and me and rest of us Americans. The result is what has come to be known, in heart-warming terms, as the doctrine of assured mutual destruction.

We are further comforted by the ABM Treaty, under which both sides have agreed to forego the development of anti-ballistic missiles. This, we are told, has virtually guaranteed the permanent effectiveness of the assured mutual destruction doctrine. Through this treaty, it was said, both great powers have recognized, and in effect agreed to maintain, mutual deterrence.

Against this background, a while back Secretary of State Kissinger raised this rhetorical question: "What in the name of God is superiority? What could the Soviet Union do with it?" The Secretary went on to say that nuclear superiority is devoid of any operational meaning. If he is right, the estimates I was giving you a few minutes ago are meaningless. For assured destruction has rendered superiority useless.

But if this is so, why then is the Soviet investing so heavily not only in achieving nuclear superiority, but in *increasing* it?

What Is the Reason?

I guess this is the question that worries me more than anything else. I keep looking for a logical answer, a *reason* behind Russia's all-out drive for superiority. It may be something as simple as over-reaction to their feeling of insecurity. I hope that's all it is, but I'd like you to bear with me while I explore a little further. A little bit ago, I asked you to suspend judgment on the likelihood of a Soviet nuclear attack on our strategic forces. Feel free to consider it now. This is where I ask you to think about the unthinkable.

But first, I have a request. Please remember that what is unthinkable to you and me may not necessarily appear that way to someone whose head is screwed on differently. In early 1945, when our GIs were pushing toward Germany, it surely must have been unthinkable to us that anyone would send millions of men, women, and children into gas chambers. But, as it turned out, it wasn't unthinkable to Hitler.

Sure, I believe the Soviet leaders are a lot more rational than Hitler. Still when we consider the prospect of nuclear war, I think we need to ask ourselves: How does it look when viewed through our adversary's eyes? When contemplated in terms of his philosophy, and his definition of morality?

We have a pretty good idea of what to expect, should deterrence fail. Last year Dr. Schlesinger, then Secretary of Defense, presented some data on this to the Senate Foreign Relations Committee. He said that a Soviet attack limited to U.S. strategic forces would produce fatalities on the order of five or six million. If the Soviet followed this with an attack on U.S. cities, a total of 96 million Americans would die. There was some controversy over his first figure, with some people contending that an attack on U.S. strategic forces would kill as many as 20 million.

Is It Unthinkable—to Them?

Whatever the figure, it's unthinkable. *To us.*

It's conceivable, however, that the Soviet leaders might be able to accept a few million *American* casualties philosophically. But how many *Russian* casualties would they be willing to accept?

The answer to this may be important. It could, one day, determine whether the Soviets decide to apply their superiority. It could determine the manner in which they decide to apply it. Basically, there are three ways in which they could apply it, and I believe you know them as well as I. The least likely, I think, is that they would simply push all the buttons, not only going for our strategic-force jugular but wasting our cities at the same time. More likely is the possibility that they might try to take out most of our strategic forces, hoping that we would not retaliate in the face of overwhelming power, but being willing to accept it if we did. They might even feel fairly confident that we wouldn't retaliate because they would, in effect, be holding our urban population as hostage.

The most plausible of the three applications, it seems to me, is the scenario which goes like this: Ivan picks up his end of the hot line and calls the President of the United States. He says: "Mr. President, at 5 a.m. tomorrow, the troops of the Soviet Union are going to move into West Germany. Since we have a strategic position superior to that of the United States, we will expect you to be most *reasonable* and not respond."

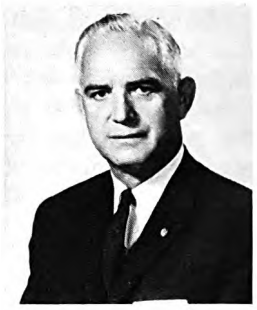
Now I'm not predicting that any of these three things is going to happen. But I believe they warrant consideration, not merely by our defense chiefs and the leaders of our government—who most assuredly *do* consider them—but by the public. By *us.* And as I said a moment ago, I think the Soviet's willingness to pursue any one of these courses is going to be governed in considerable part by its estimate of the price it might have to pay.

The Question of Values

It seems to me there are two factors to consider here. One is the difference in the values placed on human life

(concluded on page 7)

viewpoint



By JOHN E. DAVIS / Director / Defense Civil Preparedness Agency

Since the last issue of FORESIGHT, the House and Senate approved and the President signed, two appropriations totalling $82.5 million for DCPA for Fiscal Year 1977. Of this total, $29.6 million was approved for matching funds for State and local civil defense personnel and administration (P&A) expenses.

Also approved were amendments to the Federal Civil Defense Act which would (1) make clear the intent of the Congress that civil defense systems may be used by State and local agencies in disasters other than those caused by enemy attack, and (2) require annual authorization of the civil defense budget by the Committees on Armed Services of the House and Senate.

Subsequently, Deputy Secretary of Defense William P. Clements, Jr., emphasized that DCPA "must continue to focus primary attention on preparing for an enemy attack upon the United States, under the authorities of the Federal Civil Defense Act of 1950."

The Secretary recognized, however, the intent of Congress "to provide assistance to State and local governments in emergency situations arising from natural disasters," and said that "such assistance may include preparedness-type activities when the facts demonstrate that such a mutual plan benefits both the Department, State, and local preparedness programs.

"This will allow," he continued, "the application of civil defense organizational personnel, facilities, and equipment to be applied to a common base of preparedness for both nuclear attack and peacetime disasters."

While the appropriations DCPA received for FY 1977 are larger than originally budgeted, they will be considerably lower in actual terms as compared with current appropriations – since we will have to pick up a $7 million funding requirement for emergency communications formerly assumed by the Army. Because of this, we must continually consider ways to make the most effective use of funds to meet national objectives in the coming fiscal year.

During the year, we will be giving priority attention to the following:

Nuclear Civil Protection planning – NCP – which includes provisions for both in-place protection (Community Shelter Planning) and relocation (Crisis Relocation Planning) will continue to be the priority program during the year. NCP will be accomplished through contracts with the States.

We'll be completing the prototype plans started some time ago; and subject to approval by States, we'll concentrate on development in each State of a preliminary allocation of risk-area population to host areas for all of what we call "conglomerates" which lie wholly or partially within each State.

We will also be working to improve systems for warning, direction and control, radiological defense, and the dissemination of emergency public information.

We'll be directing attention to maintaining and improving the nationwide attack warning capability. Regular broadcasting of the Decision Information Distribution System (DIDS) prototype was terminated May 28, 1976. The system has been mothballed in a maintenance condition which will permit the transmitter to be reactivated for operation upon 30 days notice. Maintenance of security, ground and facilities will be funded commensurate with safeguarding the Government's investment, to include regular reactivation for a 24-hour period every 60 days. The siren receivers will be left in place. All other receivers will be picked up and stored.

To strengthen direction and control capabilities, which include the EOC and associated communications with emergency operating services, matching funds will be used to extend Emergency Operating Center (EOC) coverage at the State and State-area level, and at local level, especially in areas of high-risk from direct weapon effects, and in nearby low-risk areas.

Also, DCPA will continue to provide technical advice and assistance to all jurisdictions on EOC construction and modification of existing structures to provide suitable protection for an EOC.

Radiological defense, which has long been one of the more important aspects of civil defense, will also receive priority attention.

Contracts with the State will provide for retrofit of the CDV-715 survey meters; and operational testing and necessary maintenance and calibration of radiological instruments.

Funds are available for training of RADEF officers and monitors, and for some instructor training. Assistance must be provided to localities for development and maintenance of systems essentially by the P&A-supported State staffs. Emphasis in FY 1977 will be placed on recruiting radiological defense officers and providing basic training.

In FY 1977, DCPA will emphasize further development of emergency public information dissemination systems and procedures for State and local use in major emergencies.

In our training and education effort, the main thrust will be to increase the decentralization of training through Federal funding of State civil defense seminars.

The seminars essentially will be limited to the following types of conferences and training: (1) Basic and Advanced CD Management Workshops, (2) Conference for Local Public Officials, (3) Plans and Operations Workshops, (4) Emergency Operations Simulations, (5) NCP Orientation Conferences for local Directors, and (6) Phase I and Phase II Career Development training.

The resident courses at the DCPA Staff College will be the Phase III and Phase IV Career Development training. Three Industry-Business Emergency Planning sessions will be held, with one each to be conducted on the East Coast, the West Coast, and at Staff College. The DCPA Home Study Courses will be continued, with the participation to be limited, however, except in special cases, to persons directly involved in civil defense work.

The objective of the DCPA training effort will be to increase the operational capability of States and localities, with emphasis being given to jurisdictions having deficiencies.

Some funds will be available during the fiscal year to mark public fallout shelters designated by local NCP plans as ready for use in a civil defense emergency.

The DCPA stockpile of Emergency Water Supply equipment, which has been highly useful in many peacetime disasters, has been transferred to the States on a long-term loan basis.

Even with the limited funds available for Fiscal Year 1977, we certainly should not lose ground from past accomplishments, and should in fact make definite progress.■

NUCLEAR WAR: A SOVIET OPTION *(continued from page 5)*

by them and by us. I remember that during World War II we used to send out destroyers and whole squadrons of planes to search for three guys bobbing somewhere in a life raft. And in Vietnam there were countless times when American teams went in, under heavy fire, to try to rescue a helicopter crew downed behind enemy lines.

The Russians have a history of working people to death in slave labor camps. In the great purge of the 1930s, they deliberately brought about the death of from 20 to 30 million of their own people in order to shore up Communist control of the nation. This was all done in a good cause, of course—a moral cause, from their point of view. That same basic cause exists today.

The second factor is more direct: What does the Soviet count as the cost of a nuclear exchange, in Russian lives lost and Russian property destroyed?

An official Soviet estimate declares that, even if U.S. missiles strike their cities, they can hold their casualties to from five to eight percent of their urban population. For Soviet demography, this works out to about ten million potential fatalities. That's only one-half to a third of the casualties the Russian leaders inflicted on their own people just to consolidate their internal political control. If you were a Communist leader, would *you* be willing to risk paying that price in exchange for a giant step on the road to a universal communist society?

Of course, this would still leave the question of the possible destruction of Soviet cities and Soviet industry. But the Russians have some estimates on this, too, and they differ dramatically from those of the U.S.

Behind these Russian calculations lies an intensive civil defense program.

(In the next edition of FORESIGHT, Mr. Boileau discusses the Soviet civil defense program, explores possible motives behind Soviet strategic defense actions—including the possibility that a food shortage could be a factor—and summarizes the key points of his presentation.)

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John E. Davis
Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

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Reservists in Preparedness Jobs

By MAJOR
CHARLES D. BODSON
United States
Air Force Reserve

The historic City of Alexandria lies directly across t Potomac River from Washington, D.C. Founded in 17 Alexandria was the home of the first President of t United States. More recently it was also the first jurisd tion within the Washington metropolitan area to particip in the Defense Civil Preparedness Mobilization Desig (MOBDES) program.

The MOBDES program, initiated in July 1972, comprised primarily of Army and Air Force Reservists w train and perform duty at local or State government offi of emergency preparedness or at regional offices of Defense Civil Preparedness Agency. Navy and Marine Co Reservists also participate in the program. The objective the MOBDES program is to strengthen, not direct, emergency capabilities of government – local, State, Federal – by augmenting their regular civil preparedn staffs with trained military reservists. In the event disaster, the reservists help the regular staff members c out their emergency duties; otherwise they aid the reg staff in preparedness planning and other activities.

The responsibility for Alexandria's emergency prepa ness capability comes under the General Services Dep ment, whose Director is Mr. Paul D. Schott. Through Schott's efforts, the MOBDES program received appr and was put into effect in April 1973. Day-to-day e gency preparedness activities are carried out by Col. Ja C. Coleman, Jr., who is the Alexandria Emergency Co nator for Emergency Preparedness.

Twelve Reservists on Duty

Twelve MOBDES reservists are currently assigned t City of Alexandria. They bring with them disaster prep ness capabilities as well as expertise in many other such as communications, engineering, accounting, trai and social services. Each MOBDES serves a tour of 2 w on active duty annually. This amounts to addit manpower of 24 man-weeks available to the Coordinat Emergency Preparedness for use in disaster prepared Active duty is scheduled to the extent possible such one MOBDES is on duty each month. All expenditure

training and active duty are paid for by the reservist's military service.

One of the major projects undertaken by Alexandria MOBDES reservists has been the revision of the city's basic Emergency Operations Plan and the development of annexes by each of the city departments to this plan. The revised plan has been submitted to the City Manager for approval. Upon approval, each of the city departments will be requested to prepare annexes which will reflect its responsibilities and operational procedures that will be followed in an emergency. It is envisioned that each department preparing an annex will be assisted by a MOBDES participant who will act as liaison between the department and the Alexandria Office of Emergency Preparedness.

The MOBDES have participated in other projects in support of the city's Emergency Preparedness posture. In 1974, a Shelter Analysis Survey and Inspection was performed. All public fallout shelters on record were inspected, supplies (including food, water, and medicine) were inventoried, and the prior list of shelter facilities was updated. This information was updated again in a March 1976 survey.

Hazard Analysis Carried Out

In addition, a Hazard Analysis was performed in early 1975 depicting the various types of hazards that the city has encountered during the last 50 years, their frequency, and the degree of probability of future occurrence. This analysis was utilized in an "On-Site-Survey" accomplished jointly by the Northern Virginia Regional Office of the State of Virginia Office of Emergency Services and the City of Alexandria. The purpose was to assess potential hazard situations the city might be susceptible to, the degree of readiness in meeting these situations, and to make recommendations for increasing the city's readiness posture. The "Hazard Analysis" performed by MOBDES was an integral part of the project.

Alexandria MOBDES participants were also involved in 1974 in testing local aspects of the Virginia State Operations Plan, and last year MOBDES participants helped meet a problem common to the low areas of Alexandria: flooding. Reservists who were serving their annual 2-week assignments at the time of the flood were able to witness first-hand the implementation of the Flood Plan they had assisted in preparing.

Emergency Plans for Schools

A major planning effort involving MOBDES and the Alexandria School System has been under way since late 1974. This project entails the development of a basic emergency operations plan for the city's school system. The basic plan has been prepared and approved, and is currently being implemented within the school system. The next phase of the planning effort is the development of annexes to the schools' emergency operations plan. At present, the MOBDES are preparing a model plan which could be utilized by individual schools as a basic document and modified to meet their respective needs.

An integral part of the MOBDES program is training and preparing for disaster situations. All MOBDES assigned to the City of Alexandria receive disaster preparedness training from various sources. Each MOBDES joining the program spends a period of time with the major disaster units of the city – Fire, Police, and Public Works Departments – to learn the duties and responsibilities of these departments, their operational procedures during emergencies, and how they interface with the Alexandria Office of Emergency Preparedness. Additional training is obtained both on-the-job and through training courses offered through the DCPA Staff College, in residence, through correspondence, and at the University of Virginia.

Developing an Emergency Operations Center

A project of major impact on the city in terms of financial resources and emergency posture is the design and implementation of a hardened Emergency Operations Center (EOC). At present, Alexandria does not have a genuine operational EOC. It is planned to make provisions for a hardened EOC facility in a future municipal construction project to be undertaken in the next 5 years. The proposed EOC will be utilized on a daily basis by the Coordinator of Emergency Preparedness and his staff, and will serve as a centralized operations facility in an emergency situation.

The MOBDES program, in my opinion, has been successfully implemented in the City of Alexandria. Through this program, the Alexandria Office of Emergency Preparedness has been able to augment its staff and make use of additional resources made available through the Department of Defense under the direction of the Defense Civil Preparedness Agency. Because of the program, the City of Alexandria is much closer to its goal of maximum readiness to meet any major emergency. ■

Recognition

William E. ("Bill") Smith, Director of Atlanta-Fulton County, Georgia, Civil Defense, has been awarded the Community Transportation Development Award for 1976 by the National Defense Transportation Association (NDTA). The award was presented at NDTA's Annual Forum in Boston.

NDTA, consisting of more than 100 local chapters and 13,000 members, was founded in 1944 to assist in the development of a sound national transportation system, responsive to the Nation's military and industrial needs in peace and war.

In addition to the personal award to Mr. Smith, the Atlanta Chapter of NDTA, of which Mr.Smith is a past president, received the "Disaster Achievement Award" for an outstanding disaster preparedness program, and was named the outstanding NDTA Chapter of the Year for 1976.

Mr. Smith authored the Atlanta Chapter's first disaster plan, which was later adopted as the model for all chapters of the National Defense Transportation Association.

Two members of the Defense Civil Preparedness Agency Staff attended separate conferences in Europe this year. Ralph L. Garrett of DCPA Research, attended a symposium on "Survival in Shelters" at the Swedish Civil Defence College near Stockholm in June, and delivered a paper entitled "Social and Psychological Response to the Shelter Environment." In April and June, William L. Harding of the DCPA Office of General Counsel, served as a member of the U.S. delegation to the Third Session of the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts, a conference held in Geneva, Switzerland.

REPORTS FROM EUROPE

Swedish Shelter Symposium

By RALPH L. GARRETT / DCPA Research

When a person involved in the United States civil defense program "talks shop" with Europeans who are also involved in preparedness, he often finds himself facing a type of language barrier. And the barrier has nothing to do with the differing national tongues. It's a barrier of differences in civil defense concepts and views on how the program should be carried out.

This was the central impression I brought back from a symposium, "Survival in Shelters," held in June in Sweden's Civil Defence College at Roserberg Castle, a little over 20 miles north of Stockholm—one of Sweden's four national civil defense schools.

The conference was sponsored by the Swedish Civil Defence Administration, in cooperation with the Swedish Research Institute of National Defence and the University of Santa Clara, California. Some 25 technical papers were presented by scientists from Switzerland, Norway, Sweden, Poland, Yugoslavia, Finland, Denmark, and the United States. Representatives from France and Israel also at-

tended. In all, about 50 scientists attended the four-day symposium.

I want to report my own personal impressions gained from the symposium. The views are mine alone and do not represent the position of the U.S. Government or any other government represented at the conference. I draw the information partially from technical papers presented at the conference, but mostly from informal discussions with conference participants.

Many Differences Noted

Obviously, many differences exist among the countries represented at the conference. If, for example, one were to group all eight European nations represented and compare them with the United States, even a few simple statistics point up differences: The total population of all eight European countries is about two-thirds the total population of the United States, and together the countries represent a total land area of less than one-quarter that of our country. The forms of government are different. One could go on and on.

All of these differences contribute to the dissimilar manner in which many European countries and the United States look upon the subject of civil defense. Even the reason—the fundamental *purpose*—for civil defense is different in many European countries than in the United States.

Since World War II, the basic strategic defense of the United States has been based upon the concept of developing and maintaining a capability for massive nuclear retaliation in the event of an attack. Military capability was designed to assure destruction of any enemy starting a war and, thus, as a deterrent to an attack on our country. American civil defense programs were designed primarily as a hedge against the failure of this primary strategy.

But this civil defense secondary role to the primary strategy of military massive retaliation is not found in many European countries. There the whole concept of civil defense—indeed, of national defense—is based upon what a number of conference participants referred to as "massive resistance." Lacking the military power to deter nuclear attack through military means, many European countries have undertaken defense programs aimed at making it as difficult and as costly as possible for a potential enemy to conquer them—massive resistance.

The Base for Shelter Programs

Under this concept, military and civil defense became equal partners in national defense strategy. Basic to the concept has been the construction of specialized, underground shelters to provide protection from limited blast, heat, and radioactive fallout, and from gas warfare. Indeed, most of the scientific papers delivered at the Stockholm

(Concluded on page 12)

Diplomatic Conference in Geneva

By WILLIAM L. HARDING
DCPA Office of General Counsel

At Geneva, Switzerland this year, civil defense was one of the most debated subjects on the agenda of the Third Session of the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts. The United States, the USSR, and 104 other nations participated in this year's session of the Diplomatic Conference convened to consider supplements to the Four Geneva Conventions.

This proposed development of the law of land warfare includes a number of provisions for legal protection of the civilian population and the wounded and sick.

One chapter in the part on civilians deals with civil defense, and under the articles in that chapter, civil defense organizations and civil defense personnel would be accorded a special status under international law, not unlike that granted medical organizations and international humanitarian relief organizations.

The proposed treaties also greatly expand the protected status accorded civilian medical units and personnel.

USSR an Active Participant

There was over a month of inconclusive discussion in which a great many nations participated. The USSR and the East bloc were quite active; most of these countries were represented by diplomats rather than civil defense officials.

It is clear from the discussions that the USSR is interested in civil defense, and believes in the necessity of an adequate civil defense program.

Currently, under Article 63 of the Fourth Geneva Convention, a civil defense organization in occupied territory must be permitted, within broad limits, to continue to perform many of its civil defense tasks.

During the past 20 years, these people have been instrumental in getting the International Committee of the Red Cross (ICRC) to conduct studies on the subject.

In the early part of this decade, the ICRC prepared draft treaty provisions on civil defense as well as on many other matters. The Government of Switzerland then convened the Diplomatic Conference to consider these. Sessions were held in 1974 and 1975. Civil defense finally came up for specific discussion this year.

(Concluded on page 13)

REPORTS FROM EUROPE

Swedish Shelter Symposium *(Continued from page 11)*

conference were devoted to the technical aspects of these hardened underground shelters.

Since these types of shelters are extremely costly to construct, European governments passed legislation to subsidize the cost. Most of these laws were passed in the early 1950s, but they have been improved and modified over the years. The legislative mandates usually required that the shelters have a peacetime use (e.g., parking garages, gymnasiums), but that this factor should not interfere with the rapid conversion of the structure to wartime use. The role of the government in the creation and use of the shelter is clear to all, including the owner of the building in which the shelter is constructed.

Under these types of programs, impressive shelter programs have been carried out in many European countries. In Sweden, for example, underground shelter has been constructed to accommodate 3,800,000 people, nearly half of Sweden's population. Norway, Denmark, Finland, and Switzerland also reported on relatively advanced shelter construction programs.

The American shelter program, which because of cost factors has been limited to the provision of protection from radioactive fallout, has virtually none of the characteristics of European shelter programs. Here, fallout shelter is located primarily through surveys of existing buildings. Generally, the shelter provides better protection if it is below ground, but most of the fallout shelter spaces in the U.S. national shelter inventory are above ground, in the interior corridors of large buildings. An additional resource exists in private home basements. State and local governments make community shelter plans for the allocation of this shelter space to the population in the event of an attack, but other than periodic planning, there is little direct contact between the owner of the shelter space and the government.

Organizational Structures Differ

Another basic difference between the U.S. and some European civil defense programs relates to the type of management structure created to carry out the programs. For a short time in the early period of United States civil defense planning, the concept was followed of setting up a small professional staff to enlist and train a large group of civil defense volunteers—a civil defense corps. By the mid-1950s this had changed to a concept of developing civil defense readiness by using the resources of most governmental agencies and some organizations in the private sector. The role of the civil defense professional became one of coordination, training, and persuading many governmental agencies to carry out emergency preparedness plans and operations—emergency duties beyond the primary, day-to-day functions of the agencies.

In some European countries, of which Sweden and Switzerland are good examples, a quite different approach was taken, which might be best described as a unified civil defense management structure. The Swedish legislation, for example, divided the country into geographical areas for civil defense, prescribed the organizational structure of civil defense, and authorized civil defense recruitment as a sort of military service obligation for 200,000 people. All are organized into standardized corps or into mobile columns and all perform at least 60 hours of civil defense service a year, in training and exercises. This, incidentally, is the reason why Sweden needs four national civil defense schools since every year some 20,000 Swedes take formal civil defense training at the schools.

In addition, Swedish civil defense has a plant protection organization in which plants having 100 or more employees participate. This involves about 1,200 plants in Sweden and an additional trained force of 65,000. Swedish civil defense trains these people.

The entire program provides for a unified civil defense command of 265,000 people for a Swedish population of 8.2 million—more than 35 times the size of the formal Federal, State, and local civil defense staffs in the United States, and our country has 25 times the population of Sweden. Swedish emergency plans call for complete mobilization of its 265,000 member civil defense organization in 24 hours.

Interest in U.S. Shelter Research

Participants at the Stockholm conference were highly interested in shelter research conducted by the United States, and particularly shelter-living tests we have carried out. I reported on this. Briefly, I noted that during the 1960s the U.S. conducted a series of 82 shelter occupancy studies involving more than 7,000 men, women, and children, ranging in age from 4 months to 82 years. All studies were conducted under austere provisioning of the shelters. The earlier studies included bunks for sleeping, but later studies provided only space to sleep on the floor. All these studies clearly demonstrated that the average American can cope with austere shelter living for 2 weeks or longer. Only 15 percent of the participants failed to complete even the most austere tests.

Such large-scale shelter living studies have not been conducted by European countries represented at the Stockholm conference, and so participants were keenly interested in the results.

We may have differences but we have similarities, especially in the search for knowledge and the basic concern for protecting human life in the face of the catastrophe of nuclear war. ■

REPORTS FROM EUROPE

Diplomatic Conference in Geneva *(Continued from page 11)*

Defining "Civil Defense"

One of the articles describes what is meant by civil defense for purposes of the Treaty. Civil defense includes humanitarian tasks intended to help the civil population avoid the dangers and recover from the effects of hostilities or natural disasters which occur during war. There is a listing of these tasks. One of the points debated, and it has yet finally to be resolved, is whether or not the list contains all protected tasks or just some, as illustrations.

The task listing includes basic civil defense tasks, such as warning, evacuation, shelters, rescue, fire fighting, and emergency repair of utilities. Civil defense medical services, including first aid, have been included in the Articles which deal with medical services generally. As a consequence, civil defense medical organizations and personnel may be entitled to wear the Red Cross emblem in accordance with rules developed on that subject.

While some points, such as one relating to police services, have not been resolved, there is general agreement within the Conference on the task listing. The tasks are basic tasks performed by civil defense organizations here in the United States.

Briefly, the ICRC texts state that civil defense organizations and personnel in the zone of military operations should not be attacked, and should be allowed to perform their humanitarian tasks without interference by the adverse party. In occupied territory, the organization should be assisted in the performance of its tasks by the occupier who is to allow civil defense a strengthened autonomy.

Special Emblem Considered

Another interesting article deals with a distinctive emblem, like the Red Cross, which civil defense organizations may use as a means by which they may be identified as protected civil defense units and personnel. The proposed emblem is a blue triangle on an orange ground. There is general agreement on the emblem. However, the articles dealing with the emblem were not extensively discussed, and they need a good deal of editorial work.

The text presented by the ICRC applies to civilian civil defense organizations and civilian personnel. The limitation of a protected status to civilian organizations and civilian personnel was, by far, the most controversial issue. A large number of countries were of the view that units of the military services performing civil defense tasks for the benefit of the civilian population, and military personnel assigned to civil organizations, should be granted a protected status if civilians were granted such a status. That is, it should be impermissible to attack them, and they should be allowed to perform civil defense tasks in aid of the civilian population.

This would put military civil defense units and personnel in a highly unusual position. Only military medical personnel and chaplains cannot be attacked under the Geneva Conventions.

There are, of course, obvious problems in allowing the military such a protected status, particularly where civil defense activities are being carried out near to the area where contending armies are in contact with each other, as they would be, for example, in a land war in Europe. Military units capable of performing civil defense tasks should be capable of fighting also; further, a civil defense organization, military or civilian, is capable of performing a task which can support military operations just as well as aiding the civilian population. An example is the repair of a utility line which carries civilian as well as military messages. The repair of a utility line which will be used for military message traffic should not be granted any protection.

No Concensus Reached

The United States, Great Britain, The Federal Republic of Germany, Nigeria, and the Scandanavian countries generally were of the view that it would be extremely difficult to devise articles, with adequate precautions, to accord the military a protected status. The USSR, the East bloc generally, Switzerland, The Netherlands, Indonesia, and others were of the view that such articles could be devised, perhaps along the lines of existing provisions relating to medical personnel. No consensus was reached, and the matter is to go over to a fourth session to be held next year. The discussion this year was quite helpful in identifying the issues. Nations can study the matter between the sessions and hopefully can resolve their differences next year in a manner satisfactory to all.

One unresolved item is the geographic extent of area in which civil defense would have a protected status. Aside from occupied territory, it seems likely that the only area which really is involved is the area close to the actual fighting. The draft Treaty prohibits attacking the civilian population, as such, and attacking anything but military objectives. In the respective zones of the interior, this protection should cover all needs of civil defense organizations and personnel. The adverse party can do practically nothing to impinge upon civil defense operations. It is only in the land battle area that a need exists for a special protected status.

As a practical matter, United States civil defense will not be affected by this new Treaty. However, the civil defense organizations of many of our friends could be helped by these new provisions of international law, so the U.S. is working with them to develop acceptable provisions. It will indeed be quite interesting to see what happens at Geneva in the spring of 1977. ■

A BASE for Preparedness

By VERNE PAULE / DCPA Region Seven

The dateline was Martinez, California, located about 20 miles east of San Francisco. Shock waves were felt throughout the area and the Nation on May 21 when headlines from Martinez blazoned the news: TRAGIC BAY AREA CRASH –SCHOOL BUS PLUNGES–28 DIE, 24 ARE INJURED.

Emergency response to the accident, which ultimately claimed 29 lives, was prompt and effective. (See *Response to a School Bus Crash,* page 16.) A key factor was a preparedness exercise held just three weeks prior to the accident—an exercise involving emergency personnel from six cities and Contra Costa County, location of the school bus crash. The exercise simulated a much different type of disaster—an earthquake—but it involved many of the same doctors, nurses, rescue crews, hospitals, fire, police, and other emergency service personnel who responded to the school bus crash.

"It's fortunate we had the earthquake exercise before the bus disaster occurred," Contra Costa County Sheriff's Captain Richard Rainey commented afterwards. "We knew the Office of Emergency Services facilities and had met the personnel eyeball-to-eyeball, so that when the time came to set up the emergency center, we could work together more easily."

Similar comments were made by Assistant Fire Chief Richard Starr of the Consolidated Fire District, Mary Dunten, Contra Costa Public Information Officer, and representatives of the County Administrator's office.

Concerted Preparedness Effort

California will have more accidents and, undoubtedly, more earthquakes. But in the San Francisco Bay area, local governments, spurred by the Los Angeles earthquake of 1971 that claimed 63 lives and caused millions of dollars of damage, are making a concerted effort to improve their level of preparedness. A key element in this readiness program is the Bay Area Systems Exercise-1976, or BASE-76.

BASE-76 is a series of earthquake simulation exercises—one per month—involving nine counties and 95 jurisdictions in the San Francisco Bay area with a population of more than five million people. It is the largest series of preparedness exercises of this type ever conducted in California or elsewhere in the Nation.

The exercise series, developed under a contract funded by the Defense Civil Preparedness Agency, was started as a result of studies carried out after the 1971 earthquake in the Los Angeles area. After that disaster, the Federal Disaster Assistance Administration (then the Office of Emergency Preparedness) contracted with the Commerce Department's National Oceanic and Atmospheric Administration to produce a "Study of Earthquake Losses in the San Francisco Bay Area." After publication of the study in 1972, an intensive planning effort was initiated with the nine San Francisco Bay Area counties by DCPA Region Seven, FDAA, and the California State Office of Emergency Services. It was an earthquake response planning effort involving a team of Federal and State preparedness officials surveying, with extensive local assistance, a local government's emergency readiness posture, followed by a summary and recommendation of requirements, acceptance by the local jurisdiction of these recommendations, and the development of an action plan for implementation. The work was carried out in 1974 and 1975 in the nine San Francisco Bay Area counties.

After the on-site surveys, earthquake response planning workshops were conducted by DCPA and California Office of Emergency Services (OES) personnel. One result was the formation of a Bay Area Steering Committee to oversee the development and production of the Bay Area Systems Exercise program. The committee consisted of Emergency Services representatives of the nine Bay Area counties and cities, DCPA Region Seven, FDAA, OES, and the Association of Bay Area Governments, an agency owned and operated by local governments in the San Francisco Bay Area to carry out comprehensive area-wide planning.

A DCPA-funded contract was awarded to the Graduate School of Public Administration of Golden Gate University, San Francisco, to develop, produce, and conduct seminars, workshops, and system exercises for local jurisdictions in the nine Bay Area counties.

To encourage participation by local jurisdictions in the exercise program, representatives of DCPA Region Seven and the California Office of Emergency Services met personally with the city managers of the jurisdictions, and obtained their written approval for the involvement of their department heads, not only in the exercise itself, but also in the preparation for the exercise.

Under the BASE-76 program, local simulators and operators are trained in developing the realistic messages used in each exercise. A specific scenario is custom-made for each county. It simulates a high magnitude earthquake causing widespread damage and many casualties. Problems that the local department heads face include utility disruption, water, sanitation, medical, transportation, rescue, building inspection, relocation of survivors, and emergency information to the public.

Extensive Preparation Required

Thousands of man-hours are involved in the training and preparation for each exercise. There is no other cost to local government other than the time of their management personnel. No equipment or field personnel are moved; this is all simulated to give the managers a realistic feel for the problems created and the resources available to meet the problems. The public is not involved.

During each exercise a closed-circuit telephone system is used to enable exercise simulators, located in one room, to communicate to the Emergency Operations Center the numerous situations developing immediately after the make-believe earthquake strikes. These prompt the actions that department heads must take to control fires, evacuate people from damaged buildings, close roads, provide medical facilities, restore damaged utility services, communicate with the public, and take other emergency actions in the early hours following the simulated quake.

After three hours of the exercise, a critique is conducted that provides a realistic evaluation from the department heads who have participated.

The net result is that, for the first time in these counties, hundreds of city and county governmental decision makers participate from three to four days in preparedness training workshops, design the scenario, make emergency decisions during the exercise, and then evaluate their actions to point up the strong and weak points in their emergency operations. Each exercise serves as a catalyst for the improvement in local emergency response plans.

Local reaction to the BASE-76 exercise program has been excellent. As Pleasant Hill City Manager Jim Alkire put it: "We don't get a chance to think in terms of a crisis very often, and you really have to think about it before it happens in order to be effective. The exercise was an excellent training tool for our people. The department heads are so busy normally, they don't get a chance to train very much. So when you get a chance to train all together, it's good for us. You are always training your lower level employees, but your department heads very seldom get a chance to work together, head on, in this manner."

By fall, six county-wide BASE-76 exercises had been conducted—in Solano County, involving seven cities and the county with 200 participants; in Santa Clara County with 14 cities and the county, 450 participants; Contra Costa County with six cities and the county, 275 participants; Napa County with four cities and the county, 100 participants; San Mateo County with 19 cities and the county, 500 participants; and Alameda County with 13 cities and the county, 400 participants. Exercises were scheduled for the balance of the year for Marin, San Francisco, and Sonoma Counties.

The plan is to use data from the county exercises as the basis for State and Federal agencies to prepare and conduct an exercise in the Spring of 1977 devoted to managing and delivering State and Federal assistance to localities hit by an earthquake in the San Francisco Bay Area. ■

DISASTER INFORMATION is posted on a large map of San Jose City during a BASE-76 exercise conducted in Santa Clara County, California.

By STEPHEN COOK / San Francisco Examiner

RESPONSE TO A SCHOOL BUS CRASH

A school bus crashed through a guardrail of a highway offramp at the northeastern corner of San Francisco Bay on May 2l, killing an adult and 28 teenage members of the Yuba City High School Choir, and injuring 23 others. The California Highway Patrol said it was the worst school bus accident in the State's history.

This is an account by a local newspaper reporter of how the Contra Costa County Office of Emergency Services (civil defense) responded to the sudden tragedy.

For years, the people who provide emergency services in Contra Costa County had been preparing for a major bus accident.

Medical and public safety teams drilled for it, just as they often do for other potential disasters—earthquakes, explosions, chemical leaks, airplane crashes.

So when the Yuba City school bus plunged 30 feet from an offramp and landed on its back, everyone was ready.

Will Perry, director of the county's Office of Emergency Services, was walking past the medical communications console in his office when the first call came. Within minutes, he was at the scene, arriving just as the first fire truck and ambulance did.

"I took one look and radioed my office that we had a major casualty accident. I told them to alert the hospitals to be prepared to receive multiple casualties. We put our disaster plan into effect," he said.

Medical Team Arrives

One of the first effects of the initiation of the plan was the arrival of a field medical team of two doctors and six nurses from the county hospital. There are three such teams in the county prepared to roll to disaster scenes, Perry said. *(continued on page 18)*

EMERGENCY UNITS respond to the tragic school bus crash in the San Franciso Bay area that claimed 29 lives. Contra Costa Times photo.

When they arrived at the upside-down bus Friday morning, they began separating the lightly injured and the dead from those requiring immediate medical attention.

In accordance with previously established procedures, each of the dead had to be so certified by three medical representatives at the scene.

Perry's initial radio calls to his office also brought two heavy-duty rescue trucks to the crash scene.

The Red Cross was notified. County emergency plans hold that organization responsible for the care of relatives and friends of disaster victims.

The Alameda-Contra Costa County blood bank was notified. Temporary blood donor centers were set up in Martinez and Concord, and lines of people wanting to donate their blood for the young victims began to form.

Hundreds Donate Blood

"They took blood faster than it has ever been taken before," said Perry. "They had people in line for as much as three hours to donate blood. Finally they couldn't take more because they couldn't process the blood."

Some 400 pints of blood were donated that afternoon in Contra Costa County. Perry estimates that people throughout the Bay Area gave about 1,000 pints for the accident victims. Much of it was needed immediately. One young person required 30 pints.

"The first six youngsters out of the bus were in surprisingly good condition, considering the appearance of the vehicle," Perry said.

"We started getting our hopes up that this was a serious situation but maybe not as bad as it looked," said Perry.

"I made a guess and radioed to the office that we could have as many as 50 requiring medical attention," he said.

So that no one hospital would be overloaded, the injured were sent to the four closest hospitals.

"Any emergency room can be overwhelmed. We sent one ambulance to one hospital, the next to another, so we would not overload any one facility," he said.

"It wasn't until we lifted the bus that we found our medical aid problem was not a severe one because so many of them were dead."

Hospitals Get Ready

Still the hospitals were taxed. With first word of the disaster, emergency rooms were cleared and surgery schedules were canceled so that any victim requiring immediate surgery would get it.

The Veterans Administration facility in Martinez had no neurosurgeons, so a team was flown there by helicopter from Letterman General Hospital at the Presidio.

At the county morgue, pathologists from two neighboring counties were called in to help with the required autopsies.

A mile away, a shelter for the families of the victims was established in the Deputy Sheriff's Association clubhouse, just down the street from the Office of Emergency Services.

"If a situation like this had occurred anyplace else, some mother or father would have had to call the coroner and a dozen hospitals trying to find out about their child," Perry said.

"We had the parents come here. They were accommodated next door and we could tell them there if their child was dead or alive and what hospitals they were in.

"We had one focal point for coordination of the operation, for information for the news media, for inquiring relatives, and for the concerned public. It was all here at our offices," he said.

Help for the Parents

Perry's office called Yuba City High School and arranged for a team of teachers and administrators to come to the morgue and identify the youngsters, sparing the aggrieved parents that chore.

At the clubhouse, clergymen, doctors, nurses, psychologists and psychiatrists were on hand to support parents encountering the loss of their children.

"We gave as much care to the relatives as we did to the victims," said Perry.

A seemingly endless stream of county residents came to the emergency services office and the shelter for parents that afternoon, bearing food and offers of lodging.

More than 500 persons offered to let relatives of the Yuba City victims into their homes for the night, said Red Cross officer Emily Decker.

"It was really a great outpouring . . . a wonderful community effort," said Mrs. Decker.

Charles Manfred, Director of the State Office of Emergency Services, said Contra Costa County's response to the tragedy will be fully reviewed, "but early indications are that they did an excellent job.

"Hospitals, ambulances, and public safety people operated in exemplary fashion. It was a very tragic situation and they did a very good job under difficult circumstances.

"It shows the value of emergency planning and disaster preparedness," he said. "We try to encourage county emergency organizations to hold exercises and test their emergency plans."

Practice is what made Contra Costa's response a good one, he said. Though all 58 counties in California have written emergency plans, not all are prepared to deal with the type of disaster that occurred near the Benecia-Martinez Bridge that Friday. ■

This is the third of three articles discussing the problems encountered in providing food for populations that have been relocated from areas of high risk in anticipation of a nuclear attack. An initial article appearing in the Spring 1976 edition of FORESIGHT described the existing United States food distribution system. A second article in the last edition of FORESIGHT discussed alternative courses of action in distributing food and feeding evacuees under such crisis relocations. This article summarizes the results of an evacuation planning study undertaken in Colorado Springs, Colorado. The research described in the series of articles was undertaken by the author as part of the Crisis Relocation Planning studies currently sponsored by the Defense Civil Preparedness Agency.

Food for Evacuees

CASE STUDY: COLORADO SPRINGS

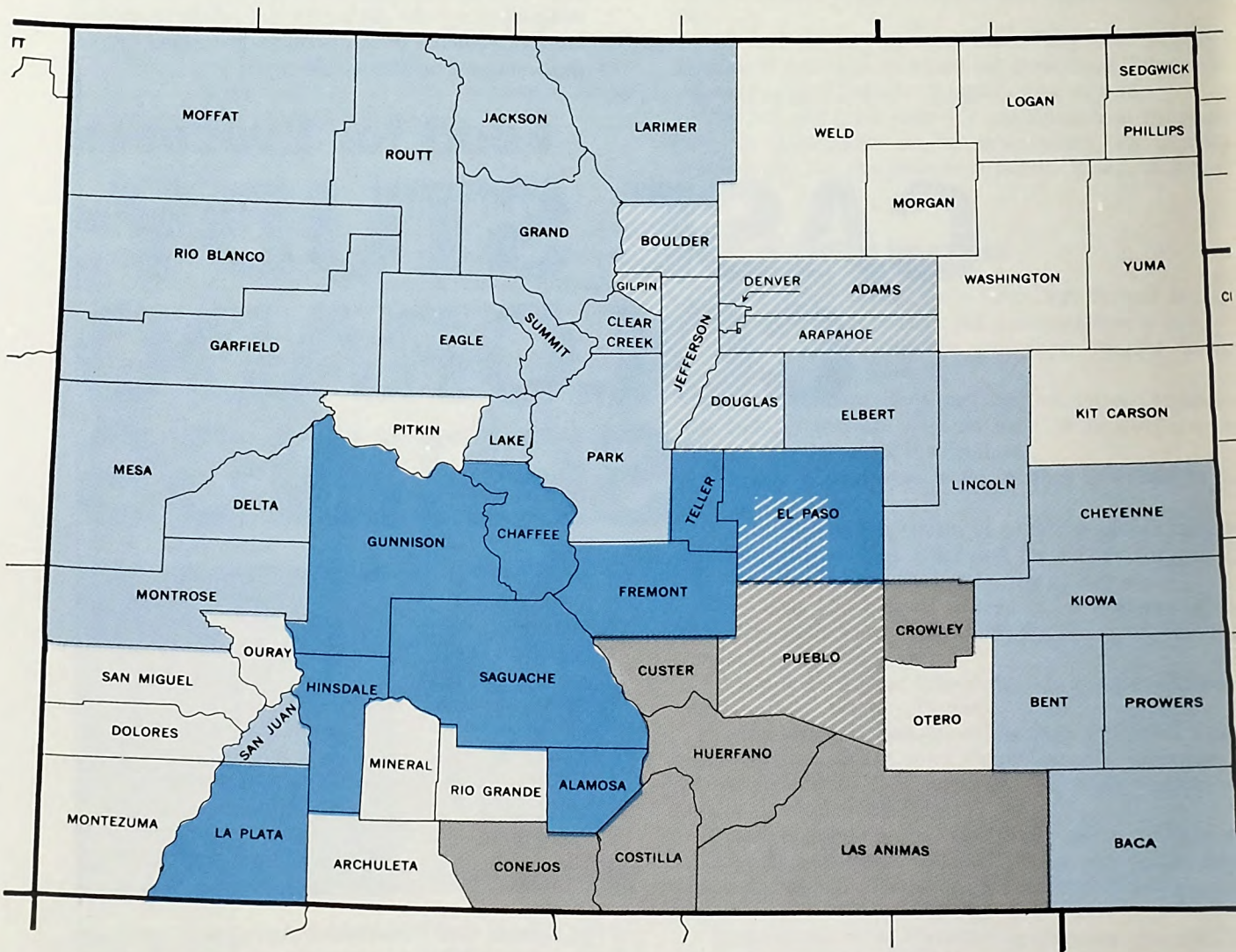
By JOHN W. BILLHEIMER
SYSTAN, Inc.
Los Altos, California

The Defense Civil Preparedness Agency is currently exploring the possibility of evacuating major United States cities in a period of extreme international tension involving the threat of nuclear attack. This possibility, known as Crisis Relocation Planning (CRP), is part of an effort to provide Americans with an option to in-place protection (use of fallout shelters in home communities) in the face of international tensions, possibly as a reaction to a Soviet evacuation.

Food for Evacuees

CASE STUDY: COLORADO SPRINGS

Colorado Risk and Host Areas



The prospect of evacuating major United States cities raises many serious questions. One of the most important of these is the problem of feeding large numbers of evacuees scattered about the more remote areas of the country. The task of feeding both the relocated population and the residents of the regions hosting these evacuees will severely test the capabilities of the national and local food distribution system.

The bulk of the food required to sustain evacuees under a crisis relocation strategy will have to come from ordinary commercial channels. As a result of research (described in the last edition of FORESIGHT), guidelines have been developed for adapting these channels to make the food in the hands of local wholesalers and retailers accessible to the evacuated populations. These are summarized in the chart, "Recommended General Guidelines for Providing Food Support for the Crisis Relocation Strategy," and have been employed in a case study of a postulated pre-attack evacuation of the Colorado Springs, Colorado, area, 70 miles south of Denver—a high-risk area (including part of El Paso County just south of Colorado Springs) with a population of 220,000.

By agreement between the Colorado Division of Military Affairs and the United States Defense Civil Preparedness Agency, the urbanized area of Colorado Springs has been designated as a high-risk area in the event of a nuclear attack threat. The specific area designated to be at risk includes the urbanized area itself and the portion of El Paso County directly south of the urbanized area, including Cheyenne Mountain and the Fort Carson Military Reservation. In conjunction with local officials, DCPA representatives have identified lower risk areas in surrounding counties to which residents of the Colorado Springs area might be evacuated under the threat of nuclear attack. Surrounding counties designated as host counties for Colorado Springs include Alamosa, Chaffee, Fremont, Gunnison, Hinsdale, La Plata, Saguache, and Teller.

In addition to the Colorado Springs area, the Denver and Pueblo areas of Colorado are also scheduled for crisis relocation in the event of a nuclear threat.

Key Assumptions Listed

Several of the key assumptions made in developing a crisis relocation plan for Colorado Springs and its surrounding host counties are:

- Relocation of the population of the risk area will occur only at the direction of the Governor of Colorado, generally at the request of the President of the United States. Measures preparatory to such relocation may be undertaken during a crisis at local option.
- Crisis relocation of the risk-area population, only when directed by the Governor of Colorado, will be mandatory, not voluntary, and in general accordance with the Crisis Relocation Plan.
- All of the risk-area population, less active-duty military personnel, will relocate to designated host counties or designated parts of El Paso County.
- After relocation is accomplished, there will be no requirement for goods or services anywhere in the risk area during the relocation period except as necessary for the preservation of property and the support of essential activities.
- Some portion of the risk-area population, estimated at between 10 and 20 percent, can be expected to leave the area in advance of a directed crisis relocation. These spontaneous evacuees are expected to consist mainly of families whose members do not have public or emergency responsibilities and who have a vacation home or relatives in mind as a destination. The location, identification, and destination of this group will not be known.
- Once crisis relocation of the risk-area population has been directed, the minimum duration of the relocation period will be seven days. The maximum duration of the relocation period is uncertain but could last several weeks.

Heavy Dependence on Denver

Colorado Springs relies heavily on Denver for its supply of processed foodstuffs. Very little food is stored at wholesale warehouses in Colorado Springs itself. The vast majority of the food supplies for Colorado Springs are shipped through Denver and warehoused in Denver. Indeed, this is true of the entire State: 85 percent of the food shipped throughout Colorado moves through the City of Denver.

Food destined for Colorado Springs represents less than 10 percent of the total amount of food moving through the Denver marketplace. Two-thirds of the food shipments reaching Denver arrive by truck. Movements from Denver to the Colorado Springs risk and host areas are made almost exclusively by truck. Most of these local movements take place in trucks that are owned and operated by supermarket chains and major independent wholesalers. A variety of truck types are used, but the predominant unit is a tractor-trailer combination with a 40,000-pound carrying capacity.

Four major firms are primarily responsible for retail food distribution in the Colorado Springs risk and host areas. The estimated market shares of these firms are listed on the following page.

Food for Evacuees

CASE STUDY: COLORADO SPRINGS

ESTIMATED PERCENT OF RETAIL GROCERY SALES, COLORADO SPRINGS

	Risk Area	Host Area Counties
Safeway	37.5%	43%
National Tea (Millers)	13.5	0
Dillon Co. (King Soopers)	13	2
Associated Grocery	36	45
Others	(under 1%)	10
Total	100 %	100%

These four listed firms all serve the Colorado Springs market from warehouses located in Denver. Service to Colorado Springs represents a small fraction of the volume of business handled at each of these Denver warehouses. In addition to these Denver warehouses, Associated Grocer, a voluntary cooperative serving over 700 independent grocery and smaller chain stores throughout Colorado and adjacent States, maintains a warehouse south of Colorado Springs in the City of Pueblo. Surveys show that Associated Grocer is responsible for the largest share of retail grocery sales in the eight-county Colorado Springs host area, accounting for 45 percent of host-area sales with 37 independent outlets. By way of contrast, the Safeway chain accounts for an estimated 43 percent of the sales in these host counties with only six outlets.

Colorado Springs residents, who are dependent on wholesale food distribution centers located outside the boundaries of the risk and host areas, must also look outside these boundaries for food production resources. There is relatively little agricultural production in the risk and host areas. The sole instance of production on a large scale occurs in the case of the San Luis Valley potato crop. Storage stocks of this crop reach their high point in the San Luis Valley in December, and are generally depleted by mid-April. Recent storage statistics show a high of 5.5 million hundred weight in December, or enough to supply every resident of Colorado with emergency rations of potatoes for a period of two years.

Colorado Springs also relies heavily on Denver and points outside Colorado for most of the processing operations applied to food distributed locally. Only two food processors with plants located in Colorado Springs employ more than 50 people and can be said to command a significant share of the local or regional market. These two processors are the Sinton Dairy and the Coca-Cola Bottling Company. Of these two, only Sinton Dairy would continue its operations under conditions of crisis relocation.

Distribution Adjustments

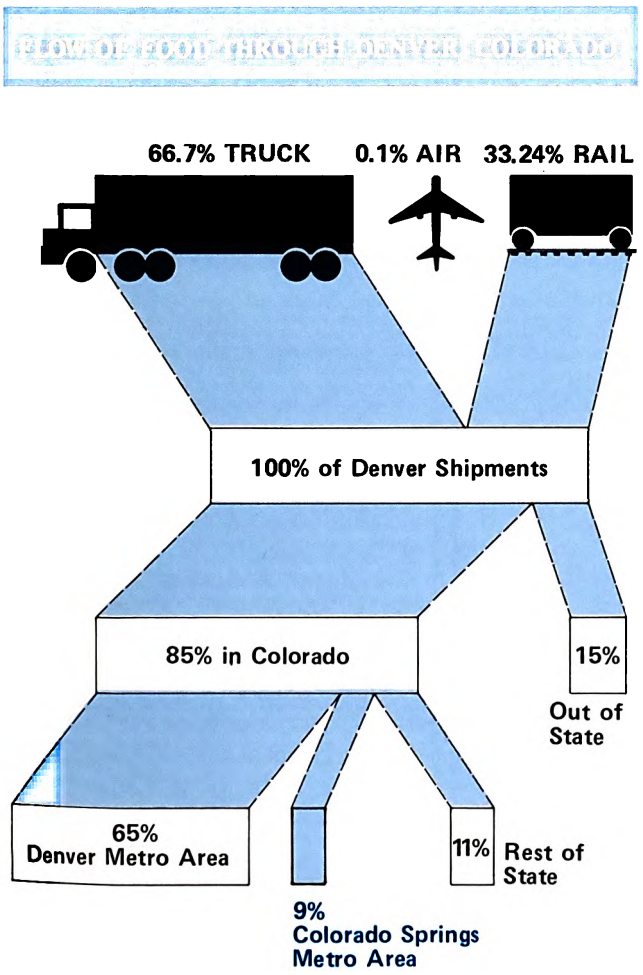
The distribution system adjustments proposed for the Colorado Springs area in support of a crisis relocation strategy parallel the adjustments outlined in the accompanying guidelines. Chief among these adjustments is the shift of supplies from risk-area wholesale outlets to host area retail outlets. In general, Denver warehouses servin the study area population before evacuation will continu to do so after evacuation by shifting deliveries from thei risk-area stores to their host-area stores. Food will be de livered to relocatees through a combination of retail outlet and mass feeding centers. Wholesale warehouses with n host-area outlets will supply mass feeding centers directly The only major food processing activity in the risk area, th Sinton Dairy, will continue operations throughout the eva uation period.

Personnel from the Denver distribution centers of ea of the major distributors supplying Colorado Springs we interviewed, and there was general agreement that the mo efficient strategy for supplying food to evacuees under crisis relocation movement would be to supply retail o lets in the host area with the food normally delivered risk-area outlets, while continuing to operate the who sale warehouses in the Denver risk area. None of the distr utors felt that this would place an undue strain on the ho area retail outlets. Revised distribution patterns w worked out for each of the major distributors serving study area.

Safeway faces the fewest problems in adapting its tribution patterns to support an evacuation of the Colora Springs area. Safeway has seven stores in the Colora Springs risk area and six stores in the Colorado Springs h area. The firm retains control of its goods from the wh sale warehouse through the checkout counter, has a c puterized ordering system, and anticipates few problem shifting the bulk of its Colorado Springs orders to h area outlets so long as its Denver distribution cente allowed to remain in operation.

In the case of the Dillon Company, region-wide adj ments were planned to balance the flow of food betw the counties hosting Denver evacuees, where Dillon is represented, and the counties hosting Colorado Spr evacuees, where Dillon has only a few outlets.

The National Tea Company, which controls 13.5 percent of the Colorado Springs risk-area market with five Miller's Supermarkets, has no outlets in the Colorado Springs host area. Moreover, each of its 31 Colorado retail outlets is located in a risk area. Under crisis relocation conditions, therefore, National Tea will have no readily available corporate outlet for its wholesale food stocks. Accordingly, it is desirable that National Tea provide direct deliveries to the larger host-area mass feeding centers.



Associated Grocers has a larger number of stores in the host area (37) than any other firm. Unlike Safeway, National Tea, and King Soopers, however, Associated Grocers loses control of its food once it is billed and shipped from the central warehouses, and cannot initiate orders from the central warehouse. Although its order system is computerized, it must depend on its independent retail outlets to initiate orders. Associated Grocers personnel saw no logistics problems in shipping all their food to host-area retail outlets in the event of an emergency, but the question of ownership and responsibility poses an extra organizational problem which must be considered.

Little Agricultural Production

No major agricultural production takes place within the designated Colorado Springs risk area. All agricultural production in the remainder of El Paso County and the designated host counties should be continued throughout the crisis relocation period.

Current levels of host-area production should be sustained during the crisis and, to the extent possible, increased. For example, during certain seasons, harvesting could be expedited both to increase the supply of food available locally and to minimize the potential exposure of unharvested crops to fallout in the event of a nuclear attack. In addition, with more available labor, harvesting waste could be reduced. However, extreme responses, such as the mass slaughtering of cattle, hogs, and sheep, should be avoided.

With the exception of the Sinton Dairy, all food processing operations within the Colorado Springs risk area should be shut down for the duration of the crisis. Trucks and drivers should be placed at the disposal of the National Defense Transportation Association (NDTA), and current product inventories should be reported to the U.S. Department of Agriculture. To the extent possible, perishable products should be transported to evacuation staging areas or to the host area for immediate distribution.

Under crisis relocation conditions, the Sinton Dairy would continue to operate and should attempt to increase plant capacity by concentrating on gallon and half-gallon sizes, operating two shifts, and bypassing the separating operation. Using these measures during a recent Denver grocery strike, the dairy increased its output by 66 percent without adding new personnel. This capacity increase will require that the existing transportation fleet be augmented with 12 on-the-road tractors and trailers having a 3,600-gallon capacity, or with wholesale trucks having an equivalent total capacity. At least 15 additional drivers will be needed. Both drivers and equipment might be obtained from a pooling operation administered by the NDTA.

Most of the raw milk supplying the dairy comes from farms to the south and east of Colorado Springs, particularly from the Canon City and Pueblo areas. These sources would continue to produce under crisis relocation conditions, and their location is particularly convenient under such conditions.

Recommended General Guidelines for Providing Food Support for the Crisis Relocation Strategy

STATE AND REGIONAL ACTIVITIES

- Define distribution patterns for chain and independent wholesalers.
- Arrange for any additional drivers and equipment made necessary by revised distribution patterns through NDTA.
- Waive vehicle highway weight restrictions.
- Publicize waiving of DOT Driver Restrictions.

	RISK AREA ACTIVITIES	HOST AREA ACTIVITIES
PRODUCERS	° Continue any agricultural activity of national, regional, or local significance. (Little significant agricultural production currently occurs in risk areas.)	° Continue all agricultural activity.
PROCESSORS	° Continue only those processing activities that lead to production of commodities included in emergency standards and that either are national or regional in scope or command a significant share of the local market. ° Encourage workers in discontinued processing activities to transfer their skills to similar host area processing facilities.	° Continue all food processing activity, expanding operations where possible through the use of relocated workers and unused capacity.
WHOLESALEPS	° Continue to operate all chain and independent wholesale operations that command a significant (i.e., over 10%) share of the local market, following revised distribution patterns specified at state and regional level. ° Empty smaller warehouses as quickly as possible, transferring goods to host area commissaries and warehouses. Encourage workers in discontinued operations to seek employment in host area warehouses. ° Augment transportation fleet and driver pool as required, following guidelines and procedures established by NDTA for obtaining personnel and equipment from other sectors. ° Increase vehicle and driver productivity by taking advantage of waived driver restrictions and weight limitations; minimizing down-time; relaxing maintenance requirements; increasing vehicle loads; loading only full-pallet quantities; and shipping only necessary commodities.	° Continue all food warehousing and distribution activities, expanding operations where possible through the use of commandeered space, worker overtime, and relocated workers. ° Augment transportation fleet and driver pool as required, following guidelines and procedures established by NDTA for obtaining personnel and new equipment from other sectors. ° Increase vehicle and driver productivity by taking advantage of waived driver restrictions and weight limitations; minimizing down time; relaxing maintenance requirements; increasing vehicle loads; loading only-full pallet quantities; and shipping only necessary commodities.
RETAILERS	° Observe price controls & single purchase limitations established nationally during pre-crisis period and evacuation period. ° As inventories & personnel permit, remain open during evacuation period. Then close operations for duration of crisis relocation period & report on remaining inventories. ° Chain stores arrange for employees to transfer to chain's host area outlets for duration of emergency. Employees of independent stores should be encouraged to seek employment in host area retail outlets.	° Observe price controls, single purchase limitations, rationing plans, & coupon redemption policies established nationally during pre-crisis period & for duration of crisis relocation period. ° Continue all retail food operations, expanding as required by using added personnel relocated from risk area; extending business hours; authorizing overtime work; stocking at night; and identifying and using expedient nearby storage space.
PREPARERS AND SERVERS	° Chain restaurants with host area outlets should transport inventories to these outlets & reassign workers to host area operations. ° Fast food operations should prepare as many meals as possible during evacuation period & make them available at evacuation staging area. ° Caterers should relocate all mobile food preparation equipment & as much of their inventories as possible to host area. ° Institutions & stores with equipment for large-scale food preparation should transport inventories & equipment to host area.	° Restaurants & kitchen-equipped institutions should expand operations by using additional personnel relocated from risk area; enlarging seating capacity; & identifying & using expedient nearby storage space (garages, etc ° Large-scale mass feeding operations in kitchen-equipped institutions will be supervised by disaster agencies such as Red Cross ° Distribute food preparation equipment & incoming inventories as needed among institutions, restaurants, congregate care facilities, & private residences with hosting capacity.
CONSUMERS	° Avoid hoarding in pre-crisis period. ° Transport as much non-perishable food to host area as is permitted by home stocks and mode of transportation. A one- to two-week supply should suffice.	° Avoid hoarding in pre-crisis period. ° Encourage host area residents to provide shelter and food to members of relocated population.
CONTROLS	° Price regulation & liberal single-purchase limitations at retail outlets during pre-crisis and evacuation periods.	° Price regulation & conservative single-purchase limitations at retail outlets during pre-crisis period. ° Price regulation & coupon rationing at retail outlets, restaurants, & mass feeding facilities during crisis relocation.

Food for Evacuees

CASE STUDY: COLORADO SPRINGS

Controls on Retail Purchases

Retail grocery stores in the risk area would be expected to observe price controls and single-purchase limitations established nationally during pre-crisis period and evacuation period. The remaining inventories would be reported to the Colorado Food Agency, and operations would cease for the duration of the crisis relocation period.

Chain stores, such as Safeway and Dillon, with outlets in both risk and host areas, would arrange for employees to transfer to these outlets for the duration of the emergency. Employees of other chains and independent stores should be encouraged to seek employment in independent host-area retail outlets.

Retail outlets in the host area should remain open and expand their operations by using transferred risk-area personnel, extending business hours, authorizing overtime work, and stocking at night. Managers of host-area outlets should identify and use expedient storage space in parking lots, nearby warehouses, and garages to store incoming shipment overflows.

Potential Transportation Stress

So long as the major wholesale distribution centers located in the Denver risk area are maintained, the local adjustments required to direct large quantities of food to the host area need not interfere with the flow of national supplies into Colorado. These adjustments will, however, place a heavy strain on the local food transportation system. Supermarkets in the Colorado Springs area receive a minimum of one delivery of dry groceries each week from Denver wholesalers, with more frequent deliveries of meat and perishable items. The typical high-volume market receives an average of four deliveries of dry groceries per week, and daily deliveries of meat and perishables. Dry grocery deliveries are made by tractors and trailers owned and operated by the supermarket chain or independent wholesaler, as are most of the meat and perishable deliveries. The proposed distribution system adjustments will impose heavy stresses on the trucks and drivers currently employed by major Denver distribution centers. Instead of making relatively short delivery runs to Colorado Springs, trucks and drivers will have to continue far south of Colorado Springs to reach the host area. In order to determine the effect of a crisis relocation strategy on local delivery equipment, estimates were made of the additional mileage imposed on this equipment by such a strategy.

The transportation stress resulting from a crisis relocation was estimated by assuming that the four cities of Denver, Boulder, Pueblo, and Colorado Springs would be evacuated simultaneously, and by computing the additional mileage imposed on the transportation fleets serving Denver distribution centers by this simultaneous evacuation. Transportation stress estimates were derived by dividing the current mileage consumed by each wholesaler in serving all its retail outlets (most of which are clustered near the warehouses in the risk area) into estimates of the mileage required to carry the same amount of food to those outlets located in host counties throughout Colorado. A stress factor of 3.04 was derived for all major Denver food wholesalers, indicating that the vehicle mileage required to make regular deliveries to host county outlets would be more than triple the mileage currently consumed by local food deliveries.

Because existing drivers and equipment are not currently being employed at their maximum capacity, a tripling of vehicle mileage does not necessarily imply a tripling of transportation resources. A rough estimate of the additional equipment required by Denver-based food distribution centers is 162 tractors and 280 trailers. This represents approximately a 40 percent increase over the current fleet of 415 tractors and 650 trailers. In addition, nearly 465 drivers would have to be diverted from less critical sectors of the economy to join the drivers currently employed by food wholesalers, approximately doubling the current driver fleet size. Discussions with representatives of the Denver Chapter of the NDTA indicate that sufficient equipment and personnel can be made available from less critical Denver industries to meet these requirements.

Two Major Problems

The case study analysis suggests that sufficient food and water exists in the regional distribution systems serving the Colorado Springs risk and host areas to accommodate the massive population shifts caused by a crisis relocation strategy. Such shifts may be accommodated most effectively by continuing to operate existing Denver food distribution centers to supply host area retail outlets and mass feeding centers.

The case study analysis also points out two potentially serious problems capable of disrupting the orderly flow of supplies to host area residents and relocatees:

1. The relatively long evacuation distances characterizing crisis relocation plans in each of Colorado's four urbanized areas will place unusually heavy demands on the State's transportation resources.

2. If supplies are to be distributed equitably to relocatees and residents, strict price controls, purchase limitations, and other forms of rationing will have to be employed before, during, and after the evacuation.

Additional studies of transportation problems and economic controls are being undertaken as crisis relocation planning progresses. ■

CRISIS SCENARIO

This article is fiction.

While it deals with what could be, it is not a prediction of what will be.

The article, prepared by Russell B. Clanahan of DCPA Information Services, is based upon extracts from a 65-page research study, "The Nuclear Crisis of 1979," written by Dr. William M. Brown, now of the Hudson Institute. This is one of several research projects undertaken in support of the DCPA Crisis Relocation Planning (CRP) effort, a program aimed at providing an option to evacuate major United States cities in a period of extreme international tension involving the threat of a nuclear attack.

Dr. Brown's study was prepared to help professionals involved in Crisis Relocation Planning by giving them a more graphic picture of how an international crisis–especially one lasting a relatively long period of time–might impact on our people and institutions.

These selected portions of Dr. Brown's crisis scenario describe some of the problems that could be faced by a community of 30,000 as it prepares to accept 60,000 evacuees, and the possible concerns of the evacuees themselves.

THE TIME: 1979

THE PLACE: Your hometown . . . or anyone's hometown, U.S.A.

THE SITUATION: There have been ominous news reports for months of a clash of interests between the United States and the Soviet Union which began in the Mideast, graduated to power politics in Europe in a ritualistic game of "chicken," and culminated on July 7 with actual warfare between NATO and Communist bloc forces. The Soviets began evacuating their cities on July 11. Conventional warfare resulted in the capture of Hamburg and Hanover, West Germany, by July 30, and a U.S. decision on August 1 to evacuate millions of Americans from risk areas in the United States.

What do you do now?

Where do you go?

How does the government react? The people?

These are among the questions posed by a research study, "The Nuclear Crisis of 1979," written for the Defense Civil Preparedness Agency by Dr. William M. Brown, now of the Hudson Institute, Croton-on-Hudson, New York. The scenario, compounded of both factual information and informed imagination, tells in a series of vignettes how the frightening unknown of a nuclear crisis could affect the average American—the individual, the family, the local government official.

The project was carried out as one way to help crisis planners get a more graphic picture of how an international crisis—especially one lasting a relatively long period of time—might impact on governmental institutions and the people of the United States. In this way, planning to meet the problems foreseen could be more realistic.

And the problems? They're one of the few things in surplus.

Take "Mayor Smitty" as an example—the head of an imaginary town of about 30,000 in Colorado—and his police chief, "Harry Blackburn," who also has collateral duties as the city's civil defense director.

A Mayor Faces Problems

"On June 24," Mayor Smitty recalls about a week later in the scenario, "Harry told me that he had received a call from the State CD director who had earlier sent him a bundle of information on the CRP." (Crisis Relocation Planning is a cooperative program of the Defense Civil Preparedness Agency and State and local civil defense to plan for moving the populace from "high-risk areas" to

"host areas" during a severe international crisis, and to care for the evacuees in the host areas.) "This means, (Harry) said, that if the U.S. came close to a nuclear attack . . . that a flock of people from Colorado Springs, perhaps 50-60,000 of them, would descend upon us and stay here until told to return. Well, that was a shock! I didn't think it was physically possible to accommodate them. Our motels and hotels can only accommodate a few hundred, maybe a thousand if we packed them in.

"Harry explained that we had to look at it as a life-and-death matter and that, although the evacuation probably would not happen, if it did there would be no other reasonable alternative for these people. We decided to assign the job of understanding this thing to a special assistant, Leroy Bluestone, a young man with an M.A. degree fresh out of college, mostly because we don't ignore requests from the State capitol. My mental picture of a 60,000 person mob of strangers descending upon us for an indefinite stay gave me a nightmare. By the next morning, however, I decided that it was just another routine bureaucratic request that would quietly fade away.

Tough Questions Posed

"Three days later Leroy came to brief me. I could see he was worried. Sixty thousand people, he said, would require every school, church, auditorium, motel, hotel, and building of every kind with available space. . . .) Then he handed me a *partial* list of the obvious problems that he believed would need consideration and solution.

1. Who had the legal *right* to assign the visitors to private or public property for an indefinite period?
2. How could enough food be obtained, especially if it became a long stay?
3. We would need somehow to obtain fallout shelters (in event of a nuclear attack) for *90,000* people. We had found less than 5,000 spaces according to the last survey taken about 10 years ago!
4. Who would assume the enormous financial responsibility for food, supplies, rent, damage, fuel, shelter, medical care, etc.?
5. Where would we get the extra facilities and trained people for maintaining order and physically handling a huge increase in demand for communications, postal service, groceries, cooking, cleaning, trash collection, electric power, sanitation . . . ?
6. How would we organize such a large group of refugees in a reasonable time to contribute to the work which would need to be done soon after they arrived?
7. Who would pay whom, how much, for what work?
8. Would a rationing system be needed? If so, for what items, how soon, and would it be feasible?
9. What needed to be done, actually, to prepare for surviving a nuclear attack? In this regard, who are the professionals with valid information? Are there enough of them? How many do we get and when?
10. What assistance, if any, can we expect from the Federal, State and County governments: (a) during the planning (beginning now), (b) during the relocation, (c) during the stay, (d) in the event of an attack, and (e) if the visitors go back home leaving a mess?
11. How would we handle various kinds of disputes involving the visitors, especially if the number of these disputes became very large?
12. What emergency changes should we expect for the "duration" in Federal, State, County, and local laws?
13. If we take this job seriously from now, it will require immediate funds to make preparations. Who provides them, and who bears the costs?

"You could see right away that Leroy had done his homework and its impact was paralyzing. My first reaction, inside, was that the CRP was a 'monster' and simply could not work, but I didn't say so. In a weak voice, I told Leroy to prepare a formal briefing to be presented in two days, to invite the top 25 community leaders to attend, and to try to get from the State or Federal governments some more information which would be responsive to the items on his list; especially to find out if there is anyone who *knows* how these matters are to be handled and to find out how soon we could talk to him."

Two weeks after Mayor Smitty first confronted the problems facing his city, "John Waters" had his baptism in the cold shower of reality engulfing residents in the larger "high-risk" city.

Responsibilities Appear Overwhelming

"I remember the day that I first felt terror," Waters said. "It was on July 8 when I learned that the Soviets had taken West Berlin and that our aircraft had struck at the advanced airfields in Europe. That evening the responsibility of having a wife and four children seemed like an overwhelming burden, for the very first time, I suddenly knew that I was nearly helpless to protect them from that most awesome possibility—a nuclear bombing. I was frightened and for awhile felt paralyzed, as if my whole world had collapsed. I tried not to show my fear but my face felt stiff—almost leathery—and Joan knew I was very upset.

"Up to that day I had believed that a nuclear war was impossible. Suddenly I 'knew' I had been wrong—and stupid. If I had believed earlier that it was even a small possibility I might have at least learned what my options were; perhaps we would by now be in a safe place or ready to go there. Now it was too late. A week earlier, on July 1, I had even signed a petition protesting civil defense activities—although a bit reluctantly, I recall. On July 8, there was panic in the city. The TV news estimated that at least 10 percent of the population with a better place to go had left the city and that others were getting ready to leave. There were queues at every food market, service station, hardware store, and bank. Some people waited in line for

the whole night. Joan stared at me most of that evening with tears in her eyes.

"The rest of July was really strange. Everything was abnormal. Except for the war in Europe—and even that often seemed far away—there was only one topic of real interest to me and nearly all of my friends and relatives—that was the potential of *surviving,* if a nuclear attack should come. We all became very, very busy all of the time. The two eldest children 14 and 16 no longer went to school. The younger ones 9 and 11 did, but only because it was more efficient that way. All the high schools had closed for the duration on July 10 except for special programs related to civil defense education. We were ignorant and needed that kind of education, fast! I remembered and understood that old saying: 'There is nothing like the threat of being hanged in the afternoon to clear a man's mind in the morning.' It applied to me.

Too Busy To Panic

"During the several days following July 8 the panic abated. For one thing we were just too busy: learning, organizing, buying, preparing, debating, etc., to sustain a panic. For another, as we made some progress we gained some hope. For example, as the days passed we began to understand that the government's CRP could become a reality. On July 12, one of our neighbors, John Hawkins, had visited Fremont County, our relocation area under CRP, and then told us that a complementary beehive of activity existed there; that the Fremont people were struggling with the problems of getting ready not only to protect themselves but to assist us if we were ordered to evacuate. It was reassuring just to know that someone would expect us if we relocated. As time went by, my confidence grew because I saw things happening. Despite the earlier 'raids' on the food markets we soon learned that enough food for more than six months was available in the country and was being moved into protected locations. At work (I am a computer sales engineer) at least half of my time was being devoted to the protection of the company's equipment and other assets, and to the quickly changing relationship of the company's products and services to military needs and civil defense. After July 8, the company was no longer viewed primarily as a money-making enterprise. Instead, we saw it as an enterprise in which the vital functions had to be kept alive and its vital assets protected for the good of everyone. . . .

"I mention this to illustrate an attitude which developed in all of the business firms with which I came into contact. Never have I seen the people of this city so involved, so efficient, and so cooperative. No one else that I knew remembered having witnessed this phenomenon either. . . .

"When Hamburg fell during the last week in July, almost everyone knew that the CRP would soon be implemented. People began loading up their autos and making other last-day preparations in anticipation of the official signal to move out. It was all so obvious and we were ready when the signal came on August 1."

On July 30, Mayor Smitty paused to catch his breath after weeks of intensive planning and preparations for his small city to serve as a host area for 60,000 evacuees.

Progress in the Reception Area

"In retrospect, it is hard to believe how much has happened in the last five weeks," the mayor reflected. "The CRP committee accepted and responded to its responsibilities and has accomplished what seemed impossible then. One thing about being in a war—it clears one's mind about what is important. I don't know of a single institution that has not pitched in to help prepare for the 60,000 visitors, if they come. As a matter of fact, we have about 7 or 8,000 of them now, mostly friends and relatives who are afraid to stay in the big cities. I don't blame them.

"Personally, what pleases me most is the food situation. We have enough sources of food lined up now that we can, in one day, I am told, truck in enough wheat and corn to last for three months. Even all of the truck drivers have been alerted. And this is on top of about a 1½-month supply consisting of ordinary groceries plus some special loads of soybeans, dried milk, and flour that have been accumulated. In addition, the evacuees, I am told, will bring as much food as they can carry in their cars when they arrive. I will always remember how stunned we all were at Leroy's briefing. It all seemed so hopeless then. . . .

"Of course, the Federal government is always too slow. But I give a lot of credit to those who thought up and pushed through the idea of encouraging local food stockpiling with Federal financing. Instead of the major food grains resting in faraway farms or in grain elevators, much of it has already been moved into thousands of locations in accordance with the expected relocated population, if CRP is ever used. It seemed to be so easily done, too. The special select committee of farmers and food processors, with emergency authority, were able, within two weeks, to tell the county authorities to place their orders, and the trains and trucks rolled it out in the next two weeks. Barely believable even now.

Action and Cooperation Grow

"Our CRP host committees now have about 1,200 active people. They tell me, for example, that if fallout protection is ever needed, the chances are that there can be good protection arranged for everyone in *one* day—barring, of course, a sudden surprise attack before work begins. Existing facilities plus 6 hours of hard work by all men, 15 to 50, will be enough to do the job. If we have more time we will get even better protection or less crowding or both. Also, the earlier concern about appropriate payments for costs or damage still bothers a few people but not on a primary level. A few dollars or a few hundred properly shrinks to trivia when tens of thousands of our finest have given their lives, when our nation itself is at stake. We are all in this together now and nearly everybody I know

feels that way. I have never had a finer feeling for my countrymen.

"We have established good communication with the Colorado Springs CRP headquarters and together we are preparing for economic recovery as well as for survival, in the event of a nuclear attack. We have all been frightened for a long time–it has helped us to work together effectively. The early selfish responses are now forgotten. Every day we learn more and prepare more. We all know that though the killing is now occurring in Germany, next week it could be here."

The Evacuation Starts

On August 1, "John Waters" and his family were directed to leave their home city and proceed to a town some 100 miles distant where authorities felt people would be safe from the direct effects of a nuclear attack (they were not out of potential reach of fallout, however). They found their transit by the family auto surprisingly uncomplicated. Within three hours, they had arrived at the host area, and a half hour later had completed registration at the reception center, a local school.

Waters noted that the urban refugees "were billeted in churches, schools, auditoriums, and other buildings with available space. . . . The important matters were that everyone should obtain a place to sleep, food, at least minimum services, and an opportunity to participate in the survival activities.

" . . . We now were a part of an SG (shelter group). Each SG had roughly 100 people and a temporary leader; later we would make our own 'political' arrangements. The SGs were to be 'cells' of the new society for the duration of our stay. Each cell was composed of about 40 percent local citizens and 60 percent refugees. The people assigned to each SG cell were to be responsible for obtaining and improving a fallout shelter for themselves within the limits set by the local planners. . . . The authorities would make available any information that they could on designs, materials, equipment, tools, etc.

"The next evening all members of our SG met and established a preliminary organization with individuals or committees assigned to perform the various tasks related to modifying the interior and exterior of the shelter, the provision of supplies, and the organization of services that would be required during any future stay in the shelter (medical, cooking, sanitation, communications, etc.). After that evening, informal meetings of working groups were arranged at times convenient to the participants. An executive committee would call a general meeting if it were needed."

Preparations for Fallout Shelter

Waters' group selected a building with two stories above the basement for their shelter. "We estimated that the natural fallout protection would be about a factor of 30," he noted. "Our technical committee set about determining methods of improving this to a factor of at least 100 and more if it were feasible. During the next week they developed methods for adding outside and inside shielding, for rapid removal of fallout particles from the roof and from ledges, and for optimum clustering of people and the internal shielding during the first day of radiation exposure. The sum of these approaches was estimated to give an effective protection factor of about 200. Even more could be obtained with additional work which would require shoring up the basement's ceiling to carry added overhead shielding (on the first floor). . . .

"The community life was unusual from the beginning. In the first place most stores, food, hardware, etc., and services such as doctors, dentists, laundries were open at least 16 hours a day (and 24 hours, in some cases), and 7 days a week. Although this usually increased the operational efficiency, the major consideration was space and equipment. Doctors among the refugees shared offices with local doctors, as did dentists. Retailers were able to handle the increased load by the extra daily hours and the weekends. The greater the efficiency of these operations, the more labor would be available for shelter and other preparations as well as for work in the key industrial and commercial firms involved in military requirements, and in stockpiling. Also, the preparations for economic recovery from a nuclear attack, we knew, could never be completely sufficient.

"During the next two weeks, teams within the community formed to develop and implement the best solutions to the potential problems of (1) maintaining a *protracted* stay, if necessary, and (2) preparing to facilitate economic, social, and political recovery if the country was attacked with nuclear weapons. These teams expanded rapidly until nearly everyone in the community belonged to at least one. Through them we began to feel, slowly, a new confidence in the possibility that recovery might be feasible under some circumstances. But there was a lot of work to be done first."

The Tension Mounts

On August 24, after NATO forces had been driven back to the Rhine River, and both sides had fired tactical nuclear weapons on the other's airfields and prime military targets in the war zone, the United States sent a nuclear "ultimatum" to the Soviet Union. Dr. Brown's scenario notes:

"The U.S. 'ultimatum' did not commit the U.S. to a strategic nuclear attack if the U.S.S.R. did not respond properly, but it clearly was a threat of a major escalation which could not be less than terrifying. Few adults slept that night either in the host areas or in the risk areas where 10 to 12 percent of the inhabitants still remained. The Soviet reply probably would be delivered tomorrow. . . ." ■

Here's a digest of news and editorial comment on civil preparedness topics:

THE DANGERS AHEAD—Reports the *AP*: "Nearly 40 countries are expected to have enough plutonium from their nuclear power reactors to make atomic bombs by 1985, President Ford told Congress in an arms control report. . . . He said about 20 countries now have the technical competence and material to design and build nuclear explosives and six have done so. They are the United States, the Soviet Union, China, Britain, France and India." The President reported that "A world of many nuclear weapons states could become extremely unstable and dangerous." . . . In the same arms control report, the President announced that the Soviet Union has begun installing multiple nuclear warheads on intermediate-range missiles arrayed against U.S. allies in Western Europe. The *AP* account notes that this is the "first public disclosure that in addition to installing MIRV's on intercontinental ballistic missiles, the Russians are also equipping shorter range weapons with them." . . . The *UPI* quotes an "administration arms specialist" as saying that the new deployment "cannot help but complicate the strategic arms limitation talks," which are already plagued by the problems of the Backfire bomber and cruise missiles. . . . The *New York Times* reported that the Federal Preparedness Agency has been working for 18 months on a peacetime nuclear disaster plan which might be used to cope with a serious accident at one of the Nation's 58 nuclear reactors "or by an explosion of a homemade atomic bomb by a terrorist group." A draft FPA report emphasizes that both government and private owners of nuclear power are taking precautions to prevent such emergencies. The plan includes such other emergencies as theft of nuclear weapons or nuclear materials, the takeover by terrorists of a nuclear facility, or the accidental or unauthorized launch of a nuclear weapon. The plan will delineate the responsibilities of 32 Federal agencies for preparedness for such crises.

THE BALANCE OF POWER—*UPI* Pentagon correspondent John Milne writes: "The belief is growing among a few Pentagon insiders that the Soviet Union has improved its civil defense capabilities to the point where it could emerge from a nuclear war with relatively little damage.

"Defense sources suggest that Russian civil defense . . . could cut Soviet casualties to about 10 million people—less than the number who died in the purges of the 1950s," Milne continues. He says the "disparity in civil defense readiness between the U.S. and the U.S.S.R. is used as an argument for increased accuracy of U.S. missiles, but a Pentagon spokesman said last week there is no intelligence data to back up that argument." However, Milne notes that Pentagon research Director Malcom Currie, in a February 26 press conference, alluded to the substantial hardening of Soviet industrial facilities. "They're postured to survive a war as an industrial power," Currie said. And he suggested the accuracy of U.S. nuclear weapons should be improved to permit direct and damaging strikes on hardened facilities. . . . Paul Nitze expressed disagreement with this, however, in an article in *Foreign Affairs* magazine for July 1976. He writes that "a reasonable number of very large single-warhead weapons, not necessarily of high accuracy, which could be launched on assured warning of attack, to ground burst on the Soviet Union with maximum fallout effect, would be much more devastating against population and industry and much more difficult for civil defense measures to protect against than the larger number of smaller but more accurate weapons our advanced technology makes possible." This is only true, Nitze says, if one assumes that the U.S. response to a Soviet counterforce attack should be an attack on Soviet population and industry. The concept of "limited" nuclear warfare, Nitze argues, is designed to get away from such a "high-risk doomsday" strategy.

COMMENT AND OPINION—The publication *Strategic Review* editorializes: "Starting with the strategic premise that a nuclear war can be won and that the Soviet Union could survive a nuclear exchange the Soviets . . . have systematically constructed shelters for the entire military chain of command and control—hundreds of bunkers, command posts and communications facilities hardened to withstand the severest of nuclear attacks . . . have quietly dispersed their essential defense industrial plants . . . and (taken) extensive measures to protect such elements of the urban population as the Soviet leadership deems essential to survive.

"The question now at hand is whether in fact the United States has a credible deterrent, that is, a strategic retaliatory capability to inflict such punishment on leadership, military command, defense plants, urban production centers and Soviet military forces at large as to dissuade a Soviet war

initiative." The editorialist concludes that a "new public concensus on the nature and seriousness of the threat is urgently needed as the basis for prompt action to cope with that threat in the dwindling time available to us." . . . The same publication, in a foreword to an article on the SALT negotiations, says that "it is clear that the Soviet Union does not intend to let itself be bound very stringently by arms limitations agreements, but intends to forge ruthlessly ahead with its military buildup. We have reached a crucial point in the timing of an American response to Soviet strategic programs." . . . An editor of *ARMY* magazine, recounting the progress of Soviet civil defense, comments: "For reasons of strategic parity and maximum survival, U.S. civil defense needs some strong advocates, preferably in Congress, who are willing to take on the politically unrewarding job of convincing the American citizen that inadequate civil defense holds the seeds for national disaster. . . . A recent poll, *ARMY* continues, "showed that the majority of our people want the nation to be the strongest military power in the world. Surely, they can be made to believe, then, that it is folly to slight so vital a line of defense in a world in which millions of American men, women, and children are only minutes and the flick of a switch away from nuclear destruction." The writer blames an apathetic (ill-informed) citizenry and "niggardly" budgets for the decline of civil defense. . . . Also in *ARMY* magazine, Brig. Gen. Lynn D. Smith, USA retired, under the heading, "Our Neglected Civil Defense," calls civil defense today a "dust-covered concept" which in some circles is considered almost "obscene." He warns that civil defense critics are making the vast mistake of placing reliance on enemy intentions rather than on capabilities. General Smith is critical of civil defense budgeting, of the status of military support planning and capability, and of the "posture of planning" which characterizes the current DCPA programming. He cites instances of the loss of local level support for the redirected Federal program and the deterioration of local shelter systems and operational planning. He advocates giving the reserve components of the armed forces major missions "in securing the home base in event of actual or threatened disaster." . . . At the same time, however, an article in the *Washington Post* warns that "military reserve units are facing their biggest manpower crisis since the Vietnam war, because thousands of men are quitting without new ones signing up to take their place." But the story adds that a new, "modified GI bill to give education benefits to young men and women who join the reserves" has the approval of the armed services and is moving toward the adoption process. . . . "Civil Defense Merits Priority," editorializes the *Altoona Mirror.* Critical of cuts in the Federal appropriation which would make it unlikely that civil defense could function at even a minimum level, the editorial says civil defense is a program that "fills a great human need in such crises" as a tragic flood in Idaho and a tornado threat in Omaha. As a result of civil defense preparedness plans, the *Mirror* says, warning was flashed through that city "in time to save untold lives and suffering." Pointing to a "massive" Russian civil defense effort and China's extensive shelter program, the *Mirror* asks: "If the Reds are preparing, why aren't we?"

CONGRESSIONAL HEARING—The *AP* and *UPI* wire services closely covered the hearing on the status of U.S. civil defense conducted by the Joint Congressional Committee on Defense Production and ordered by Committee Chairman, Senator William Proxmire of Wisconsin. Nicholas Dainloff of *UPI* wrote: "Fred Shafer of the General Accounting Office said that in the event of an attack 'Citizens can count on either evacuating to outlying areas where they may have to build their own shelters with soil, or going to the nearest (public) shelter which may not be marked, stocked, or equipped with sanitation facilities.'

"Shafer told the Joint Committee . . . that the Soviet Union annually spends about $1 billion per year on civil defense preparations in the event of a U.S. attack.

"Sen. Proxmire . . . said in contrast that 'the United States Federal figure (expenditures for emergency preparedness) has fluctuated between $70-$200 million annually.'

"Sen. John Tower, R-Texas," Daniloff writes, "warned that if the Soviets ever detect that as we seek to reduce tensions, we also reduce our ability to withstand nuclear attacks, they will even more boldly challenge United States interests." . . . The *AP*, based on testimony by Fred Shafer, director of logistics and communications for the General Accounting Office of Congress, reported that "The United States has virtually abandoned the concept of protecting life and property from nuclear attack. . . . Civil defense objectives now concentrate on postattack survival and plans very widely from State to State." . . . *UPI* reports that "The chief of the Defense Civil Preparedness Agency acknowledged today the Pentagon has not yet completed evacuation plans in case of nuclear attack and has marked only 188,000 shelters around the country.

"But John Davis (DCPA Director) said national civil defense planning is 'sound concept' and has made significant progress in helping State and local authorities improve their disaster readiness.

"In testimony prepared for the Joint Committee on Defense Production, Davis said his agency has established a national warning system to spread word of attack to 1,200 warning points across the Nation, and has distributed nearly 200,000 monitoring sets to check fallout (radiation)," *UPI* reported. – **Joseph V. Quinn.**

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America's Electrical Lifelines

Part II / Nuclear War: A Soviet Option

Beneath the Surface
Cheaper, Safer, More Efficient Structures

PART TWO

NUCLEAR WAR: A SOVIET OPTION

This is the second half of a presentation made by O. C. Boileau, President of the Boeing Aerospace Company, at a Seminar on Technology and International Security, sponsored by Harvard University and the Massachusetts Institute of Technology. The first half of Mr. Boileau's presentation was published in the Fall 1976 edition of FORESIGHT.

By O. C. BOILEAU
President
Boeing Aerospace Company
Seattle, Washington

I want to go into a few details of the Soviet civil defense program to illustrate the thoroughness with which it has been conceived. I believe you will see its implications for the future strategic balance between the powers.

Back when we were debating the antiballistic missile in this country several years ago, it was generally recognized that the effect of massive ABM deployments would be to undermine the stability of the strategic relationship between the two countries. If you had a first-class arsenal of ABMs, you might well decide that you could afford to fire the first salvo of ICBMs because you could shoot down most of the other guy's missiles when he fired back. Neither nation wanted to risk having the other get into this tempting position.

A Tool for Nuclear Blackmail

Well, the Soviet civil defense program threatens to destabilize the strategic relationship for the same reasons. When it's fully in place, Russia may well feel that she can absorb – at a limited cost – any retaliatory strike we can throw at her. Or even a first strike, if the U.S. has not by then totally renounced the use of a first strike regardless of circumstances. In any event, the net effect of a broad, in-place civil defense program is to transform strategic superiority into a tool useful for nuclear blackmail – or for winning a nuclear war.

Of course there are people who suggest that Soviet civil defense is mostly just a paper program. At one time Congressman Les Aspin called it a mere schoolchild exercise. Well, he's at least partly right. In 1975, the Soviet government had 23 million of its young folks out in the countryside frolicking through a massive exercise officially described as "military-sports games." The program featured such Olympic events as survival training, identification of contaminated areas, and learning how to go around or through such areas in accordance with radiation safety rules.

If this Russia civil defense program is really kid stuff, there's a lot of Soviet brass in its second childhood. The permanent, full-time staff of the civil defense organization now numbers 72,000, and a major portion of them are military. The CD commanders of the 15 Soviet republics are major generals or lieutenant generals. Active-duty officers command the approximately 120 oblasts or third-level government centers. And in time of crisis, this permanent staff would be augmented by the Soviet's police force of half-a-million.

I said I would give you some details of this Russian civil defense program, so maybe I had better start. A lot of them are contained in the Soviet's official civil defense manuals, which are pretty impressive documents. We have some of them at Boeing. Incidentally, they're used as textbooks at all institutions of higher learning within the USSR, which may have led Congressman Aspin to his conclusion.

Civil defense preparation in Russia begins with urban planning. Like our urban planners, the Russians believe in lots of open space – but for different reasons. Their guidelines are aimed at the reduction of building density to improve the chances of survivability. They call for green belts and wide thoroughfares to serve as firebreaks and to permit the clearing of radiation-free passages after an attack.

Soviets Plan To Leave Town

U.S. calculations of Soviet fatalities, if we hit them all-out, are based on the assumption that Russian citizens will be in their cities at the time. This is not the Soviet plan. They intend to evacuate and disperse their population prior to the onset of hostilities. This implies, of course, that the

Soviet government will have a pretty good idea of when the hostilities are likely to begin.

We've laid some plans for evacuation of American cities, too. The air-raid sirens will howl, and presumably everyone will run out and jump into his car. If you're at work and your wife is at home, without a car, what will *you* do? And you can imagine what is likely to happen in a city like Boston. One fender-bender, and the traffic backs up for 17 miles.

The Russians have a different plan. They intend to provide an urban assembly area for each two to three thousand urban dwellers. These are permanently staffed. When an evacuation is ordered, a staffer will go to each residence or place of business and hand each individual an evacuation certificate – in triplicate. One copy goes to the police department, which is responsible for making sure the people move out at the appointed time. Another is to be returned to the assembly center for use in processing people out to the evacuation areas. Vehicle convoys and, in some cases, trains will be provided. Some of the able-bodied will be formed into marching brigades.

The evacuation areas are located on collective farms. The farmer's responsibilities are spelled out on planning sheets to be executed by every collective farmer. He's given the number, and even the names, of people he's to receive. They already will have been assigned to work brigades. Some of these groups will go right to work building simple shelters, which are already designed. It takes about 11 hours to construct a shelter which will hold ten people, and it will have a blast resistance of 30 to 50 pounds per square inch and a radiation protection factor of about 1,000.

I'm aware that there is disagreement over whether an evacuation of Soviet cities would work according to plan. Maybe it wouldn't, but I'm sure they'd get their cities evacuated anyway. If their government simply told everyone to walk for one day and then dig a hole, the percentage of casualties would not be significantly higher than the Soviet estimate.

Strategy of Industrial Defense

The Soviet also has a multi-layered strategy to limit the damage to its industrial facilities. The first layer is pretty chilling – it calls for holding the U.S. population hostage to deter us from retaliating against Soviet industry. The second layer is to disburse its industry by building new plants in small and medium-sized towns. The third layer is to harden industrial equipment to protect it from nuclear effects. The final hedge is to hold in reserve enough military capability that the Soviet can move into neighboring states and take over their industry.

U.S. estimates of the industrial damage our missiles could inflict are based on the amount of industrial roof space which would be destroyed. Interestingly enough, Soviet plans show little attempt to protect roof space. But within the buildings, they have worked out ways to protect machinery through the use of permanent protective structures, enclosures, hoods and housings, canopies, and sandbags.

Now all this may sound like the Russians are simply whistling in a graveyard. We've come to think that the arrival of a nuclear warhead on the scene means total devastation. Well, a few months ago Boeing conducted a study intended to estimate the effectiveness of these Soviet protective measures applied to a typical industrial area. This study assumed that a nuclear exchange between strategic forces already had taken place. The U.S. already has fired its heaviest shots at the Soviet's hardened missile sites, and all we have left are our smaller warheads like the Poseidon and Trident.

Machinery "Survives" in Boeing Study

We used the Seattle-Tacoma area as our laboratory for this study. We worked out the application of these Soviet protective measures to its industrial plants, large and small, and then we calculated the damage that would be done by these smaller warheads. The results showed that a lot of roofs would be blown off, but *more than 50 percent* of the industrial equipment in primary target areas would survive. The supporting industry around them would do even better. Buildings would suffer extensive damage, but much of the equipment inside them would remain in working condition. Among the survivors would be three out of four blast furnaces, three-fourths of the foundries, 90 percent of the machine shops, 80 percent of the steel fabrication facilities, and 80 percent of aircraft-related industries.

Of course the protective devices we employed in our study exist only on paper. I don't pretend to know how many of them exist, in *fact*, in the industrial plants of Russia. As with most things in Russia, we Americans don't know as much as we'd like to. But we do know a few things.

We know, for example, that the Soviet has been working on its civil defense program a long time. And we know that the pace has accelerated since the signing of the ABM treaty, a fact which may in itself be significant. Within a few months after signing that treaty, the Soviet named Colonel-General Altunin as Chief of Civil Defense and Deputy Minister of Defense. Since then, official Soviet sources have listed Civil Defense Troops on a par with the other five Soviet military services, including the Strategic Rocket Troops. And in a book he wrote last year, Soviet Minister of Defense Marshal Grechko asserted that civil defense has now become a matter of strategic significance. He is saying, in other words, that it is important to the strategic balance.

Soviet CD Training Expanded

We know, too, that the Soviet is actively pursuing the training of its population in protective measures. In 1973, a new compulsory civil defense program added 20 hours of training to the basic 21-hour program in effect since 1967. Students in the second, fifth, and ninth grades, as well as those in the institutions of higher learning, now have civil defense in their curriculum. In the 1972-73 time period,

NUCLEAR WAR: A Soviet Option

the Soviets constructed model villages for use in civil defense training. This training includes practice loading for evacuation, construction of expedient radiation shelters, firefighting, rescue, medical aid, decontamination, and reconstruction.

As early as 1972, Russia was testing various means of transporting evacuees. Motor convoy movements were rehearsed in Leningrad. In Magnitogorsk, street cars were tested for factory evacuation. Large refrigeration ships were tested for evacuating the population of Sevastopol, and river boats were used at Omsk.

Civil administrative authorities have been provided with hardened command facilities to ensure survival of political control after attack. Through massive summer exercises, the Soviets are developing a cadre of trained people with the skills that will be needed in evacuation areas. The organization which provides this cadre now has about 10 *million* members.

Russia Disperses New Plants

There is evidence, too, that about three-quarters of the Soviet industrial plants built within the last decade have been placed in outlaying towns. Scientific centers also have been located away from large urban areas. Duplicate facilities have been built for some critical industries, ready for urban evacuees to step in and start them up. We know the Russians have constructed some underground complexes, but we don't know how many.

According to our government's estimates, the Soviets are spending about one billion dollars a year on civil defense. Put all these factors together, and the evidence seems clear: Russia is working systematically to bring all the elements of its civil defense plan into being.

Why do they need all this protection – at the very time they're moving into a position of nuclear superiority which should assure them that the U.S. will not dare, under any circumstances, to initiate a nuclear exchange?

To summarize quickly, it seems to me we have this kind of situation: We have the Soviet Union driving hard to acquire the capability for knocking out most of America's strategic forces. At the same time, it seems to be driving equally hard to protect itself from the consequences of such an attack.

This does not necessarily mean that the Soviet's long-range strategy calls for nuclear war. The men in the Kremlin may simply be seeking to neutralize America's nuclear power. If they can accomplish this, they may feel they can pursue their objectives by other means – and with impunity. Recently they seem to have been doing quite well, without firing a shot.

I suppose each of us has his own opinion on what these Soviet objectives are. Does it simply want to extend its influence throughout the world? Does it want to become the dominant power on the world scene? Has it reverted to old-fashioned imperialism? Or is it still pursuing the goal of a universal communist society?

One Possibility: A Food Shortage

Some people have suggested one other eventuality that might bring the Soviet to use the power she is acquiring. That is, very simple, to ensure the adequacy of her food supplies.

As you know, Russia has lately been experiencing crop failures that have forced her to make massive grain purchases abroad. We tend to place much of the blame on her system of collective farming, but the Soviets say bad weather has been the decisive factor.

Coming from Seattle, I think I know something about *rain*. Beyond this, I claim no expertise on the subject of weather. But there *are* experts who say there's a climatic trend developing which may well affect crop production in part of the Northern Hemisphere. If these authorities are right, we may see Russia's crop production going from bad to worse in the years ahead.

These climatologists tell us the mean temperature in the Northern Hemisphere has been declining since the 1940s. It hasn't dropped enough yet to affect the market for long-john underwear, but it apparently doesn't take much of a drop to affect the market for crops. We're told that a decline of only one degree centigrade will translate into a 27 percent reduction in agricultural yields at northern latitudes, which include much of Asia, Eastern Europe, and, of course, Russia.

Who Would Get U.S. Food?

I don't know that anyone is predicting the imminent arrival of another Ice Age, though a Rand Corporation study last year said that "recent climatic trends and the lessons of history make the *little* ice age conditions a promising scenario for a future climatic state." In any event, if Northern Hemisphere temperatures do continue to decline, the United States may be confronted with this choice: Do we choose to feed our allies in Europe and Japan, or our adversaries in the Eastern bloc?

If we choose to feed our allies, we might then find Russia sorely tempted to employ its nuclear superiority. I know of no case in history when a nation with superior military power permitted itself to starve while another nation sat down to a full dinner table.

Whatever Russia is after, now or in the future, obviously the United States is likely to constitute the one big roadblock in the way. Like Avis, the Soviet has been number two for a long while. It's trying harder, but with more tangible results than Avis.

The Western colonies have disappeared, as communist doctrine predicted, and a growing number of them are now in the Marxist camp. Russia has about two-and-a-half times as many men in uniform as the United States. It has enough spare tanks and SAMs and fighter planes to fill the order of any Third or Fourth World dictator who wants them. And from three rowboats and a leaky sloop, it has come all the way to a Navy with more ships, and newer ships, than ours. Our Sixth Fleet in the Mediterranean has been neutralized, and Russian naval power can now support its objectives anywhere in the world.

Recently we've seen growing evidence that, while the Soviet may be short on wheat, it's certainly feeling its oats. We've seen Angola. And now we see Russian arms, and allegedly Cuban soldiers, pouring into a Marxist Mozambique which has proclaimed a state of war with Rhodesia. We see a similar situation shaping up on the Algerian-Moroccan border, and we see Israel fenced in by growing stacks of Soviet-furnished weapons.

But the subject I'm supposed to be addressing is *strategic* power. What's its role in all this? A few minutes ago I suggested that the Soviet may simply be trying to neutralize U.S. strategic power. Russia's own nuclear capability is of course the big gun – the big threat – that stands behind the infantrymen and the tanks in Mozambique, the Arab states, and the Warsaw Pact forces. If the Russian nuclear gun is clearly of larger caliber than ours, then isn't it likely that the tactical forces of Russia's allies can move – perhaps with impunity, but at least without overt interference from what is left of the Free World?

All of this has been taking place since the Cold War ended. I'm sure it *has* ended, for a while back one of our Seattle television stations put on a very learned discussion proclaiming its termination. So now we have the more comforting term of Detente. Of course President Ford has exorcised the word from his vocabulary, but Brezhnev still likes it fine. At the recent Communist Party Congress, he said: "We make no secret of the fact that we see Detente as the way to create more favorable conditions for peaceful socialist and communist construction."

I'm not sure what he meant by the word "peaceful." I guess he meant that Russia can get what it wants while remaining at peace. All the shooting is done by Cubans and black men and maybe Arabs – with Russian weapons.

The Danger of Dozing

But this can be a dangerous game. John Kennedy once wrote a book called "Why England Slept," which recalled the step-by-step march that led to World War II. When Hitler set out on that road, England and France could have deterred him. Instead, they elected to do nothing while the Rhineland, Austria, and Czechoslovakia disappeared. Success bred success and led, finally, to miscalculation. When he invaded Poland, I'm sure Hitler thought he had England and France bluffed out of this hand, too. After all, they had sat out the entire game up till then.

We have sat out the war in Angola, which was fought under the guise of a civil war. We probably would sit out an Algerian-Morocco war, and an invasion of Rhodesia, and perhaps we should. The communists are smarter than Hitler and, so far, more patient too. If they achieve control of places like Italy and Spain, it will probably be through the Communist Party and its allies already inside the gates. They tried in Portugal last year, and came very close to succeeding.

Of course, it's difficult to see how the United States could use its military muscle in situations like these. But there are other kinds of situations. Suppose the Soviet should intervene directly in an Israeli-Arab war? Is this the point at which the United States, including the Congress, would decide that our national interest was at stake? And if so, what would we have for options?

James Schlesinger recently pointed out that the only way to have *non-nuclear* options is "to maintain effective general-purpose forces and a stalwart conventional capability." Right now, if it came to a face-to-face confrontation with the Soviet, I am afraid our conventional forces are outmanned and outgunned. (That's my comment, not Schlesinger's.)

In such a situation, we might be left with only our nuclear deterrent. And when that time comes – if it comes – and we are faced with Soviet nuclear superiority, then we have no deterrent at all.

Suppose you were the President of the United States and you picked up the hot line and took a phone call from Moscow like the hypothetical one I suggested earlier (in the last edition of FORESIGHT). Suppose the voice on the other end told you the Soviet was evacuating its cities. You know their industrial machinery is pretty well protected, and ours isn't. We are sitting here naked.

What would *you* do?

A Summary – and One More Word

In summary, I'd like to re-emphasize that I have tried here only to raise some questions. I don't pretend to have the answers. As background for the questions, I've noted that there is a great deal of evidence to indicate that the Soviet Union is moving toward clear superiority in nuclear power. There is evidence that she is constructing a civil defense apparatus as a strategic companion to this power. I've asked you to consider the possibility that the Soviet may someday be tempted to use such superiority, either as a weapon or as a deterrent to prevent the United States from acting in its national interest.

I appreciate the opportunity to share these concerns with you. I hope you will not brush them off simply be-

(concluded on page 6)

viewpoint

Challenge for the Future

By JOHN E. DAVIS / Director / Defense Civil Preparedness Agency

The strength of the American Republic lies in the acceptance of change while maintaining the orderly continuity of government.

New ideas and new approaches are always welcome in meeting the challenges of the Nuclear Age. Civil defense, as an essential element of the total strategic defenses, must continue to benefit from constructive change.

Looking back on nearly eight years of service as Director of the Office of Civil Defense, and later the Defense Civil Preparedness Agency, I have a deep sense of satisfaction. This derives from the personal relationships established during my tenure, and from program accomplishments brought about by many, many people in Federal, State, and local governments, and in the private sector.

I feel civil defense has truly come of age in the past few years, and I have been most fortunate in having had the opportunity to assist in that evolutionary process.

The work has been interesting and rewarding. In a program of this scope and complexity, there are always rough spots. But the support and cooperation extended to me and my staff have more than made up for problems encountered.

The primary need for civil defense, of course, results from the ever-present threat of nuclear attack. It's a danger Man has lived with for some years now – and one not likely to disappear in the foreseeable future.

In a secondary role, the value of applying civil defense capabilities in peacetime disasters is also now recognized by most officials.

Despite accomplishments in meeting the nuclear threat and peacetime dangers, there is continuing need for advancement. Interest generated this past year in defense requirements is encouraging. Compared with the Soviet civil defense program, the U.S. program is weak. We need to correct the imbalance.

This will take intensive work. It will require a strong partnership, particularly of State and local leaders, in an active role with Congress and the new administration.

Early recognition by President-elect Carter of the need for strong civil preparedness could be extremely helpful in advancing favorable attitudes and strong support.

The ultimate effectiveness of U.S. civil preparedness lies in community readiness. The challenges there, as elsewhere, are the continuing development of *professionalism,* and improved management of emergency operating systems.

This new year could be a crucial one for U.S. civil defense. I'm personally convinced of the worth of the program – and that survival of the Nation could well depend on its capabilities.

That's why I implore all concerned to exert even greater effort in the cause of preparedness in the days ahead. ■

NUCLEAR WAR: A SOVIET OPTION *(continued from page 5)*

cause they come from an individual you have categorized as a "hawk." I don't believe in hawks versus doves. I believe all of us want the same thing. All of us want to preserve both the peace and the values that have made this a great Nation. In any event, neither a hawk nor a dove puts its head in the sand. This, presumably, is a trait only of the ostrich. Thus I think that in this seminar you will be objective in your examination of international security. I think it's a matter which calls for broad examination by thinking people everywhere – and what more appropriate place to start than in these two celebrated seedbeds of thought, MIT and Harvard?

Let me leave you with just one more word. It's something Winston Churchill said when World War II was over. He said: "And so, the great democracies triumphed, and were in a position to resume the follies that so nearly cost them their lives."■

Silver Year for CD Council

By DANA CESSNA / DCPA Region Five

One morning late in 1951, George F. Arnold, an enterprising and concerned civil defense director from Columbus, Ohio, sat down with a small group of equally concerned individuals from across the Nation to launch the planning for an organization devoted to the cause of civil defense.

The group proposed calling itself the U.S. Civil Defense Council (USCDC), and elected Arnold as its first president.

Last November, more than 300 delegates of the organization convened in New Orleans to celebrate USCDC's Silver Anniversary and to pay tribute to Arnold and the men who first created this alliance.

Since its inception 25 years ago, USCDC has maintained a broad objective of assisting the Federal Government in promoting civil defense as an effective element of the Nation's defense posture.

Better Liaison Fostered

Through these efforts, USCDC has stressed the establishment of a more effective and better coordinated liaison between local, State, and Federal governments. It has also provided information from local civil defense agencies concerning their common experiences and, in order to improve the professional status of all civil defense agencies, disseminated this information to the members and to the Federal Government.

Additionally, the Council provides local civil defense agencies with an instrument for concerted expression of viewpoint to the Federal Government and to facilitate communications between the Federal Government and local civil defense agencies. The Council also handles liaison assignments among industrial, commercial, and educational organizations and local civil defense organizations.

The Council's original constitution was adopted in 1952 and laid the framework for only three committees. In 1956, the constitution called for 21 committees. Today, there are eight standing committees with eight members representing each of the eight USCDC regional areas.

Over the years, Council officers have worked to improve the image and function of the Nation's civil defense program. Members of the Council serve on various task forces with DCPA in projecting the views of local directors.

Beginning with 37 member cities in 1952, the USCDC has grown to over 2,300 member cities, counties, and towns among its membership. Throughout this time, the Council has remained strong in its practice of allowing only active members who represent their local political subdivision to hold office or vote for officers in the Council.

Each year the Council bestows its "National Security Award" upon a U.S. citizen who has exemplified unselfish and dedicated leadership in support of a strong civil defense program for the Nation. Past recipients of the award have included Senators Hubert Humphrey, John Stennis, and John Pastore, and Congressmen Chet Holifield, F. Edward Hebert, Tom Steed, and Bob Wilson.

Each year the Council also presents two non-voting honorary memberships to those who have contributed to the overall advancement of the Nation's civil defense program. Recipients include Congressional, scientific, and governmental leaders.

Readiness Projects Promoted

As an active entity, USCDC has proposed numerous changes and improvements to laws regarding civil defense, including support to the National Fire Protection Association in its hazard-identification program, and resolutions favoring the medical self-help program, on-site assistance, improvement of the amateur radio frequencies through the Federal Communications Commission, and improvements in the Federal Surplus and Excess Property programs. The Council has also worked for improvement of the local community's eligibility for relief following a disaster, and in support of the shelter and stocking projects, and the National Warning System.

During the past year, USCDC expended extensive effort to alter the attitude of members of Congress regarding the Nation's overall civil defense program, and in hiking the Fiscal Year 1977 DCPA budget. The organization also proved instrumental in promoting the use of civil defense equipment, facilities, maintenance, and personnel and administrative costs for preparedness for natural as well as nuclear disasters.

What is the future of USCDC?

The answer to this question perhaps was best summed up by J. Herbert Simpson, the Council's Executive Secretary and editor of its monthly bulletin.

"Congress knows we're here now," he said. "For the first time since 1954, I believe we've made them realize that civil defense is here to stay and that there is an important role in this country for civil defense, especially in view of the rapid strides the Russians and Chinese have been making in this field. They've finally come to realize that this Nation just can't lie back and continue to be apathetic about this priority."

To bolster this thinking, Simpson said plans are now under way to conduct a one-week trip to Russia, Czechoslovakia, and Holland in 1977 to allow Council members to observe and study the civil defense techniques in these countries. ■

foresight

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John E. Davis
Director

Vincent A. Otto
Assistant Director for Information Services

Donald E. Thomas
Editor

Gerald G. Sovereign, Norman D. VanderPlaats
Art and Design

Correspondence should be addressed to FORESIGHT, Defense Civil Preparedness Agency, The Pentagon, Washington, D.C. 20301.

moving?

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Gulf Hurricane Conference

More than 1,000 persons are expected to attend a three-day Caribbean-Gulf International Hurricane Conference to be held May 23 through May 25 in Biloxi, Mississippi.

Dr. Neil Frank, Director of the National Hurricane Center at Miami, and other officials of the National Weather Service will participate actively in the conference, as will representatives of business and industry, universities, the military, private relief agencies, the mass media, Federal, State, and local governmental agencies, and experts from other countries.

Wade Guice, Director of Civil Defense for Harrison County, Mississippi, and chairman of the steering committee for the conference, said preparedness officials from the United States, Japan, Australia, and the Caribbean area are expected to attend the conference. Details are available by writing to Mr. Guice at Post Office Box 68, Gulfport, Mississippi 39501. ■

recognition

FORT WORTH, TEXAS – Two Forth Worth "hams" have been cited by the American Radio Relay League for outstanding public service during a rash of tornadoes last May 26 that danced across Tarrant, Dallas, and several North Texas counties.

They are E. D. Kuykendall, Jr., and Brian Peters. Both are volunteer members of the Radio Amateur Civil Emergency Services (RACES) Skywarn program of Fort Worth-Tarrant County Civil Defense.

For their emergency service, which involved prompt and accurate reporting of tornado sightings, they were presented the American Radio Relay League "Public Service Award." They and their fellow "hams" also were highly praised by the National Weather Service for their skilled actions during the emergency.

CATTARAUGUS COUNTY, N.Y. – Mrs. Jean Pitchford, staff member with Cattaraugus County Civil Defense, has been awarded the National American Legion Auxiliary Freedom Bell Award and Citation at the National American Legion Convention in Seattle, Washington, for her work in civil defense.

Mrs. Pitchford's outstanding activities in civil defense information and education programs and in working with civil defense volunteers were key factors in her selection for the honor, according to Ms. Elsie Jane Beck, Cattaraugus County Director of Civil Defense. ■

It's becoming a familiar refrain by fire officials: "Those deaths should not have happened."

Home fires occurring during the night are often fatal. But with the development and availability of home smoke detectors, such deaths are even more tragic because, in most cases, they could have been prevented.

Smoke Detectors vs. Heat Detectors

Fire department officials say heat detectors may sound an alarm soon enough to prevent extensive property damage, but shouldn't be relied upon when lives are at stake. In a recent test of smoke and heat detectors by the Minneapolis Fire Department, the first heat detector didn't ring until 2½ minutes after the last smoke detector went off. A spokesman for the National Bureau of Standards recently told a convention of the National Fire Protection Association that one properly installed smoke detector on each level of a home will provide "more than adequate" lifesaving potential in case of fire.

Two Types of Smoke Detectors

Photoelectric – Sounds when smoke scatters a beam of light sealed inside the unit. This detector reacts quicker to smoldering fires, such as furniture ignited by a cigarette.

Ionization – Sounds when smoke interferes with the flow of electric current in the sensor. This detector is more sensitive to quickly flaming fires. Modern synthetic materials used in home furnishings produce fires that flame quickly and often give off poisonous gases.

While the photoelectric smoke alarm is slightly more sensitive to smoldering fires and the ionization smoke detector to flaming fires, the activation time lag between these two types of detectors is only a matter of seconds.

In selecting a home smoke detector you will also have a choice between battery-powered units or those operating on regular house current. Battery-operated units require battery replacement each year at a cost of about $5. Most units use special batteries that have to be ordered, but a trend is developing for manufacturers to use more readily available battery sizes. Units which use house current are cheaper to operate, but there is a slight chance a fire could disrupt power before the alarm sounds.

One additional consideration for those purchasing the photoelectric detector is that the light source in photoelectric detectors burns out and must be replaced anywhere from 3 months to 3 years after purchase. Newer units are expected to use solid state bulbs that could last 20 years.

Price

In the same tests by the Minneapolis Fire Deaprtment, mentioned earlier, it was determined that price does not necessarily reflect value. You can spend more than $100 for a smoke detector and get no more lifesaving protection from it than from units costing one-third as much. A good detector can be purchased in the $30–$50 range. Simply make sure the detector you select carries the Underwriters Laboratory (UL) label. – **Sandra E. Farrell.**

New Fire Safety Competition

Successful programs that educate the public on fire prevention will be recognized with awards totaling some $13,000 every year as part of a new competition launched by the National Fire Protection Association (NFPA).

Entitled the "NFPA Learn Not to Burn Competition . . . An Awards Program to Prevent Fire," it is open to anyone involved in carrying out and communicating fire prevention.

While the competition is divided into three divisions (Municipal; Industrial, Health Care and Educational Institutions; Government and Military), it is designed to provide both the professional and the layman with equal opportunity to compete. A high school student who devises a unique way to teach fire prevention to his class, for example, will have as much chance to win as a fire prevention officer in a large city department.

Entries must be submitted in the form of typewritten reports of actual projects or programs. Reports must not exceed 750 words in length, and may be supported by only a minimal amount of documentation, such as photographs, letters, and news clippings.

Each entry will be judged for originality of ideas, continuity of program, utilization of resources, effectiveness of communication, and evidence of results. Cash awards will be made on a quarterly basis beginning January 1, 1977.

The Learn Not to Burn Competition replaces the 49-year-old annual NFPA Fire Prevention Contest that was geared strictly to entries from various professionals.

For more information on the competition, write: Learn Not to Burn Competition, Public Affairs Division, National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210. ■

By RUSSELL B. CLANAHAN

AMERICA'S ELECTRICAL LIFELINES

The material in this article is based on information supplied by Lori O'Neill, Industrial Mobilization Specialist with the Defense Electric Power Administration, interviews with various electric power industry and Federal Government officials, and printed source materials available industry-wide.

Some things never change. We Americans like it that way, and basic optimists that most of us are, we tend to take things for granted.

Like electric power at the snap of a switch.

And reliable electrical communications.

And most of all, the security and convenience of living in the most powerful and technologically advanced Nation on earth.

These comforting assumptions, and many more, could end in a flash – the flash of a nuclear attack on the United States, producing blast and heat damage, radioactive fallout, and a nuclear-produced electrical impulse called EMP which could knock out key electrical equipment throughout the Nation.

Without proper planning and preparations, this nuclear electrical blow could cripple power and some telecommunications systems in much of the United States – right down to the TV and electrical appliances in your home.

Blast or fire would destroy or damage equipment in or near areas of detonation, radioactive fallout could keep repairmen from venturing outside to fix less damaged facilities, and EMP, or Electromagnetic Pulse, could knock out sensitive components of electrical networks over vast areas far from any detonation.

What is the electric power industry doing to cope with the nuclear threat, and maintain vital service? What agencies are helping to coordinate emergency planning efforts?

Small Agency, Big Job

The key coordinating role is held by the Defense Electric Power Administration (DEPA), a tiny agency in peacetime within the U.S. Department of Interior with a very big wartime mission. Its job is to provide leadership, recruit and train skilled war-emergency personnel, and cross-pollinate essential information within electric companies and cooperatives nationwide to help prepare some 3,500 electric utilities to operate in a nuclear war environment. The agency also monitors major peacetime disasters to coordinate the maintenance or restoration of electrical service to stricken areas.

To do this job, DEPA is organized into nine geographical power areas whose boundaries roughly correspond to the power pools of the continental United States, plus personnel in Hawaii, Alaska, Puerto Rico, and the Virgin Islands. Volunteers in each power area who are regularly employed in the electric power industry also serve as "special Government employees" without compensation. They would become fulltime Federal employees in DEPA if the United States were attacked or if a civil defense or other major emergency were declared by the President.

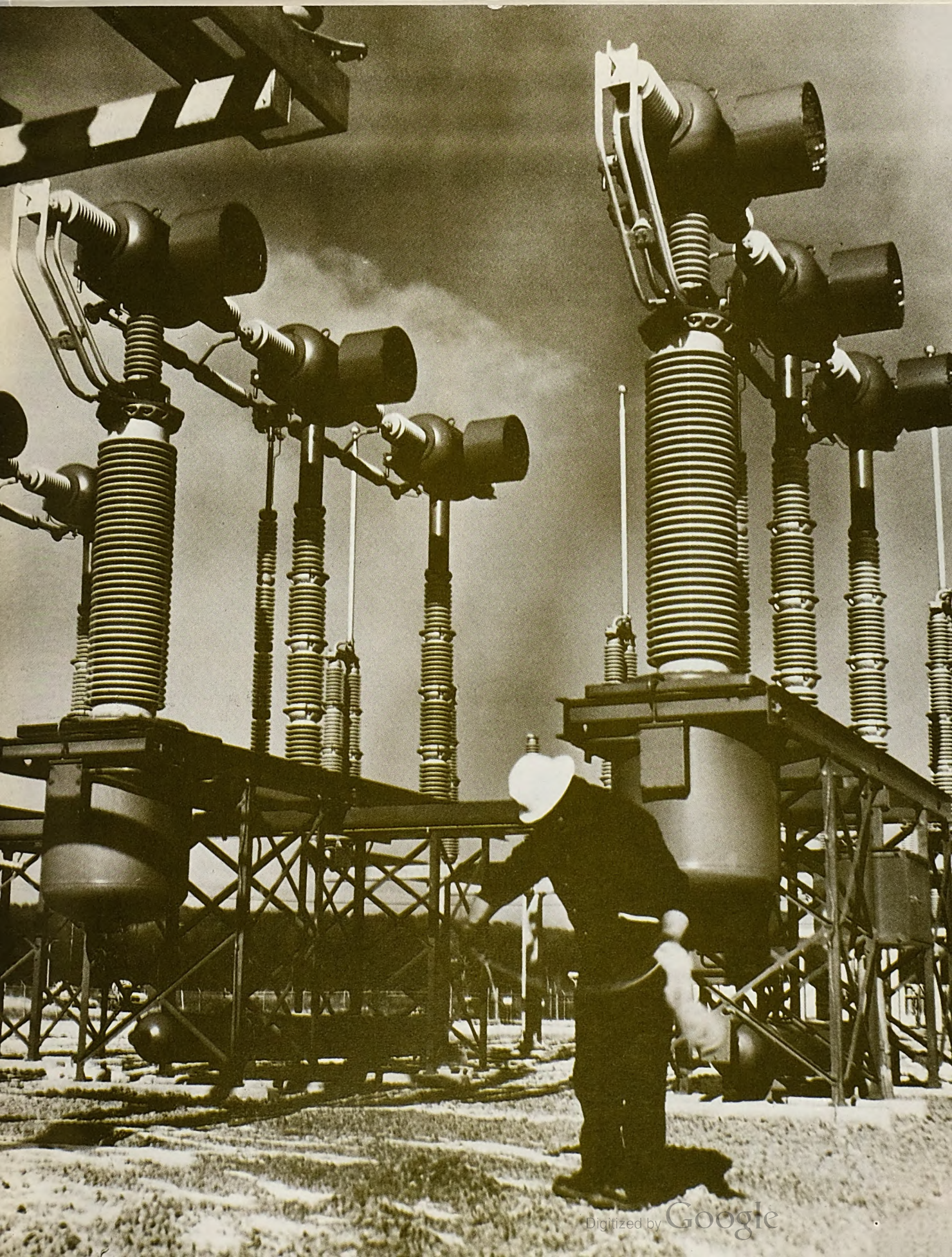
Each power area is headed by a volunteer DEPA Power Area Director and deputy directors. Volunteer Regional Power Liaison Representatives work with the regional offices of the Defense Civil Preparedness Agency and the Federal Preparedness Agency (nuclear and wartime civil preparedness functions), and with regional representatives of the Federal Disaster Assistance Administration (peacetime disaster relief activities). The Director of DEPA appoints State Power Liaison Representatives to work with each State civil emergency organization. Major Utility Representatives are appointed by each Area Director to represent major electric utilities in his power area. Through this network, preparedness activities or power companies and cooperatives and the Federal, State, and local governments are closely coordinated.

Utility Industry Involvement Is Essential

The use of volunteer personnel from electric utilities by DEPA reflects the agency's origin. DEPA was created in 1950 and reactivated in 1959 at the request of the power industry to help it do the preparedness planning to survive a nuclear attack which the utilities recognized they could

GIANT CIRCUIT BREAKERS in Mercer County, Pennsylvania, are typical of the high-voltage equipment whose successful functioning in a nuclear emergency would play a large role in determining whether Electromagnetic Pulse would disrupt America's vital power network.

Photo courtesy Pennsylvania Power Co.



not do by themselves. It also reflects the Federal Government's conviction that it could not operate or rebuild electric systems without the aid of the industry, thus making cooperation a vital necessity.

This close cooperation with government in planning to cope with emergencies is an extension of a longtime power industry tradition and practice of mutual aid to one another. Although the power reliability of the industry as a whole is better than 99 percent, the utilities know that electric power generation – and especially distribution – are peculiarly vulnerable to dangerous weather or other disaster situations. By working closely with governments through DEPA, the utilities make sure their own survival planning is compatible with that of other power companies and with the overall planning of governments. Skills are sharpened, information exchanged, and planning objectives re-examined at special training workshops for electric utility personnel held by DEPA several times each year in various American cities. Federal, State, and local personnel

Hartford Times Photo

SOMETIMES THE LIGHTS GO OUT, as they did in the massive northeastern power failure the night of November 9, 1965. This was a typical home scene during the power failure. A woman sits at a candle-lit table, listening to a battery-powered radio for information.

with emergency preparedness and civil defense assignments usually attend these sessions, and often participate with power personnel in simulated exercises to test decision-making and problem-solving under pressure.

At a policy level, DEPA and the Defense Civil Preparedness Agency have joined in research into the vulnerability of the electric power industry to nuclear weapon effects, and the level of preparedness of the industry to meet the situation. The two agencies have also produced a study entitled *The Prototype Plans for Production and Maintenance of Electric Power in Crisis Relocation.* This study, which deals with DCPA's major Crisis Relocation Planning program to move people out of major target areas to safer locales if nuclear attack threatens, concluded that electric power would be adequate in any such population dispersal.

Built-In Emergency Preparedness

Individual electric utilities vary considerably in the sophistication of their disaster planning and facilities. Most all of them have disaster procedures to cope with the type of emergencies they would normally expect in their service area, though smaller systems usually plan to rely partly on outside help in a big emergency. Larger systems usually have redundant land-line and radio backup control circuits for their key switching facilities, with special communications to the civil defense and public safety elements of the local and State governments in their service areas. Often they have protected and self-sustaining alternate company headquarters at a site remote from well-populated areas. Perimeter security is included at some key facilities such as power control centers and nuclear generating stations. Their personnel are trained to use radiation detection instruments and decontamination procedures in case some radioactive products should escape.

Generally, electric power industry spokesmen believe the electrical capacity of their systems would continue to meet Americans' need for electricity – with some interruptions – even if a nuclear attack should occur. They point out that the same nuclear detonations that knock out parts of their systems would also reduce their electrical load, so remaining capacity would probably be more than adequate. Radioactive fallout would likely delay outside repairs where lines were down or substations knocked out. Where distribution equipment was undamaged, however, switching and use of alternate circuits, such as occurs after storms or other peacetime crises, are believed to be capable of maintaining service.

There is one big "if" in the electric utilities' generally "can-do" view of the nuclear threat. This is EMP.

Widespread Threat of EMP

Electromagnetic Pulse is produced over wide areas when a high-yield nuclear weapon is detonated just outside the atmosphere. (Those detonated within the atmosphere would have an effect over a much more limited area.) The electromagnetic radiation, which is crudely similar to the waves radiated by local lightning or a broadcast station, is radiated downward from the upper atmosphere to the earth's surface. The waves are not considered dangerous to any living thing, and, in fact, represent only about one-millionth of the energy in a nuclear detonation.

Why, then, all the fuss?

First, the EMP waves extend over a far wider area than any other nuclear effects. For example, a nuclear burst 80 kilometers high (49.7 miles) roughly over Omaha, Nebraska, would have a radius of EMP effects extending approximately from Detroit on the east to Salt Lake City on the west. A similar burst 200 kilometers high (124.2 miles) would result in an Electromagnetic Pulse affecting the entire continental United States and far into Canada, Mexico, and out to sea.

Second, the EMP from a high altitude burst would occur and then disappear more quickly than lightning – a tiny fraction of a second. Though it would involve less electrical energy than a single lightning stroke, the EMP would test the weakest components of power systems throughout the United States, and disable the more susceptible parts (unlike lightning, which causes only localized damage). Because it is faster than lightning, EMP might knock out even components protected by some lightning arrestor devices, particularly older types unable to activate themselves fast enough.

Engineers now believe, however, that most lightning arrestors would be able to prevent serious EMP damage to most units of typical power nets. Consequently, power companies are building in additional EMP protection to their generating and distribution networks only when normal replacement of equipment is scheduled. This is because of the cost involved to do otherwise, and the degree of partial protection which exists naturally.

The main EMP problems are in the circuits, computers, and transistorized (solid state) devices used to control the generation and distribution of power in a modern system, and the interchange of power with other companies or cooperatives in a pool. To understand the hazards to such devices, it is necessary to know how EMP works.

EMP normally is induced in power or communications systems via long conductors, such as antennas or overhead power lines which act like antennas. Even such structures as metal guy wires, structural steel building supports, buried pipes and cables, building wiring, power conduits, metal fencing, and railroad tracks can serve as conductors for EMP.

When these conductors are hooked to sensitive power control devices – by design or unintentionally – EMP can produce a split-second power surge far exceeding the design capacity of the devices. Less sophisticated equipment, such as older types using vacuum tubes or electro-mechanical devices, is less affected or completely unaffected by EMP.

Basic Views on EMP Protection

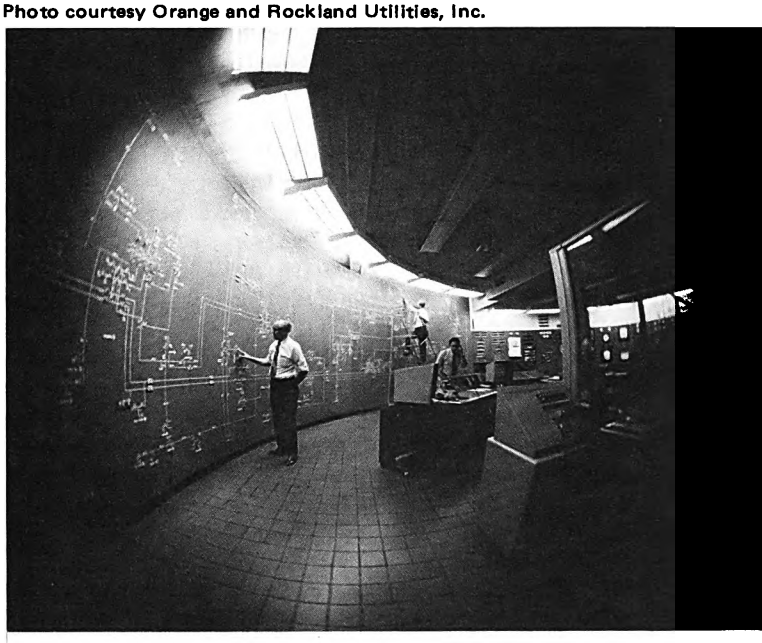
Electric utilities vary considerably in the degree to which they have faced up to EMP. Generally, the following observations can be made, based on talks with utility officials and the staff and contract personnel of DEPA and DCPA:

1. The utilities are doing no retrofitting, which would involve going back and placing EMP protective devices in existing power lines, substations, and similar field facilities. No reliable estimates even exist of the astronomical cost of such a program if it were undertaken on all American power systems.

2. It is generally agreed that the power generating stations are not at serious risk from EMP.

3. Since the transformers on electric poles which step down power voltage for normal household use are not very effective barriers against EMP, it is probable that consumer appliances and industrial equipment might be extensively damaged. This is especially true of delicate motors and solid state devices, such as stereos and televisions (which might also pick up EMP from their outside antennas). If there were enough nuclear attack warning time, disconnecting this equipment from antennas and pulling master switches might save it.

Photo courtesy Orange and Rockland Utilities, Inc.



NERVE CENTER for any electric utility is its energy control center.

4. Electric utilities are becoming very familiar with the EMP threat. The larger companies, especially if they have computer control equipment, are studying or have already installed EMP protective devices in their control circuits. For the most part, however, they rely on their manufacturers of electrical equipment to research and improve its EMP-protective characteristics. Thus, vulnerability to EMP will be only gradually reduced as new equipment is installed.

5. The Defense Communications Agency and the military services have made special provisions to protect their power and telecommunications circuits against EMP, and to provide backup power facilities for strategic facilities.

By BONITA M. OGILVIE / Office of Civil Defense / Franklin County, New York

Northeastern New York, Vermont, and northwestern New Hampshire encompass a rugged, mountainous area. Snow and ice-covered roads in the wintertime can make driving extremely dangerous. Hospitals and rescue squads that are miles apart make the saving of lives of accident victims and the critically ill difficult. But thanks to MAST, the precious time element that is so important in saving lives in an emergency has been decreased.

MAST is an acronym for Military Assistance to Safety and Traffic—a program in which military helicopters speed the ill and injured to distant hospitals.

Started as a pilot program at three Army and two Air Force sites early in 1970, MAST programs are now in operation at 23 military bases in the United States, mostly in southern and western States. The program came to our area in 1974 when a MAST program was approved for the 39th Aerospace Rescue and Recovery Wing at Plattsburgh Air Force Base, New York—the only MAST program in the northeastern part of the Nation.

Military-Civilian Cooperation Essential

Military equipment and trained military personnel are, of course, the main components of any MAST program. But the active support of the civilian communities to be served by a MAST program is extremely important. It's more than that; it's a *requirement* before any MAST program is approved for implementation by the Secretary of Defense—as we learned at our first orientation meeting in 1972, a meeting attended by area doctors, nurses, hospital administrators, ambulance and rescue attendants, and local government leaders, including all local civil defense directors.

After this first meeting, we formed a North Country Committee for the Coordination of Emergency Health Services—a steering committee to prepare the MAST application, lay out a plan of operation, obtain any needed equipment not normally provided by the military to Plattsburgh Air Base, and to work closely with the military in the entire MAST program.

In addition to the hours of work preparing the application to justify a MAST program for our area, members of the steering committee and other dedicated volunteers worked hard to obtain extra equipment needed for civilian missions—equipment not provided by the Defense Department for regular military missions. For example, from local donations we were able to buy a paging system for alerting off-duty MAST crew members of a mission. (The Rescue Detachment at Plattsburgh Air Force Base does not have enough personnel to handle on-base duty around-the-clock; thus the need for a paging system for the alert crews.) The committee also was able to buy a transport isolette for the transportation of critically ill infants, thanks to a generous donation from the Lockformer Foundation.

Equipment Also Is Donated

Not all donations were money. Many were in the form of equipment, such as radios for communications between the helicopters and local State police, rescue squads, and hospitals. Other donations included a Greene Splint System for persons with back or neck injuries; a portable suction unit that can be used for either adults or infants; miscellaneous monitoring equipment for infants; telethermometer for premature infants; cardio beepers; and an ultrasonic blood pressure monitor.

This equipment, valued at approximately $7,500, is owned by the committee and housed with the Air Rescue Detachment.

In addition to the specialized equipment, hospitals in the area cooperated by providing helicopter landing sites near their emergency entrances. The hospitals also were required to sign an agreement stating that, in addition to the helipad, they would provide adequate site identification, especially at night, a wind indicator close to the helipad, adequate fire protection, and security.

The MAST resources available from Plattsburgh Air Force Base include two helicopters, each of which can handle three litter patients and two ambulatory patients in addition to the crew. The helicopters are equipped with a rescue hoist, cargo sling, searchlights, and other features which make them excellent rescue vehicles. They can handle missions within a 100-mile radius of Plattsburgh Air Force Base without refueling.

A MAST helicopter crew normally consists of a pilot, co-pilot, flight mechanic, and a pararescue recovery specialist. The pilots, most of whom served in Southeast Asia, are trained specifically for rescue missions. Flight mechanics are proficient in operating the rescue hoist, deploying smoke-marker devices, and cargo sling hookup. The pararescue recovery specialists are extensively trained in parachuting, scuba diving, mountain climbing in all climatic conditions, and emergency medical treatment. Each pararescue recovery specialist receives well over 600 hours of medical training, and each year receives 160 hours of additional and refresher training to continue his assignment. In addition, pararescue recovery specialists at Plattsburgh Air Force Base receive specialized training in the care of premature infants at Montreal Childrens Hospital in Canada

(a large percentage of the premature infant transfers are to this hospital) and at the Medical Center Hospital of Vermont.

A number of lives have been saved as a result of our MAST program, and many of these involve children. Early this year, for example, a child was born in the Malone, New York, hospital with a disphragmatic hernia and Respiratory Distress Syndrome. Her doctor gave her a one-in-ten chance of living IF she made it to the Neo Natal Intensive Care Unit at Montreal Childrens Hospital. Thanks to our MAST helicopter and crew, the baby was in surgery in Montreal within two hours of birth to correct the problems.

In another transfer from Saranac Lake, the MAST helicopter transported a woman who had had four previous pregnancies with no living children. She was transferred by helicopter in the early stages of labor to the Medical Center Hospital of Vermont for Caesarean Section, where the baby might be born and immediately be put in the High Risk Neo Natal Care Unit for specialized care. After five tries, the parents are very proud of their healthy "rotor baby."

In less than two years of operation, our MAST program at Plattsburgh Air Force Base carried out 184 emergency missions, involving 199 patients. Throughout the United States, the 23 MAST units have flown more than 7,800 emergency missions, involving more than 8,250 patients.

Thousands of Americans owe their lives today to the MAST program—a living example of how military and civilian talents can be combined to help people overcome emergencies. ■

is saving lives

U.S. Army photo

1

NOAA photo by R. Adm. Harley D. Nygren.

Landlubbers and the Tall Ships

By CASPAR M. KASPARIAN / Director
New York Field Office / Defense Civil Preparedness Agency

America's Bicentennial Year is now a segment of history, but one of its outstanding events will always be remembered by those fortunate enough to witness it – the majestic parade of the Tall Ships into New York Harbor and the Hudson River on July 4th.

It was a spectacle never before enacted – and probably never to be repeated: 16 of the world's 20 tall-masted sailing vessels, each some 200 or more feet long, moving into New York Harbor, up the Hudson River, and returning to berth at piers on the New York and New Jersey shores.

A few weeks before the "Operation Sail" event, predictions were that 5 million spectators would converge on the New York and New Jersey shores to see the once-in-a-lifetime sight. The logistical problems of handling the ships were being handled in a thorough and professional manner, based upon nearly 5 years of planning. But what about those millions of *people*? On the New Jersey side, for example, would the crowds result in viewers tumbling down the 100-foot Palisades to injury or death?

2

1 HEADING UP THE HUDSON ahead of two other tall ships, and flanked by a number of small pleasure craft, is the 330-foot three-masted bark, Amerigo Vespucci.

2 WATCHING OVER THE LANDLUBBERS – Keeping track of any people problems are a few of the emergency workers at the Bergen County, New Jersey, command post for "Operation Sail." Standing, left to right, are Inspector Donald Miller of the Bergen County Police, Richard Krane of the New Jersey State First Aid and Rescue Squads, Col. Carl J. Koenig, Coordinator of Bergen County Civil Defense and Disaster Control, and Gene Post, New Jersey Bell Telephone Company Coordinator. Seated in the foreground is Bruce Ohlendorf, Operations Officer for Bergen County Civil Defense and Disaster Control.

3 WITH THE NEW YORK SKYLINE in the background, Spain's 304-foot four-masted topsail schooner Juan Sebastian de Elcano moves up the Hudson River.

NOAA photo by R. Adm. Harley D. Nygren.

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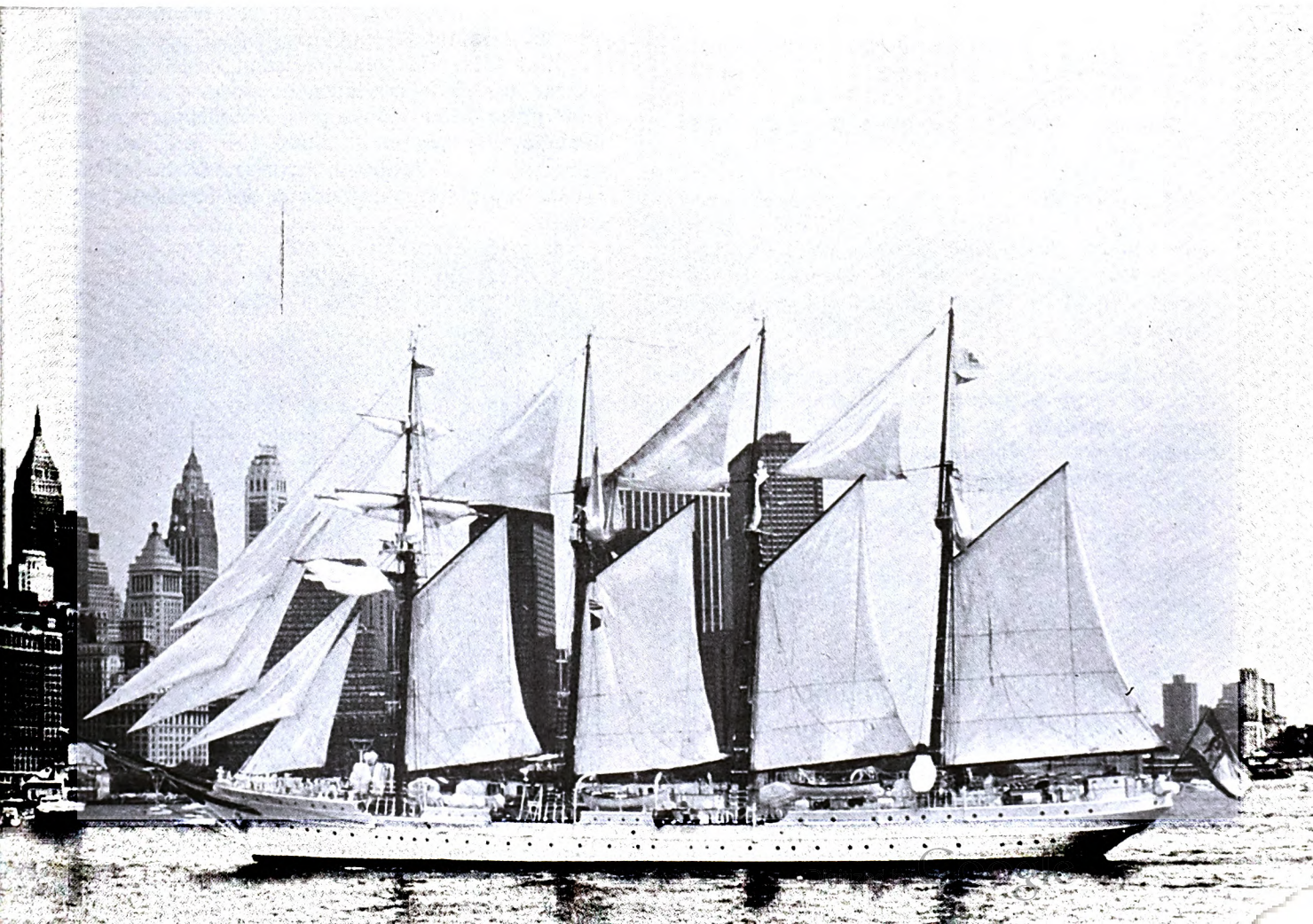


Landlubbers and the Tall Ships

Late-Hour Preparations Start

Three weeks before the event, worried officials began working feverishly to keep the nautical celebrations of America's independence from becoming a public tragedy. And one of those deeply involved in the preparations was Col. Carl J. Koenig, Coordinator of Civil Defense and Disaster Control for Bergen County, New Jersey.

Bergen County is in the northeastern corner of New Jersey and lies directly west of New York City with the Hudson River as its eastern boundry. With a population of approximately one million, the county is one of the principal local jurisdictions in New Jersey and of the New York City metropolitan area. When the Governor of New Jersey designated the State Division of Civil Defense and Disaster Control as responsible for coordinating emergency actions and planning for the crowds that were expected to throng the shorelines of New Jersey during "Operation Sail," attention focused on Bergen County – and on Colonel Koenig.

Colonel Koenig, who joined civil defense in New Jersey 25 years ago following his retirement from Army Ordnance, is a man with a calm, unperturbable, yet dynamic approach to any problem. He knows how to get a job done. And in mid-June, with time at a premium, he set to work developing an operational plan that would tie together the public safety, health and medical, and National Guard forces for the July 4th weekend. The plan he developed for the "landlubber side" of "Operation Sail" covered such critical aspects as:

THE SITUATION – A description of the anticipated crush of 5 million persons to view the Tall Ships, with special attention focused on the Palisades, which are bluffs rising high above the Hudson shoreline on the eastern border of Bergen County. Major anticipated problems along the Palisades, where people were expected to jam all accessible viewing areas, were described.

ASSUMPTIONS – Various anticipated emergencies were enumerated, and emergency resources to respond to those emergencies were described.

PERSONNEL AND RESOURCES – Specific police, fire, communications, ambulance and medical aid resources were identified, and emergency tasks assigned to each.

COMMAND AND CONTROL – The control site was identified as the headquarters of the Palisades Interstate Park in Alpine, New Jersey. The Bergen County Coordinator was scheduled to activate the command post at 7 a.m. on Sunday, July 4th. Communication base stations were to be established at the command post by the New Jersey State Police, Bergen County Police, East Bergen Police, East Bergen Fire Mutual Aid, District 3 of the New Jersey Ambulance and First Aid Squad, Civil Defense Radio Communications, New Jersey National Guard, and the Citizens Band radio network.

OPERATION – Broad operational instructions were included in the plan for the various organizations participating in the emergency response. A medical annex, prepared by the Bergen County Medical Coordinator, provided guidelines for rendering emergency medical assistance.

Special Conferences Held

Following dissemination of the plan, several conferences were held with the Bergen County Police Chiefs Association, the First Aid and Rescue Association, hospital authorities, and various civil defense volunteer groups. In addition, the three major utilities in the area – Public Service Electric and Gas, New Jersey Bell, and the Hackensack Water Company – were invited to participate in the conferences and to provide representation at the command post on July 4th.

On Independence Day, 1976, a total of 13,000 man-hours, nearly half of it volunteer effort, would be expended as a direct result of the Bergen County emergency plan for "Operation Sail."

July 4th dawned bright and clear. The sailing ships paraded up the Hudson River in all their glory. But the 5 million spectators didn't show up. The extensive media coverage given to public officials' warnings about the anticipated crush had its effects. Hundreds of thousands lined the New York and New Jersey shores, but many more stayed home to watch the festivities on television. No major mishaps occurred in Bergen County or in the entire metropolitan area.

Was the work of Colonel Koenig and his many colleagues in preparedness needed on that day? Was it all worth the effort?

"You never know. You just never know," commented a close observer of the New Jersey operation. "But I can tell you one thing: If we hadn't been prepared, the results could have been quite different. I'd rather spend nearly seven man-years of effort getting ready to act – which is what we did in Bergen County – than one second trying to explain too late why we weren't prepared." ■

California Earthquake Safety Campaign

It's sometimes said that Californians will go to great lengths to attract attention for what they're doing. And civil preparedness activities are no exception.

The State's Office of Emergency Services (civil defense) recently retained the services of the world's most famous rabbit, a stuffy duck, a tongue-tied pig, a monosyllabic bird – all created by one talented human voice – and a human pantomime artist for a series of radio and television public service announcements on earthquake safety.

"Whenever you hire Bugs Bunny and his friends to do radio spots about earthquakes, there's bound to be a lot of interest," says Jeff Cohen, Office of Emergency Services (OES) information officer, who worked with Mel Blanc, the voice behind the cartoon creatures, in producing ten 30-second taped messages.

Besides the famous rabbit, the spots feature Daffy Duck, Porky Pig, Roadrunner, and five other characters.

Newspapers, Networks Take Note

The announcement in September by OES that Blanc's voice impressions were going out to nearly 400 radio stations in California sparked stories over both national wire services, photos and articles in the *New York Times*, the *Los Angeles Times*, and extensive national and international radio and TV coverage, including segments on the CBS Evening News and the British Broadcasting Corporation.

The television spots, featuring a Los Angeles mime, Antonin Hodek, also garnered media attention. The four 30-second films are being distributed to 60 California TV stations, including seven Spanish-language stations which will receive a Spanish voice track.

In addition to the State's radio and TV campaign, the major telephone companies in the State – Pacific Telephone and General Telephone – included an earthquake safety brochure, written with the technical help of OES and other State agencies, in their September bills.

Creator of the TV spots was John Hennessy Motion Pictures of South Pasadena, California, producer of the award-winning OES film on earthquakes and other disasters, "Our Active Earth," which Charlton Heston narrated.

The silent mime glides and gallops through the TV films as a voice tells viewers, "If you live in California, sooner or later you'll live through an earthquake. . . . Survival is simple: Keep your head and keep your life."

Emphasis on Basic Safety Actions

Throughout the TV and radio spots, the emphasis is on being prepared, staying calm, and taking essential precautions during and following a quake.

Charles Manfred, California State Director of Emergency Services, said the radio and television announcements were produced as part of an ongoing effort by OES to provide factual and up-to-date earthquake safety advice to the public.

"These radio and TV productions clearly describe what the public should do before, during, and after an earthquake," State Director Manfred said. "With the assistance of broadcasters who keep them on the air, they will provide essential information which could save lives and prevent injuries during a disaster."

At first there were some doubts about using familiar cartoon characters to acquaint the public with the serious subject of earthquake safety, especially in light of the discovery of a large bulge in the earth near Los Angeles and a scientist's prediction that a major quake would occur in the area before April 1977.

But the radio scripts reflect more than just the antics of a wisecracking duck and other characters Mel Blanc has made instantly recognizable to millions of children and adults.

"We even dropped a few of the familiar sayings of the characters, like Sylvester the Cat's 'Sufferin' Succotash,'

(continued on page 29)

California OES photo.

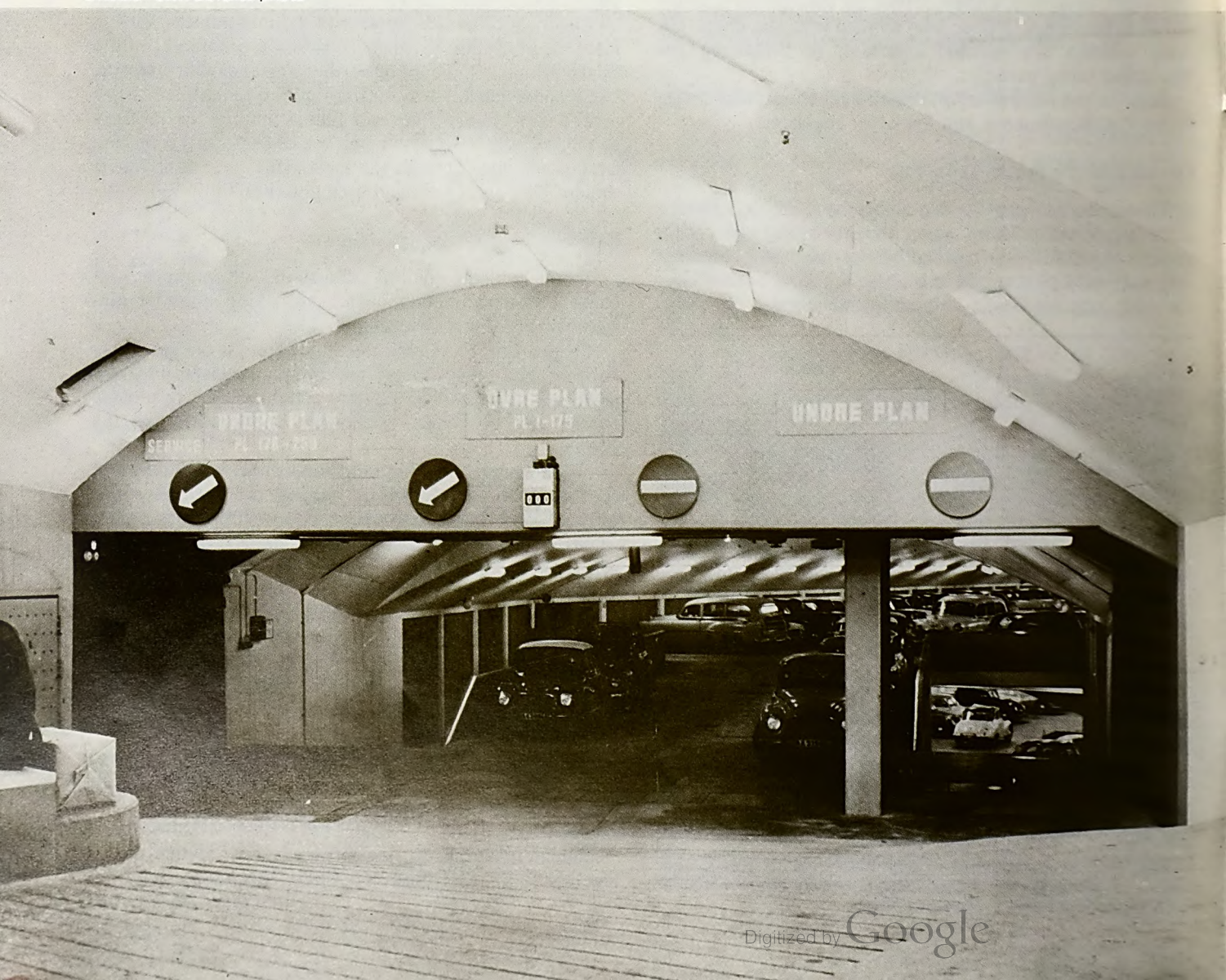
MEL BLANC, famed voice of Bugs Bunny and his friends, tapes a series of public service announcements on earthquake safety for the California Office of Emergency Services.

BENEATH THE SURFACE

Cheaper, Safer, more efficient Structures

By GEORGE N. SISSON / DCPA Research

Swedish Civil Defense photo



I dug my cellar in the side of a hill sloping to the south, where a woodchuck had formerly dug his burrow, down through sumach and blackberry roots, and the lowest stain of vegetation, six feet square by seven deep, to a fine sand where potatoes would not freeze in any winter. The sides were left shelving and not stoned; but the sun having never shone on them, the sand still keeps its place. It was but two hours' work. I took particular pleasure in this breaking of ground, for in almost all latitudes men dig into the earth for an equable temperature.

Henry David Thoreau, *Walden*

High land costs and soaring energy costs have recently spurred an already growing effort to make more use of underground space. The 60,000-square-foot underground Terraset Elementary School, for example, under construction in the planned new community of Reston, Virginia, about 20 miles west of Washington, D.C., will use up to 80 percent less energy than a conventional school of the same size. Several underground schools have been in highly satisfactory operation in the United States for more than 10 years, but the Reston school was specifically designed – complete with solar heating – to combat the energy crisis. Heating and air conditioning in most parts of the United States must be designed to accommodate 100 degrees or more of temperature variation, whereas those systems in the constant-temperature underground environment must accommodate only a 15 to 20 degree range.

Not only does the underground environment (sometimes called subterranea) offer major long-term energy savings, but in some cases the initial cost also is actually less. One architect designed and built his own house underground, an attractive home with the rooms facing a central atrium. He reported the construction cost to be 25 percent less than the same house aboveground, plus the fact that the underground house cut in half the energy consumption of the structure.

Interest Precedes Energy Crisis

Even before the energy crisis, interest was growing in the use of underground space. A national conference was held in 1972 where 85 papers, addressing many aspects of excavation technology, were discussed. A follow-up conference was held in 1974 and again in 1976. A special study in 1974 sponsored by the National Science Foundation and the Engineering Foundation reported that widespread use of underground space could lead to the release of about $60 billion per year to other social and environmental needs. More than just dollar savings, the report states:

" . . . Although urban systems have produced opulence, amenities, and many desirable features, they have also produced poverty, squalor, filth, pollution, congestion, and a host of severe imbalances which reverberate across the entire land. As urbanization grows at about four times the rate of population growth, which is deemed to be exploding, how can the direction of the urban systems be changed to upgrade the systems themselves and their outputs? What are the alternatives?

"The underground environment, which is still largely an unspoiled frontier to which man can apply his creativity, offers a battery of alternatives. . . ."

One might logically ask: Is this "unspoiled frontier" really being exploited?

Sweden Leads in Technology

Recently some 25 underground construction experts from Sweden made presentations in six major U.S. cities concerning their underground construction experience and equipment. The meetings were part of a joint Sweden-U.S. agreement to cooperate on matters of underground construction, rapid excavation, and rock tunneling.

The Swedes are internationally renowned for their advanced technology in rock excavation, and they export their technology and equipment to many countries throughout the world.

Sweden makes intensive use of underground space. (Swedes call it Terraspace.) Quite a few Swedish cities in the range of 15,000 to 50,000 population lie above excavations which average about 10 cubic yards of space per person. In fact, when contemplating a new project, the Swedes approach it from the point of view – why *not* put it underground? Thus it is not surprising to find all-weather rail and highway arteries, power plants, factories, a wide variety of stored items, and countless other items and activities located underground in Sweden. In Stockholm four huge civil defense shelters have been constructed which function quite well in normal times as parking garages.

Swedish experts have also developed a wide variety of machines which can excavate almost any shape and configuration imaginable. One "human-fly" type of device advances an opening along any desired direction and angle, its track periodically bolted to the tunnel wall as it advances. Another machine resembles a giant crab, reaching forward and plunging its hugh claw-like steel arms into freshly blasted rock fragments and then pulling them back onto a conveyer belt.

The Swedes have not only demonstrated the feasibility of storing various forms of energy underground, but in their experience it has actually been cheaper than conventional storage. Depending on circumstances and needs,

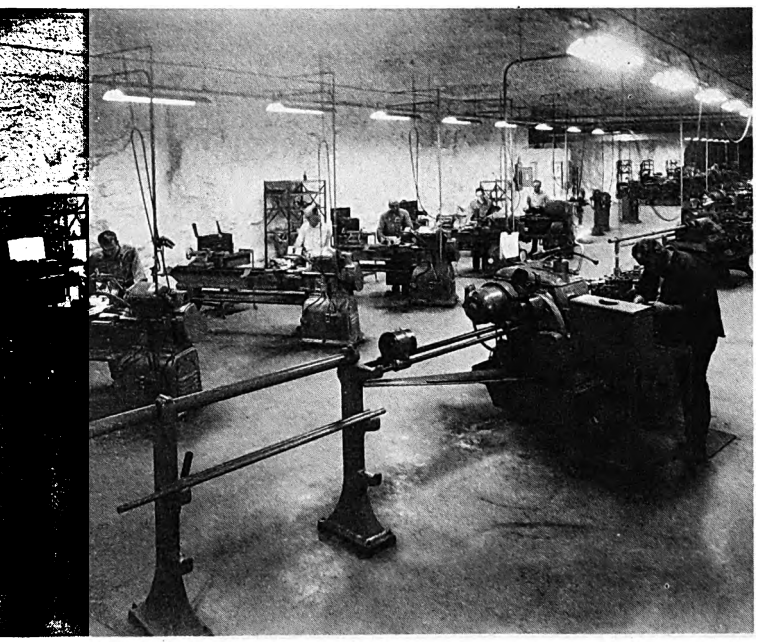
SWEDISH GARAGE-SHELTER – This underground garage in Stockholm doubles as a blast-resistant shelter for up to 20,000 people. When used as a shelter, three massive blast doors, operated by an independent power source, close the entrance.

BENEATH THE SURFACE
Cheaper, Safer, more efficient Structures

petroleum, liquefied natural gas, hot water, and compressed air can be stored economically in rock excavations.

Other Countries Also Dig It

Although Sweden is generally regarded as a leader in underground construction, some of the advantages have been recognized in other parts of the world. A recent issue



A FACTORY IN LIMESTONE – Workers make precision measuring instruments in this underground 140,000-square-foot plant carved out of solid limestone by the Brunson Instrument Company in Kansas City, Missouri.

of *Pravda,* for example, notes: "In current planning for construction, the effort to make best use of space is being directed directly into the bowels of the earth." The article goes on to report that in North Chertanovo, roads, pneumatic motor transport for garbage disposal, entrances to storage areas for stores, garages, parking places, and all modes of communication are underground.

In Tokyo, faced with skyrocketing land costs and also limitations on building heights because of threat of earthquakes, many enterprises have gone underground. Shopping centers, streets, restaurants – even a hotel. One major advantage of controlled environment space is the clean air. Imaginative architectural treatment and lighting also can result in very tasteful and comfortable surroundings.

Montreal's hugh underground Place Ville-Marie shopping complex underlies several blocks of the city. Here "shirt-sleeve" weather prevails throughout the year. Shops of every variety can be reached with the greatest ease and comfort on a single level in a clean, bright environment undisturbed by traffic, foul air, and noise.

Even U.S. Is Looking Down

The use of underground space in the United States lags behind that in Sweden and some other European countries. There are a number of reasons for this. The three national conferences noted earlier concentrated on means of improving the speed and lowering the cost of excavation. Because of our limited activity with underground as compared to aboveground construction, there is also a limited supply of specialists who understand how to evaluate and use underground space. An objection sometimes raised – that it would be psychologically unsatisfactory to place our many activities underground – has been largely disproved by the many successes in using underground space.

In spite of our limited activity, there are some interesting examples. The Brunson Instrument Company in Kansas City, Missouri, decided in 1954 to excavate its plant out of solid limestone. The plant still functions, turning out a wide variety of precision measuring instruments on 140,000-square-feet of floor space.

In Pennsylvania, a firm has been using an abandoned limestone mine for farming for 40 years. This activity employs some 500 workers underground to grow mushrooms for shipment to points throughout the country.

Following the oil embargo in 1973-74, the Congress enacted the Energy Policy and Conservation Act which calls for the establishment of a Strategic Petroleum Reserve Program. The act authorizes storage of up to one billion barrels of crude oil and petroleum products as a buffer to dull the economic damage which would result from any future embargo. The Federal Energy Administration plans to store the oil underground in salt domes and abandoned mines near refineries, pipelines, and tanker terminals.

Important Pay-Off for Civil Defense

The advantage of underground space, which is available and suitable for civil defense use, is obvious. Underground space offers virtually complete protection from radioactive fallout and thermal radiation, would in many cases be free of mass fire effects, and provide substantial protection against blast waves – all key threats associated with nuclear attack.

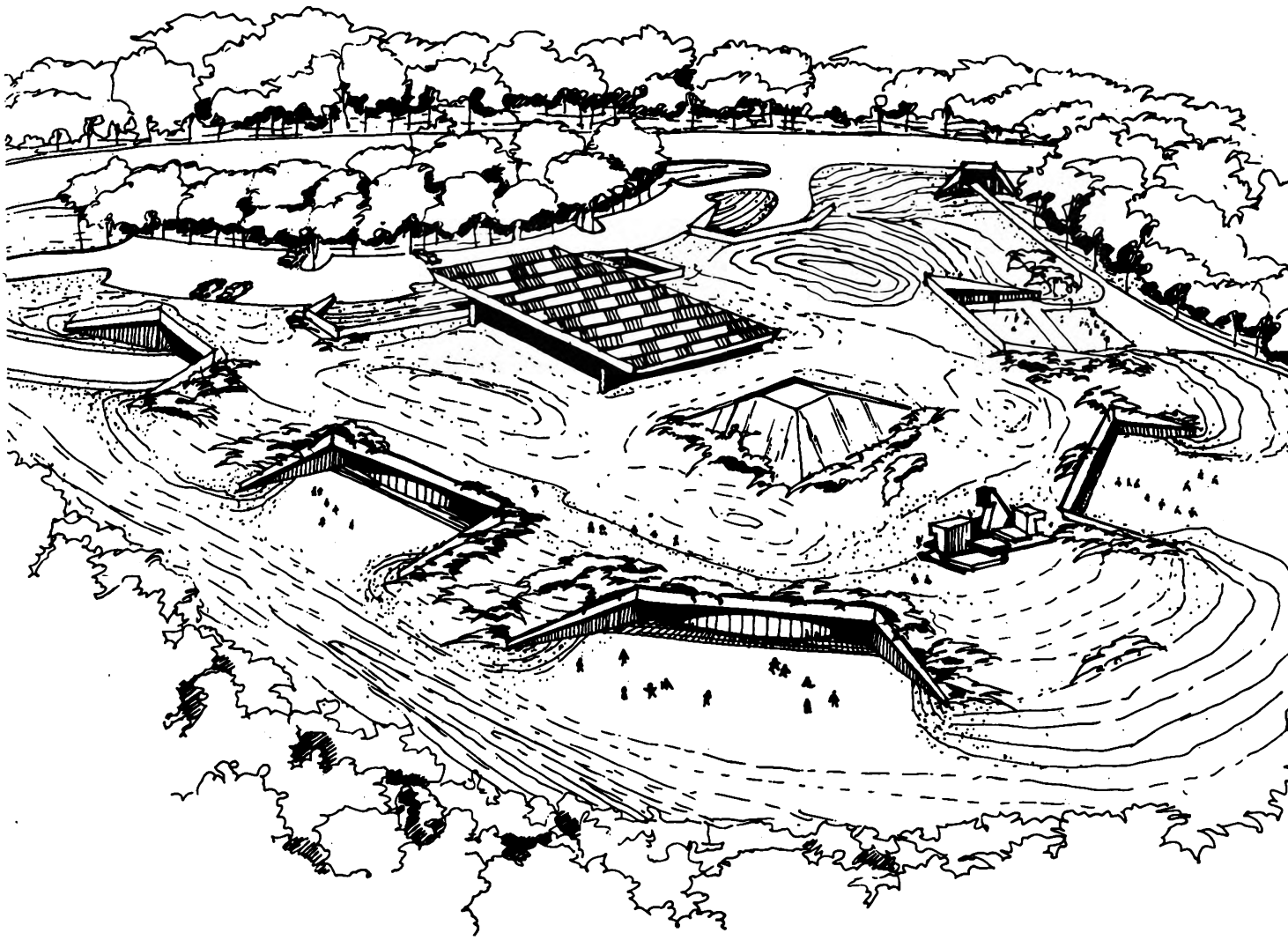
Certainly Switzerland has recognized the civil defense aspects of underground space. The recently completed Sonnenberg Super Highway Tunnel through the Alps, near

the City of Lucerne, doubles as a civil defense shelter. The Swiss believe it to be the largest shelter in Europe and perhaps the world. A guided tour was given to a group from mainland China who expressed special interest in it. The late Chou En-lai claimed that the great majority of large and medium Chinese cities were underlain by networks of tunnels as protection against nuclear attack.

Underground space is indeed a largely "unspoiled frontier" in the United States. An impressive set of benefits could be realized by utilizing this space. Every aboveground facility must have incorporated into its design certain features to withstand temperature, wind, snow, ice, and in some areas, earthquakes. By creating the proper environment underground, these problems become minimal. Exterior maintenance practically ceases to exist. Unsightly communication and power cables disappear. An all-weather environment is created and, since it is controlled, pollution control can be designed into the system.

While the interest in developing underground space in this country is strong, it is still shared by a relatively small number of knowledgeable people. Hopefully, more people will soon begin to appreciate the many beneficial applications of construction which appear – or perhaps more accurately, disappear – beneath the surface. ■

UNDERGROUND SCHOOL – This is an artist's sketch of the modern underground Terraset Elementary School, now under construction at Reston, Virginia. The school was designed specifically to combat the energy crisis.



By DEAN H. RAY / Computer Systems Analyst
DCPA Administrative Services

Computers in Civil Preparedness

The tasks of modern civil defense planners require that they collect, organize, store, process, update, and prepare management reports on large, dynamic files of information critical to the protection and future well-being of the American people. This information is used for operational planning and response to man-made nuclear disasters as well as any one of nature's tests of man's endurance – hurricanes, tornadoes, floods, earthquakes, tsunami, storms, droughts.

Civil preparedness planners at national, State, and local levels carry the herculean responsibility of ensuring that information they gather and maintain is accurate, timely, and current. In today's complex society, the task often becomes impossible without the aid of modern electronic computers and data communication systems to transmit, process, store, and retrieve the huge volumes of data collected, particularly at the national level.

In order to provide timely lifesaving support actions, the Defense Civil Preparedness Agency maintains a National Computer Center at Olney, Maryland, co-located with other Federal agencies in the DCPA Region Two underground facility. Stored and processed at this center are vital data on millions of national resources such as population statistics, housing and shelters available, government organizations, communication and transportation networks, medical, fire and sanitation support units, and many other files of data considered critical to providing national leaders with accurate and current preparedness planning tools. The Computer Center also provides support to State and local civil preparedness planners by extracting relevant information from the national data base and providing it to the planners to assist them in managing day-to-day operations of their programs. On the national level, the computers are also used to assist in the conduct of research programs, such as developing damage estimation and assessment methodologies, preparing population relocation plans, designing protective structures, and creating feasible goals for post-attack survival and recovery based upon pre-attack predictions.

Evolution of the Computer Center

The DCPA Computer Center was established in 1962 as a result of Department of Defense Nuclear Damage Assessment missions placed upon the DCPA. At that time, the DCPA, along with the Office of Emergency Preparedness (later reorganized as the Federal Preparedness Agency and placed under the General Services Administration), and the National Military Command Systems Support Center (later renamed the Command and Control Technical Center), were concurrently seeking approval to acquire electronic computers to be used for emergency preparedness planning and for the development of nuclear damage estimating and assessment systems in support of their individual missions. In December 1962, the Bureau of the Budget (now the Office of Management and Budget) completed its study of the requests and authorized the acquisition of computers for each organization.

An abandoned Nike missile site northwest of Olney, Maryland, was selected as the home of the first DCPA Computer Center because of its proximity to the DCPA Region Two headquarters. The first Computer Center employees were hired in December 1963, and a Control Data 3600 model computer was installed in November 1964. The CDC 3600 computer, a high-speed, scientifically oriented type computer, was selected to provide compatibility and mission backup support to the Federal Preparedness Agency, who also obtained a CDC 3600 computer. As the volume of work at the Computer Center increased, a smaller CDC 3200 was later obtained by DCPA to provide file management and report generation support to the larger computer, which was being used principally for scientific calculations requiring fast internal processing speeds.

Original task requirements placed upon the Computer Center were heavily scientific or mathematically oriented, requiring complex mathematical algorithms and sophisticated computations. Creation of management planning reports occupied only a small portion of the processing time. However, as more and more applications were developed for computer processing, management planning reports became more critical. As the research programs were implemented and became civil preparedness planning and operational programs, the requirement for scientific development and calculations diminished and management began to recognize the potential value of the computer as a planning tool. This time period of revolutionary management thinking toward automatic data processing was certainly not unique to DCPA; other government agencies and private industry as well were beginning to realize the potential for using the computer for day-to-day planning as well as for "number crunching" mathematical computations.

A New Era

The 1970's ushered in the era of teleprocessing and data communications, whereby the computer's vast capabilities were being provided to users located at remote locations via interactive remote terminals. These terminals, when connected to a central computer by ordinary telephone lines, provide the manager with increased computer-use opportunities. The development of increasing computer capabilities by manufacturers also led to the ability to process several jobs at one time on a single computer – techniques involving multiprogramming, multiprocessing, and timesharing. In addition to performing central processing at the computer site, the new capabilities provide for several remote terminals to be connected at the same time, with each user being serviced immediately by the computer. Each user has the feeling that he alone has control of the computer when, in reality, he may be sharing the equipment with many other users with the same impression. This type of processing is done by modern computers at speeds which the average human finds difficult to comprehend. For example, the average human eye blinks in one-tenth of a second; in that time interval, a modern computer may perform from 10,000 to 1,000,000 internal operations, depending on its individual capability.

One of the most serious deficiencies with modern computer systems lies in the limited operating speeds of the mechanical input and output devices, as well as the extremely limited capabilities of human beings to work with the devices. These limitations often result in the computer's effectiveness being considerably diminished while having to wait on the comparatively slow input and output operations. Other problems can present themselves when computer data transmission over telephone lines is used – problems such as limited transmission speeds and noise factors which can change or destroy the data as it is transmitted. In addition to these problems, it is obvious that a high-speed computer cannot be made to wait on a human being operating a remote terminal at speeds most likely not to exceed two characters per second. Some of these problems are reduced through the use of capabilities within the central computer to overlap and intermix many, many operations during the same time interval. Obviously, if the computer is waiting for data from some input media (human or machine), it can best be used to do other things while waiting and not sit idle. This capability exists through the techniques described previously, i.e., multiprogramming, multiprocessing, and timesharing.

Plans for the Future

With the capabilities now available on the computer market, the DCPA is currently involved in replacing its existing computer equipment with a new Univac 1100 model computer with teleprocessing capabilities. This equipment is scheduled for installation during the first part of 1977 and will provide DCPA with greatly enhanced processing support as well as the potential to offer more timely management support to regional, State, and local levels.

Each DCPA regional office will initially be equipped with a CRT (cathode ray tube) visual display terminal with a typewriter-like keyboard, and line printer device. This will provide the capability for speedier "real-time" response to regional and State inquiries to the data base at the Computer Center.

A visual display system to provide national leaders with tabular and map-type data display is also under current development. This system will remotely display data processed by the central computer system at the Computer Center. Emergency tabular displays will consist of summary statistical tabulations for the Increased Readiness Information System (a system to compile and analyze key State and local governmental and public actions in a crisis period), reports on damage to civil resources in the event of an attack, and transattack/postattack operational situation reports of State and local governments. Emergency map displays will consist of presentations showing areas of radioactive fallout and other large-area continuing life hazards plotted over background map data.

The automated display system can provide National Command Authorities with timely situation reports in a matter of minutes as compared to several hours required under the present manual procedures. In the future, the incorporation of remote, automatic blast and fallout sensor input data could further increase the speed and accuracy with which DCPA will be able to prepare and present situation information.

Obviously, any tool is only as good as the use to which it is put. It behooves every civil defense manager and planner to become familiar with the capabilities of electronic computers and teleprocessing. Miniaturization in electronics has brought about lower processing costs, higher speeds, and increased potential for use. In today's society, the computer is rapidly becoming a necessity in fact-finding and decision-making processes. ■

Student Surveyors in Hawaii

By VERNE PAU
DCPA Region Sev

The three quarters of a million residents of Hawaii, plus the many thousands of tourists who visit our 50th State every year, enjoy surfing, sunning on the sandy beaches, touring the Waikiki hotels, the Waimea Canyon and Hanalei Bay, viewing the sugar cane and pineapple plantations, gazing at majestic Diamond Head Mountain, and attending luaus. But most didn't notice that this last summer Hawaiian college students were surveying buildings, lava tubes, and water tunnels throughout the islands for fallout shelter capability, to help save residents and tourists from the effects of radioactive fallout should the islands ever again become the target of an aggressor.

The survey was part of a fallout shelter updating program by the Defense Civil Preparedness Agency, using college students in a summer-hire program. For their 13 weeks of summer work, engineering and architecture students, who qualified for the program, were paid at the rate of $130 to $146 a week, plus travel expenses, depending on the length of their formal education and experience. Seventeen college students did survey work in Hawaii, part of the 237 students carrying out surveys in 28 States during 1976 under the program.

Data for Two Options

The summer surveys are undertaken to provide current shelter information to assist civil preparedness planners in developing operational procedures to carry out two basic options: (1) Protecting people essentially in-place, at or near their places of residence, in the event of a nuclear attack, or (2) Conducting the orderly relocation of people, in a period of extreme international tension involving the threat of a nuclear attack, from areas of potentially high risk from the direct effects of nuclear weapons to safer locations. In Hawaii, for example, the relocation option would necessitate the movement of Honolulu County residents and tourists to the outer islands by planes and ships.

Most of the 17 students who conducted the shelter survey on the Islands were students from the University of Hawaii, Honolulu. Fourteen of the students surveyed facilities on Oahu while the other three were assigned to survey facilities, including structures that could be used for emergency congregate care facilities, on the outer islands of Molokai, Kauai, Maui, and the Big Island of Hawaii.

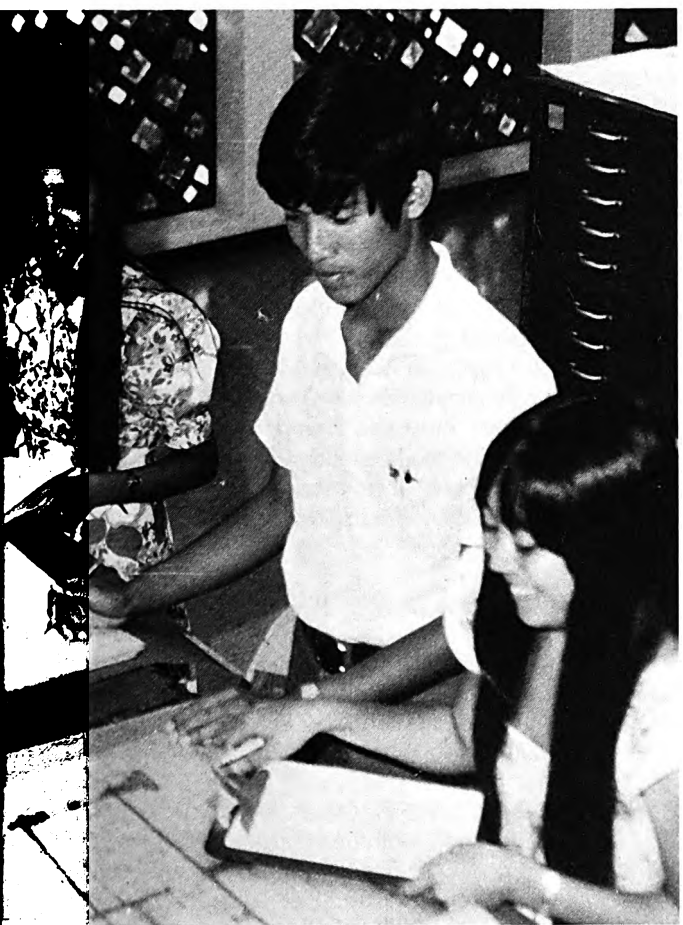
In carrying out their work, the students, most of whom were in the 18-20 age bracket, had to meet and work closely with the owners or managers of the structures they surveyed, giving them an opportunity for professional association with a wide variety of people.

A Variety of Reactions

The college students provided an interesting potpourri of reaction to their survey work. Calvin A. Saruwatari, for example, recalled he traveled more miles on the Island of Oahu than any of his colleagues and located the least number of shelters, driving a total of 126 miles one day. He worked closely with William Dunford, the Management Analyst for the Honolulu Board of Water Supply, whose emergency role is the civil defense coordinator for his agency. The two toured the island to survey many miles of water transmission tunnels, six of which turned out to be fine shelter facilities. Dunford spoke highly of the survey team, saying they were "thoroughly and professionally trained, and a hard-working group."

A number of students commented that the many personal contacts they made during the survey work helped

to give them more self-confidence. "I am a pretty shy person," said Kyle Lung, an 18-year-old architectural student at Notre Dame University. "I have a difficult time getting to know people. But I felt that during this job I 'came out' more, got more confidence in myself." Kyle also felt he would be ahead of his class in many respects when he returned to Notre Dame. "I got to know about building construction, materials, plans," he said. "It helped a lot."



STUDENT SURVEYORS Donna Sugihara, Wyatt Won, and Pam Goya (left to right) work at the Hawaii State Office Building in Honolulu.

Civil engineering student Wyatt Wong noted it was frequently necessary to point out to building managers and owners the nature of radioactive fallout and the type of shelter that can be effective against this threat. "We had to explain that fallout shelter often is available in the upper floors of buildings as well as in basements," he said.

The students even found some threats more mundane, but much closer to today's environment, than the threat of radioactive fallout – like the leaking gas fumes from a 12-year-old car one group was using while surveying caves in central Oahu. "As a safety precaution when surveying caves, we used a little electronic gas-analyzer device that would sound a warning if there was too much carbon monoxide or explosive gases," Clayton Ah Yo, an engineering student, said. "We never had any trouble in the caves, but the gas fumes from our old car set off the warning siren once."

The student surveyors working on the outer islands had to wade through elephant grass three feet high to locate and inspect lava tubes in the middle of five miles of sugar cane fields. They also surveyed old Refuge Caves on the Big Island of Hawaii where they had to use walkie-talkies to communicate with each other.

The summer survey work is likely to have long-lasting effects on how the students look at various structures in the future. As Carolyn Sugai, an electrical engineering sophomore at the University of Hawaii, put it: "Even when I'm not on the job, and walk into a building, I find myself looking carefully at the structure, checking the windows, and subconsciously surveying the building for potential fallout shelter."

Before they began their work, each student had to qualify by passing a basic shelter analyst course, which these students took at the University of Hawaii. Most of them learned about the summer survey work from their instructors at the University or from a notice posted on a bulletin board. Incidentally, the Hawaii students had some of the highest civil service test scores ever recorded to qualify for the work.

Seven Women on the Team

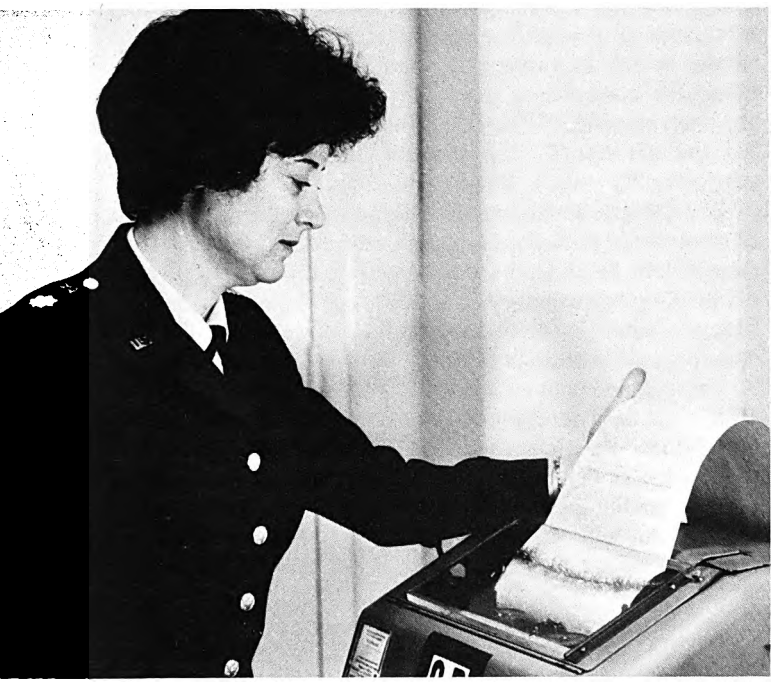
Seven of the 17 students doing shelter survey work in Hawaii were women. In addition to the students already mentioned, the group included Charlene Onaka, Karen Lee, Pam Goya, Donna Sugihara, Shereen Nago, Earlene Lofstron, Don Fujimoto, Steven Yabusaki, Alan Umeda, Bryant Wong, Tom Goto, and Joe Goo.

Members of the DCPA Region 7 Engineering and Support Group, who supervised the students over the 13-week period, were unanimous in their praise for the diligence in which the students approached their assignments and the thoroughness of their work. As Tom Murdock, a civil engineer survey supervisor, put it: "This is the best group of kids I've worked with in the past seven years." ■

Enlist those Women!

By MAJOR MARY JANE HILLERY / United States Army Reserve / Sudbury, Massachusetts

The time is long past when women were relegated to children, kitchen, and church. I think it stands to reason that anyone who is entrusted with the perpetuation of the human race should have some ability when it comes to protection of the human race.



MAJOR HILLERY at a news wire machine in the underground center of DCPA Region One.

These are my thoughts after a close association with civil preparedness for the past two years, albeit in the uniform of an Army reservist as a Mobilization Designee, assigned as an emergency public information officer at the Defense Civil Preparedness Agency Region One office in Maynard, Massachusetts.

How can our civil preparedness forces be strengthened? The natural answer is American women—many with college degrees unused and lying fallow, with organizational capabilities and myriad skills half utilized. Anyone who can herd a bunch of squirming Brownies and Cub Scouts, mobilize community members, plan fund-raisers, and serve on town committees can adjust sights toward directing these abilities to the needs of civil preparedness.

I'm no stranger to the white triangle on a blue field, symbol of civil defense units. At age 15 I wore the shoulder patch of the Civil Air Patrol Cadet which carried a red propeller in the center of that triangle, and attended encampments at Westover Air Force Base in central Massachusetts.

Since that time, I've been in one uniform or another, so maybe it was a natural that I should be a MOBDES as a U.S. Army reservist. The Air Force-sponsored CAP gave way to college, then a four-year tour in the Navy, followed by two years Naval Reserve. Pan American Airways claimed me for another six years during which world capitals were vacation spots, with Paris, London mundane stops en route.

Nineteen years went by before I, one day, picked my reserve pin to wear on a sweater while, as managing editor of a local newspaper, I covered the presentation of a civil defense on-site assistance report to officials of the Town of Sudbury, Massachusetts, my home town.

Region One DCPA officials spotted my reserve pin and started asking me questions, then suggested that I enter the Civil Defense Mobilization Designee Program to salvage my reserve retirement points.

At that time I was serving on three town boards, was president of the Sudbury Business and Professional Women's Club, executive board member (now president) of the National League of American Pen Women, past president of the Local League of Women Voters, and not so incidently, wife of a lawyer and parent of an 11-year old son. I had just completed three years' work as a legislative lobbyist and community relations coordinator for the Puerto Rican migrant workers in my State. I was not looking for something else to do with my spare time.

She Signs Up for More Duty

Busy as I was in covering the event that day, and also taking pictures for a deadline story, I promised the Federal people: "I will come down to the Federal Regional Center next week and learn about this MOBDES program."

In retrospect, I think that joining the MOBDES program was the best thing I ever did. I am, in fact, working in my field, at my own pace, and contributing something toward getting the word out that a nuclear attack can happen here. I appear before groups, write news releases, and assist at briefings.

As a newspaper gal, I'm aware that people like to read about people they know, not reports out of Washington. As a small-town editor, it's second nature for me to be alert to the local angle, thus giving the reader his money's worth.

In addition to printing news in my own newspaper, the fact that I know editors and reporters on the paper doesn't hurt, either. A lengthy 25th anniversary story for civil defense was printed, word-for-word, thanks to the generosity of my media colleagues.

And so it goes. Other side assignments include news stories about the ability of the Federal Regional Center to serve as a nerve center for nuclear attacks by an enemy, assisting high school students with a work-study program on civil defense, and translating from Spanish into English news stories and reports coming out of Puerto Rico, part of Region One. (I am trilingual: Italian, Spanish, and English.)

On the educational and on-the-job training side I have completed the "Civil Defense U.S.A." home study course, attended regional seminars and workshops, and learned at first hand the State public information programs. All along the way I have been impressed by the dedication of the men and women I have met.

All of us share a great common concern that the American public is complacent. For more than 100 years we've never suffered a war in our own backyards. The Russians have, so it's not so unusual that they claim to have a superior civil defense program.

I've come to appreciate what the flashing yellow beacon signifies as its location denoting the road to the Federal Regional Center. As I pass by on my way to the newspaper office, it reminds me that there is a multi-million dollar underground complex, fully staffed, prepared to serve as the Northeast's command and control center in the event of a nuclear war threat.

In addition, I've seen, and have been proud to be a part of, the dedicated staff of Federal regulars and their MOBDES assignees who are trained to become a cohesive working force under any circumstances.

An Untapped Resource Out There

But are those of us concerned with civil preparedness to be regarded as an underground fraternity-sorority? Russia's superior crisis relocation plan doesn't seem to be any secret. Are our loved ones more expendable? Is this foot-dragging someone's answer to the population explosion? Are we forgetting that Russia is not the only other nation with nuclear weapons, and that we are prey to an irresponsible decision from any corner of the globe?

From what I can add up, the biggest bargain in the Federal spectrum is the civil preparedness program. Look at the cost, per capita, and you'll find it's about the price of a pack of cigarettes.

Yes, I've been impressed (no easy task for a cynical news reporter) with the singular purpose of the men and women who voluntarily attend training seminars and conferences, eager to learn and to share productive experiences with each other. But a vast, untapped resource, the female specie, exists out there. I know they could be convinced to serve in the civil preparedness ranks. ■

America's Electrical Lifelines

(continued from page 13)

6. Much of the more recent data on EMP remains theoretical because the Nuclear Test Ban Treaty forbids nuclear detonations in the atmosphere which could verify the data. EMP can be simulated for some testing purposes, however.

EMP would also have some effect on various forms of telecommunications, but, again, much of the data are not fully verified. Bell Telephone Laboratories has done extensive work on EMP's effects on land-line and microwave telephone communications. The Bell System has tentatively concluded that the protective devices already built into its system are sufficient to protect against EMP as well.

Broadcast stations, with their large antennas, would also be subject to severe EMP damage. The Defense Civil Preparedness Agency, which has provided fallout protection and auxiliary power for some 600 key broadcast stations in the United States to assure that survival instructions could reach the public in a nuclear emergency, is also starting a program to protect these stations against EMP. Ten prototype stations are now being equipped with EMP protection. In addition, DCPA has a $200,000 contract with the Naval Civil Engineering Laboratory to build EMP protection into 50 more broadcast stations in Fiscal Year 1977 as part of a program to protect all 600 stations.

Electrical disruptions of whatever kind, if significantly lengthy, would severely test Americans' traditional ingenuity in facing emergencies. The economy, industry, our daily mode of living, the general recoverability of modern America, and the technological edge we enjoy over potential opponents – all are closely tied to our electrical lifelines.

If, as Napoleon once said, armies march on their stomach, it is equally true that modern societies mobilize with communications and electric power to meet an adversary. How well the partnership of the utilities and government manage to keep these vital services operating in a war emergency could determine whether we would prevail. ■

California Earthquake Safety Campaign

(continued from page 19)

in favor of more safety information," Information Officer Cohen said. "We feel the final product is definately entertaining, a real attention-getter for children and adults, but more important, especially easy to understand and loaded with useful information."

Working to assure the technical accuracy of both radio and TV productions was OES earthquake specialist, Roger Pulley, who has guided many OES film projects.

The cost of the entire compaign was $25,000, totally funded by the State. An evaluation will be made of how effective the media effort has been by polling stations to see how often the spots were aired. But already OES has been deluged with hundreds of letters asking for more earthquake information – a sign the public is getting the message. ■

Here's a digest of news and editorial comment on civil preparedness topics:

SOVIET CIVIL DEFENSE -- According to the *New Hampshire News,* civil defense, a hotly debated issue in the 1960's, is again surfacing as a major concern of defense planners. The reason is that the Soviets' war survival capability is significantly upsetting the U.S.-Soviet strategic balance, ensuring that a large part of Soviet production and population could survive an American retaliatory attack. The *News* quotes Paul Nitze, former Deputy Secretary of Defense and Secretary of the Navy, as saying in the January issue of *Foreign Affairs:* "As the Soviet nuclear capability grew, the Soviet leaders still declined to depict nuclear war as unthinkable or the end of civilization. On the contrary, they directed, and still direct a massive and meticulously planned civil defense effort." . . . In the *Reader's Digest,* September 1976, Lt. General Daniel Graham, a former chief of the Defense Intelligence Agency said: "The Soviets have not built up their forces, as we have, purely to *deter* a nuclear war. They build their forces to *fight* a nuclear war, and see an enormous persuasive power accruing to a nation which can face the prospect of nuclear war with confidence in its survival. Perhaps the most worrisome aspect of the Soviets' strategy is their civil defense program. It is now a high-priority matter, with a budget of more than $1 billion a year. About 20 million young Russians receive civil defense training every summer as part of annual war games. Sample exercises are: convoy evacuation practice at Leningrad; the adaptation of large refrigerator ships for evacuating the population of Sevastopol." . . . The *Christian Science Monitor* reports that Professor Leon Goure, Professor of Russian Studies at the University of Miami, believes that the Soviet Union has built such an extraordinary system for defending itself from attack by missiles and bombers that this is beginning to color its relations with the United States. The Soviets are saying, in effect: "Don't push me too hard. We could hurt you, but you can't hurt us. Anyway not much." In Goure's opinion, the article reports, improvement in the accuracy of American missiles would not deter the Soviets, because they would take the view that they are safe behind their civil defense system. Professor Goure concludes: "I think we have to build a civil defense system of our own." . . . The *Chicago Tribune* quotes a "prominent American" who returned from Moscow recently with the impression that the Russians regard us as politically musclebound, and that the Russians themselves are not adverse to starting a nuclear war — and that they wanted to be sure of protecting their own people in such a war. The scope and speed of their civil defense preparations strengthen that impression, the *Tribune* says, adding that NATO analysts say these moves include the dispersal of new industrial plants, the building of underground headquarters, the storing of wheat in submerged silos, and participation in compulsory civil defense training by the workers. . . . "The possibility that the Soviet Union may one day start a war is by no means fantastic," reports the Jefferson City (MO) *Post-Tribune.* "Dr. Malcom Currie, Assistant Secretary of Defense for Research and Development, has noted that the Soviets are not only mounting a massive civil defense campaign, but are also dispersing and strengthening their new industrial plants. They would thus be able to survive any war as an industrial power." . . . The *New York Times* reports that the Soviet civil defense program, which offers the Russians the hope of surviving an initial nuclear attack, impresses many analysts as the most significant new development. The Soviet program began to be expanded after the first strategic arms accord in 1972, when civil defense became a branch of the armed forces, the *Times* notes. Citing reports from three intelligence services, the *Times* reports that in recent years the Soviet Union has built more than two-thirds of its new industrial capacity outside large urban areas, has constructed more than 90 underground headquarters in the Moscow area alone for the dispersal of arms factories in a crisis, and is training industrial workers in the rapid evacuation of plants from normal target areas. . . . The Birmingham, Alabama *News* comments: "By shifting emphasis to preparing for defense of a civilian population in the event of enemy nuclear attack, the awareness of the American people could be heightened to the real threat of Soviet military capability. Maybe then we would end complacency and get into the competition in earnest. It is time to stop settling for being No. 2 in Civil Defense. Too much is at stake." . . . An editorial in the Manchester, New Hampshire *Union Leader* notes: "The one way to invite nuclear aggressive action against the United States is to leave the civilian population as naked and helpless against an enemy attack as a clam with one half of its shell removed on a beach at low tide." . . . The *Washington Star* reports: "The United States has let itself become more vulnerable to nuclear attack than the Soviet Union, according to a Library of Congress study" which was conducted at the request of Senator Howard Baker of Tennessee. In contrast to the United States, the report notes, "vigorous efforts to protect both population and production base are everywhere evident" in Russia.

INTELLIGENCE STUDIES – Henry S. Bradsher of the *Washington Star* reports that "two parallel official studies of the Soviet and U.S. civil defense efforts have come to inconclusive results, leaving the subject for further consideration by the incoming Carter administration. The studies examined the Soviet ability to shield populations and essential military and civilian facilities from attack, and the possible need for some shielding of the now-unprotected United States." Bradsher adds: "Some officials have interpreted the available information to indicate that the Soviets have the ability – or are working hard to achieve it in the near future – to reduce damage from any likely attack to survival limits." However, in weighing the consequences of such an effort, the *Star* says, "the study of whether the United States should launch a major civil defense effort decided that it was too early to call for any significant change in the current, low-level standby program. The Soviet study was conducted by the CIA, military intelligence, and the State Department." Their findings showed that "evidence from satellite photography and published Soviet documents and training manuals pointed to a massive civil defense effort. But this seemed to be denied by evidence available to foreigners living and visiting in the Soviet Union." Such conflict has prompted new efforts to "collect intelligence on what the Soviets are doing. Civil defense had long been virtually ignored by the CIA, but it has now been made a priority target," the *Star* notes.

WARNING AND COMMUNICATIONS – The Newark, N.J., *Star Ledger* reports that "fifty municipalities in 13 New Jersey counties will participate in a nationwide Civil Defense (CD) information gathering exercise to test the effectiveness of CD emergency reporting systems." . . . The Lincoln (Neb.) *Star* wrote: "The Kearney Civil Defense office said it will receive $7,500 in federal funds to improve its civil defense warning system." In that same State, the *Evening Journal* reported that "the City Council has approved the hiring of a consultant to set up a central emergency communications system." The proposed central communications system will be located in the Civil Defense complex at the County-City Building and will serve the police, sheriff, fire and ambulance services. In Columbia, South Carolina, the *State* reported that "the U.S. Civil Defense Preparedness Agency announced a $17,209 grant for the South Carolina Disaster Preparedness Agency for use in a statewide radio network. The money will be matched by State funds. Sen. Strom Thurmond said the money will increase the ability of local civil defense agencies to communicate with state headquarters and each other during an emergency. The network will be used for disaster warnings and emergency communications in all counties of the state."

PEOPLE CALMER THAN QUAKES – The *Washington Post* reports that Chinese stay unflappable in earthquakes. In response to an American visitor, who reacted to the great North China earthquake as American movie buffs react to disaster movies, the *Post* notes that a Chinese acquaintance could not resist making a point: "It seems such movies are based on the concept that if you frighten people enough you can make a lot of money. We have earthquake movies too, but their purpose is to show people what to do if a quake strikes." The American said such workman-like unflappability seemed to characterize Peking residents' reaction to a disaster that forced many to set up housekeeping in the streets. For example, the *Post* reports, an American expatriot was hospitalized for a minor intestinal ailment before the quake hit. His doctor went without sleep for three nights monitoring his condition. After the quake, the foreigners (Americans and others) became an extra worry to a people who feel "they can overcome or seek to counteract any disaster if they are able to devote their full attention to it." And in Tokyo, the *N.Y. Times* said the area's governments, neighborhoods and individual citizens are taking more precautions by the day, from pamphlets and stored foods to actual evacuation drills. According to the *Times*, the Tokyo Metropolitan Fire Board has designated 121 official open-area shelter spots. More than 200 roads to these areas have been surveyed and designated as less dangerous. These routes are marked and lined with thousands of fire extinguishers in sidewalk display cases, 429 underground water cisterns and 605 emergency pumps. Experts are developing a new legal concept, the right to safety, by which governments would be held legally responsible for the lack of any disaster preparations. This and more were reported by the *Times* about Tokyo, confirming a premise that "no one can do anything yet about these natural cataclysmic events. But, people can prepare for them." – **Earl T. Tildon.**

JOSEPH V. QUINN

Joseph V. Quinn, a member of the national civil defense staff for more than 20 years and author of FORESIGHT's *From the Press* column since the start of the magazine three years ago, died on November 28 at the age of 53.

A top professional, Joe will be deeply missed by all who knew him.

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