



# disaster preparedness report

OCTOBER 1977

National Weather Service

President Jimmy Carter has forwarded a memorandum to heads of Executive Departments and Agencies on the reorganization study of Federal Preparedness and response to disasters.

Carter's memo stated he had directed his reorganization project staff in the Office of Management and Budget to carry out a comprehensive study of the Federal government's role in preparing for and responding to natural, accidental, and wartime civil disasters.

Mr. Nye Stevens, directing the President's Preparedness Task Force has been in touch with the Disaster Preparedness Staff for information about the programs of the National Weather Service and has asked for assistance in the staff study.

The Disaster Preparedness Budget Increase Request for FY 1979 has cleared both National Oceanic and Atmospheric Administration (NOAA) and the Department of Commerce. Personnel and funds for completion of the Nationwide program will go to the Office of Management and Budget for approval before any Congressional action can be taken.

Dr. Richard Hallgren, Deputy Director of National Weather Service (NWS) recently sent a letter to about 27 NWS field offices asking that a special effort be made to explore avenues of mutual programs and projects between NWS and personnel of NOAA's Marine Advisory Service (NMAS) (part of the Sea Grant Program). The mission and expertise of specialists and agents in resource management, economics, business, recreation, oceanography, engineering, law, marketing, education, and public information provides the potential for new dimensions in service to users we both serve.

AMS Sponsored Conferences to address disaster preparedness and human response:

- o Severe Local Storms, Omaha, NE, October 18-20, 1977
- o Hurricanes, Miami, FL, December 13-16, 1977
- o Flash Floods, Los Angeles, CA, May 2-5, 1978

The University of Minnesota has selected Port Arthur, TX, and Mobile, Alabama, as the sites for a pilot study which begins a three year Natural Hazard Warning Study funded by the National Science Foundation. This study is being made to ascertain how the various social segments and organizations react to hurricanes, tornadoes, flash floods, and earthquakes. Rick Coleman, NWS, Headquarters and John Graff, Meteorologist in Charge (MIC), Minneapolis, MN, are NWS representatives on the Advisory Committee for this study.

Texas A&M has received a Sea Grant Award and is looking into various aspects of hurricane awareness, preparedness, warnings, and public response. The project has an Advisory Board with Neil Frank, National Hurricane Center; Andy Anderson, Davis Benton, and Herbert Lieb representing NWS. Dr. Gilbert White and Dr. Robert Simpson, former Director, National Hurricane Center are also on the Advisory Board.

Preliminary Information on the Kansas City Flash Flood from the Regional Survey team investigating the Kansas City Metropolitan Area Flash Flood of September 12-13, 1977, shows:

- o good and timely watches, warnings, and special statements.
- o wide and speedy dissemination of warnings by TV and radio.
- o excellent community readiness and response.

There have been 25 deaths and an estimated \$62 million in damage to public and private property. Of the 25 deaths, 17 were either drivers or passengers in automobiles.

In a Memorandum for Defense Civil Preparedness Agency (DCPA) regional directors from the Acting Director dated August 2, 1977, the DCPA has, for the first time, authorized use of matching funds for NOAA Weather Radio (NWR) receivers when it is determined by state or local authorities that NWR is the primary means of distribution of attack warning, as well as other disaster threats. Applications for matching funds must include assurance of emergency programming in a written agreement between state or local government authorities and the NWS with fixed responsibilities and procedures as well as reliable NWR broadcast coverage in areas for which receivers are requested. Matching fund requests can be made for:

1. local government Emergency Operating Center's (EOC's) not having direct access to the National Warning System (NAWAS);
2. control points, or base stations of emergency government services or departments;
3. programming locations of electronics media which broadcast to the public (commercial radio and TV); and
4. selected industries and institutions such as schools which have an intra-communications or public address system which will permit immediate relay of emergency information to occupants and employees.

A Joint Statement on Civil Defense was signed at Washington, DC, May 16, 1977, by Lea Kungle, President, U.S. Civil Defense Council; David L. Britt, President-elect, National Association of State Directors for Disaster Preparedness; and Bardyl R. Tirana, Director, DCPA. They agreed in this Document that "Civil Defense is government's responsibility for preparedness, response and recovery from any natural or manmade disaster." Quoting from another section the statement says: "DCPA acknowledges that it cannot carry out its partnership responsibility to support attack preparedness unless local and state jurisdictions have adequate total disaster preparedness. Local and state governments have the responsibility to provide preparedness for enemy attack as well as peacetime disasters. Therefore, DCPA's financial assistance to local and state governments may in the future be used to achieve total preparedness against any risk." Further on: "The effectiveness of taxpayers' funds, whether from local, state, or Federal sources, will be enhanced greatly by a cooperative focus on total preparedness needs at the local and state level. A consistent approach to disaster preparedness for all risks will materially advance the objectives of local and state agencies, and also meet the partnership obligation embodied in the Federal Civil Defense Act to provide for attack preparedness." The NWS welcomes this statement. It enforces our Disaster Preparedness (DP) role and relations with DCPA and with state and local governments.

NWR Continues to Grow and our offices continue to find ways of placing receivers where they're needed. Ben Barker, Official in Charge (OIC), Weather Service Office (WSO) Tulsa, OK, worked with the Tulsa Board and the Tulsa Repeater Organization to get a NWR receiver in every school in the City.

The Chicago school system has made arrangements to connect their FM radio station directly to the NWR recorder in Weather Service Forecast Office (WSFO) Chicago. This allows NWS warnings to be broadcast directly into every school in the Chicago system. The recent state-wide tornado drill emphasizing the need for improved preparedness in schools served as the impetus.

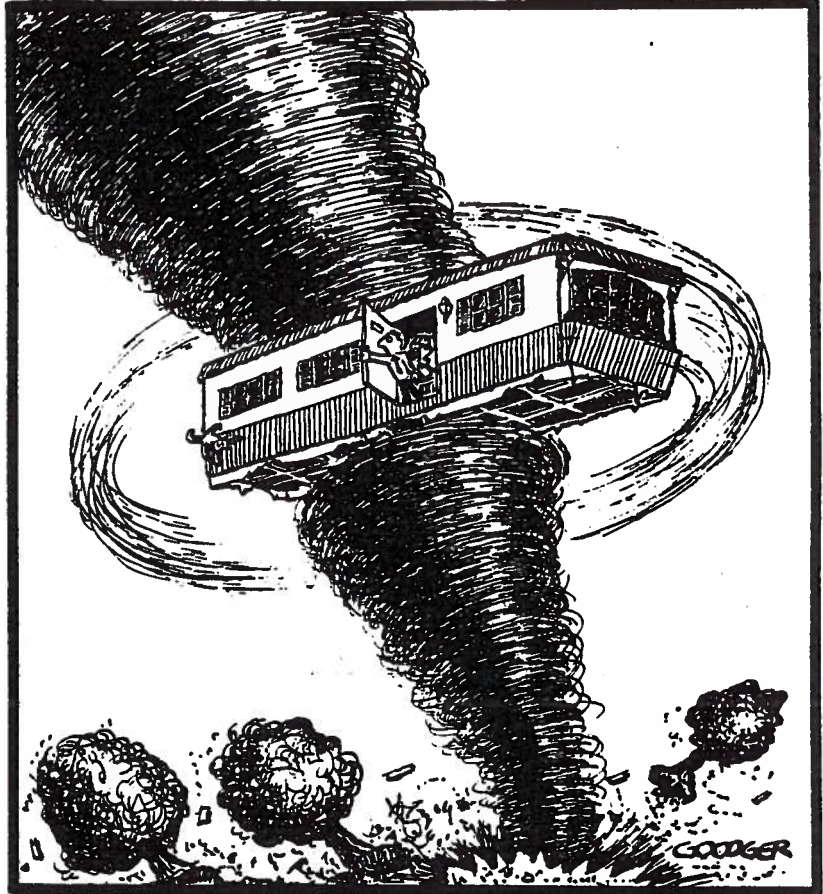
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A fleet of cars and trucks will soon install receivers to evaluate their usefulness to drivers while on the road. This test is being conducted by a rather large trucking firm serving a number of states in the central U.S.

NWR will be used to fan out tornado and severe thunderstorm warnings to all of WSO Marquette, MI, counties from the state police post in Negaunee, upper MI. A demuting NWR receiver tuned to Marquette is located at the police post. When the alarm sounds, a few spaces on a pre-printed warning form will be filled out and warnings disseminated.

"Tornado Awareness Week" was proclaimed by Texas Governor Dolph Brisco, coinciding with the 16th Annual Civil Preparedness Conference for state and local officials. Television and radio stations noted the week with special programs, interviews, and public service announcements. Allen Pearson, Director of the National Severe Storms Forecast Center and Herbert Lieb, Chief of NWS Disaster Preparedness spoke at the conference.

The Statewide Tornado Drill for Kansas was acclaimed a huge success. Everyone involved was in favor of scheduling another one in 1978. While preparedness is excellent in Kansas, the drill did show that some counties and communities are behind schedule. One of the great concerns was the lack of good means to deliver warnings to many schools. A State Department of Education Official will help inform school districts about the various options in receiving warnings.



**"There they go again, interrupting the program with one of those Weather Bulletins."**

Mr. Duane Wirth, Director of the Boone County Illinois Emergency Services and Disaster Agency and his staff including Steve Steinke, Staff Meteorologist have worked hard to improve community awareness and promote tornado safety. The working relations with WSO, Rockford, IL, have been the very best. According to Mr. Wirth, "We have a very concentrated effort on the part of our volunteers to prepare ourselves and our community for any future damaging storms. We've come a long way, but we have a long way to go. The response of the public has been tremendous."



Dr. Neil Frank, Director, National Hurricane Center, in cooperation with Florida officials recently completed a hurricane exercise to test the readiness of the various state agencies within Florida. In a report to Governor Askew, Dr. Frank stated, "The exercise was unique in the sense that it went beyond the usual preparedness actions designed for immediate protection from the elements, and required the participants to collect the necessary data for a disaster declaration. It was shocking to see damage estimates of over 3 billion dollars. Let me quickly add that the hurricane was a very real possibility."

Dr. Frank recently summarized the highlights of the 1977 hurricane preparedness program. In cooperation with Public Affairs (PA), NOAA, and the DP Staff, Dr. Frank counted-up nearly 150 public appearances either as guest speaker or on TV and radio programs.

Elroy Jagler, MIC Milwaukee reported the Governor's Eleventh Annual Disaster Preparedness Conference as the highlight of preparedness activities for this season. About 500 people attended the Conference. Presentations were made by Jagler and John Graff, MIC from Minneapolis. Fifteen live and taped broadcasts were made including appearances on three major shows devoted to weather.

Red Cross Praises NWS. In a letter to President Carter, Frank Stanton, American National Red Cross Chairman praised the National Weather Service "...for the detailed and continual information provided... that allowed so much lead time in both instances." Stanton was referring to the preparedness actions during Hurricanes Anita and Babe.

MIC Marian Renfrew, WSO Wilmington, DE, participated in a statewide tornado drill with state and county Defense Civil Preparedness personnel and other state and local agencies. Headlined by Governor Pierre duPont the drill emphasized statewide coordination and streamlining and updating the emergency operations plan.

Hurricane Awareness Week in August provided North Carolina coastal residents, property owners and visitors the opportunity to learn about hurricanes. There were five days of films, lectures and displays at the North Carolina Marine Resources Center on Bogue Banks sponsored by the Center and the Sea Grant Program. Speakers included representatives from Division of Civil Preparedness, NWS, U.S. Coast Guard, and the local community.

Virginia's Office of Emergency Services used a hurricane moving ashore in the Norfolk-Virginia Beach area as the stimulus for a Virginia Operations Plan Exercise. Involving 20 local jurisdictions, the four day exercise was completed in three phases---increased readiness, emergency response, and recovery. In the initial phase, simulated weather warnings were issued from the NWS office at Norfolk.

Tornado Safety Room Service is being provided by the Holiday Inn, North Platte, NE. The management has developed and posted simple but clear instructions for the safety of their guests. The posted information describes watches and warnings, a system to receive them and actions to be taken--all typed in a space about 7" x 7".

WSO Grand Island Personnel on duty the evening of September 11 were busy releasing severe thunderstorm and tornado warnings. Nebraska Civil Defense contacted via NAWAS was requested to send a spotter to the north of Hastings to check for a tornado with a very strong thunderstorm in that area. The spotter reported hail and very heavy rain. The report enabled prompt release of a flash flood warning at 8 p.m. Without NAWAS the warning might not have been issued.

The American Radio Relay League, Inc. (ARRL) has updated the list of Section Emergency Coordinators of the League's Amateur Radio Emergency Service. The information dated August 1, 1977, form CD-239 (877) is available from George Hart, Communications Manager, ARRL, Inc., 225 Main Street, Newington, CN 06111.

Gary Crawford of the Office of Communications for Department of Agriculture taped interviews on May 31 with H.M. Mogil and H.S. Groper at NWS Headquarters. Interviews covered severe storms and preparedness programs of the NWS. Four, 3-minute documentaries will be sent to over 450 radio stations across the country and one 15-minute documentary for over 300 stations. Additional programs covering winter storms and flash floods have been proposed.

George Pericht, Hydrologist, WSFO Buffalo and members of NY State Department of Environmental Conservation conducted a test last June of a NY State Radio Communications Network back-up communications system. Developed for the Chemung River Basin in the southern tier counties, it will be used to relay hydrologic data and forecasts. The successful test was considered a significant step in improving NWS service to the public in the Chemung River Basin.

Joe Goldman, Eastern Region Headquarters met with the officials of Lancaster County, PA to arrange for a self-help forecast system for the county to improve flash flood warning capability. The county officials have also completed development of an extensive communications system and a new emergency operations center.

Emergency Broadcast System (EBS). The first year of a two-year joint effort by the broadcast industry, NWS, Federal Communications Commission (FCC) and the DCPA, to develop plans and procedures for use of the EBS for the dissemination of natural and man-made disaster warnings, has ended. Seminars and workshops were completed in 26 states.

Several states have completed written plans and procedures for use of the EBS at both the state and local levels. They are New Hampshire, New Jersey, Maine, Rhode Island, Georgia, Connecticut, District of Columbia, and Ohio. The rest of the states visited are engaged in developing written EBS plans and procedures. Thirteen other states have local operational area plans and procedures for large segments of their states. Between October 1 and December 31, 1977, another 12 states will be given EBS seminars/workshops (South Dakota, Virginia, Pennsylvania, Maryland, Delaware, Wisconsin, Alaska, Indiana, Louisiana, Colorado, Vermont, and Michigan). In 1978, EBS sessions will be held in seven states, Puerto Rico, and the Virgin Islands. This will complete all seminars and workshops.

The program has received strong support and participation by the NWS regional EBS focal points and Meteorologists and Officials in Charge of the various WSFO's and WSO's.

Warnings, Preparedness Save Lives in Missouri Outbreak. The May 4, 1977, outbreak of tornadoes, particularly those that occurred in Missouri, were perhaps the best examples of warning and preparedness in recent history. The Kansas City Times in an editorial on May 7, 1977, and the Sedalia Capitol newspaper both gave glowing accounts of how well the warning and preparedness systems worked. Fifteen tornadoes were reported in Missouri with the most significant striking Pleasant Hill (25 miles southeast of Kansas City). Pleasant Hill High School was severely damaged and its gymnasium was completely demolished. The most serious injury to the over 600 students and faculty was one broken leg. All students were in the school's hallways taking protective action when the tornado hit at 12:10 p.m. Tornado warnings were issued 10 minutes before the tornado struck the school. Perhaps the finest plaudit came from Grant Darkow, Professor of Atmospheric Science of the University of Missouri. Darkow wrote, "I have been making post storm surveys for over 20 years. This is the finest example I have ever seen of proper decisions being made and actions taken at critically important times by the National Severe Storms Forecast Center (NSSFC), Kansas City; the Columbia, Missouri NWS office; and local Civil Defense and law enforcement agencies.

A five-minute documentary film on the Pleasant Hill School has been distributed by the DP Staff throughout the field as a lesson to other schools on the value of tornado drills in schools. NOAA PA also produced 1-minute and 30-second TV Public Service spots and distributed them to about 500 TV stations in the most tornado-prone states.

J.E. Hurrall, Fire Marshall, Carteret County, NC, reports that their mobile home tie-down ordinance paid off when tornadoes touched down on June 9, just west of Moorehead City. Seventeen trailers were knocked off their foundations, but none of the trailers were overturned. Their tie-downs were sheared by flying debris.

In Tulsa, OK, a unique cable TV warning service called Cable Weather Warning System (WWS) was offered to the public. It's another effective warning dissemination channel to be added to a fine program already in Tulsa. Here's how it works. Through the cable installation in your home, an additional line can be extended. This new line is then connected to your FM radio or stereo receiver. With this new line you can receive WWS, in addition to the 18 stations which are a part of the regular FM service. When severe weather is forecast, you will tune your FM or stereo to a special station on the dial. On this station there will be no sound, just silence. Then, when the NWS in Tulsa issues a special weather warning, your radio will automatically sound an alarm signal. A few seconds later, you will hear the weather warning direct from the Tulsa office of the NWS. Only warnings affecting Tulsa County will be broadcast on this special FM station.

Another feature of the WWS is the special Channel 12 weather report. On this channel of your TV set you receive current Tulsa forecasts and conditions direct from the NWS at Tulsa International Airport. The reports are broadcast 24 hours per day.

Robert Beebe, MIC, Cheyenne, Wyoming, developed a brochure on Cheyenne weather which covers the climate, severe weather and how to obtain weather information. Printing costs were sponsored by a local church. Distribution will be through "Welcome Wagon" and by the Chamber of Commerce in answering requests for weather information.

KCMO TV-5, Kansas City, MO, recently aired a 30-minute special "Ten Hours of Tornadoes." As part of the program, a specially designed publication listing safety rules and defining WATCH/WARNING on one side was mailed to anyone sending them a self-addressed envelope. The brochure included a tornado tracking map very similar to our radar chart, containing both concentric circles of distances from downtown Kansas City and the outer ring showing bearings in degrees.



Philip Shideler, MIC and Gordon Brokaw, DPM, Topeka are working on a Preparedness Education Program for Kansas. In cooperation with the Shawnee County DCPA, a pilot program was initiated in 32 elementary schools in the Topeka area. More than 15,000 students will have seen the material consisting of films, slides, and short lectures relating severe storms to physical science.

The North Dakota Department of Public Instruction plans to introduce a bill in the next State legislative session making tornado drills in school mandatory. Meanwhile, they've recommended all schools in the State hold tornado drills several times a year. Arrangements have also been made for County Disaster Emergency Services Coordinators to visit all schools in the state next winter to assist in finding the safest places and help with tornado drill procedures.

Loren Hall, Weather Service Specialist, Aberdeen, SD, has recently conducted a two-day severe weather workshop at Northern State College. The fourteen science teachers were given an introduction to basic meteorology but the seminar concentrated on severe weather. The workshop will be a continuing part of the college program.

A Tornado Safety Poster Contest was sponsored by WFIE TV and Evansville, Indiana, Vanderburgh County schools. It coincided with the declaration of Disaster Survival Week and the National Disaster Survival Test carried on TV by NBC. Roland Loffredo, MIC, Evansville WSO was one of the judges.

From the Eastern Region's Outlook: "After reviewing "News From the Field" activity reports, there is little doubt that NWS employees enjoy a relationship with the public and local and county officials that is unique among Federal officials. It's one way to do the job-- and perhaps, the best way." We wholeheartedly share their views. Here's what some of the Eastern Region MIC's and OIC's have been up to:

"Marty Ross, MIC, WSO Atlantic City, NJ, participated in a Disaster Emergency Planning Seminar for that City. OIC Joe Vazzo, WSO Youngstown, discussed severe weather on Radio Stations WKBN (Youngstown) and WHHH (Warren). MIC Ed Heath, Akron, Ohio, and members of his staff are becoming well-known Radio/TV and public speakers, with talks on severe weather on ETV Stations, WAKR-TV's "Spectrum" (Tornado Preparedness), and WOIO's "People in the News" (Severe Winter Weather). Spotter training was also in high gear. OIC John Murray, WSO Williamsport, PA, had an excellent article on "Tornado Precautions" in the local paper. MIC Cliff Goodall, WSO Harrisburg, PA, had his entire crew out giving talks to Civil Defense Directors, schools, police and fire departments.

Harold Lowman, OIC, WSO Concordia contacted all law-enforcement agencies and civil defense directors in all of Concordia's 14 counties during the first half of 1977. Seventeen spotter training sessions were conducted and he gave four television interviews and taped five 15-minute radio interviews. In addition, safety spots were taped for use by 11 radio and TV stations during threatening weather situations.

The Staff Participation by personnel of WSFO Chicago has made possible a very active DP program: over 70 presentations, interviews, and severe weather seminars in about 6 months. In addition to the MIC, Principal Assistant (PA), and OIC at Midway, there were 12 forecasters and 2 Meteorological Technicians involved.

Norfolk-Madison County, NE, CD Agency has developed a tornado shelter symbol to designate shelter areas for shoppers caught away from home during a period when tornadoes threaten. Local merchants were consulted. Those who were agreeable, had their basements inspected and if apparently safe, this symbol was then displayed in their store window. The campaign was accompanied by suitable announcements in the news media. It was made perfectly clear that persons would use the shelters at their own risk with no liability to the store owner.



Dan Houser, MIC, WSO Lansing, has spent a lot of time working with the Michigan State Police in the completion of a NAWAS manual for severe weather operations. As a result of Dan's work, the Michigan State Police have now developed specific written requirements for fanning out tornado warnings to counties and broadcasters not on NWS. This has been badly needed for a long time.

Roland Loffredo, MIC, WSO Evansville has been busy with members of the Tri-State Amateur Radio Society (Indiana-Kentucky-Illinois). They are organizing and training a spotter network and are considering installation of a base station in the WSO.

Carl Weinbrecht, DPM, WSFO Des Moines reports a new wrinkle in spotter systems incorporated into the tornado safety plan of a Maytag plant in Newton, Iowa. During periods of tornado threats, TV cameras scan the horizon from south through west to north. The TV screens are monitored by security personnel.

Paul Woolard, OIC, Norfolk, NE, reports the local CB club has installed a base station in the WSO. A CB operator will report to the office to operate the radio during severe weather situations.

HAMS Tested and Proved Effective. The HAMS spotter system developed last year for southeastern Wisconsin worked great when a tornado was observed on April 2, 1977. Within 10 minutes of notification, the HAMS have two operators in the NWS, two in each of the EOC's (city and county), and two in the Red Cross. The HAMS also provide an excellent backup communications system during storm situations.

The Los Angeles District, U.S. Army Corps of Engineers and the National Weather Service recently reissued the pamphlet, "Danger! Flash Flood, Checklist for Survival." The revised safety rules listed under "Protect your Life" were coordinated by NWS DP Staff with Robert Bates, Public Affairs Office, Corps of Engineers.

NWS has Distributed Copies of "The Guide for Flood and Flash Flood Preparedness Planning." The material in the "Guide" enables community officials and planners to: assess the existing plan and warning system and decide what actions are needed to complete adequate and appropriate plans. For additional copies of the "Guide" write to Disaster Preparedness Staff, Wx5, 8060 13th Street, Room 420, Silver Spring, Maryland 20910.

Changes to May 1977 list of "Specially Designated Disaster Preparedness Personnel:

Phone number: WSFO Atlanta - FTS 246-7586  
 WSFO Topeka - FTS 752-2630

Replace Kenneth Brown, Oklahoma City, WSFO with Carl R. Aldridge.

Jene Hafele has been recently detailed as DPM, WSO Houston. This detail is for two years to work on the hurricane preparedness problems for that very vulnerable area.

# When you see a storm coming, remember this...



Lightning kills more people than  
tornadoes, hurricanes or floods —  
and you're a perfect lightning rod  
out there.

Get off the course. Live to play  
another day.

*Arnold Palmer*



A public service message from  
The National Weather Service,  
National Oceanic and Atmospheric Administration,  
U.S. Department of Commerce.