disaster preparedness report

National Weather Service

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# WHAT'S HAPPENING IN DISASTER PREPAREDNESS

## A Message from the Assistant Administrator for Weather Services

Hurricane Hugo and the Loma Prieta earthquake graphically illustrate how vulnerable mankind is to the natural forces that shape our environment. These events also point to the resources and capabilities that we as a Nation can apply now to the planning, preparation, and warning for natural disasters.

At the time of this writing, Hugo has been identified as the deadliest hurricane to strike the United States and its possessions since Camille ravaged the Mississippi and Louisiana coasts in 1969. In terms of dollar damage, it is easily three times as expensive as Frederic, the previous record holder. Nonetheless, timely watches, warnings, and preparedness activities kept the death toll, approximately 49, remarkably low for such a powerful storm.

High governmental officials from the Carolinas to the Caribbean, including Senator Hollings from South Carolina and Governor Hernandez Colon of Puerto Rico, have labeled the National Oceanic and Atmospheric Administration's (NOAA) warning and coordination efforts for Hugo a true success story. These words, and others like them, I consider directed to all of us in NOAA for the tasks involved in preparing for and dealing with a storm such as Hugo are monumental and involve every aspect of the organization. Timely warnings and forecasts cannot happen without data collection, guidance formulation, interpretation, and the development of future tools through timely research.

Warnings, however, are only as good as the response they elicit. This response depends upon well coordinated actions among responsible Federal, state, and local governments; the media; local decision makers; and volunteer organizations, such as ham radio spotters. In preparing for Hugo's onslaught, it was apparent that the entire emergency management community was in-step and spoke with one clear voice. We, in NOAA, are proud to be members of this team.

To everyone, then, who helped prepare for Hugo, thank you for a job well done!

Elbert W. Friday, Jr.

## MODERNIZATION

- National Weather Service (NWS) Modernization Activities NWS efforts to modernize and restructure its services through the use of enhanced technology and professionally trained staffing is rapidly intensifying. We provided a brief overview in the January 1989 Disaster Preparedness (DP) Report, but as a reminder for our readers and for those new to this Report, it is important to repeat some of that information before we present more specific details.

As an adjunct to the NWS Transition Program Office, which has overall responsibility for directing NWS modernization efforts, the Office of Meteorology (OM) and regional and field offices have combined talents within the Services Planning and Implementation Group (SPIG). The SPIG is chartered to define operations and services in field offices during the transition from current practices through Stage I and Stage II of NWS modernization. Stage I is defined in any field office when the latest technology is ready for operational use, i.e., NEXRAD (Next generation Radar), ASOS (Automated Surface Observation Systems), and System Z (AFOS enhancement). Stage II is defined when AWIPS-90 (the Advanced Weather Interactive Processing computer System) is operational.

The latest meeting of the SPIG and a special meeting of NWS's Regional Meteorological Service Division (MSD) Chiefs will be held at Weather Service Headquarters the week of November 13, 1989. The two meetings will be focusing primarily on issues relating to Stage I operations and the Modernization and Restructuring Demonstrations (MARD), which will occur within the Stage I time frame. Agenda items for the MSD meeting will include those relating to public and hazardous weather, and marine and aviation.

The following items are among the most important that the Warning and Forecast Branch of the OM is developing.

Area Weather Update

The Area Weather Update (AWU) (name not yet firm) is a statement intended to replace the Radar Narrative Statement (RNS) in all NEXRAD field offices. The AWU will be a combined RNS and (about) one hour "nowcast" in narrative format covering the office's entire NEXRAD coverage area (CWA). Initially, we expect it to be a non-routine product issued hourly whenever radar echoes are occurring. As skill increases we would expect other significant weather (e.g., temperature/wind discontinuities, including frontal passages; downbursts; fog; etc.) to be added.

To mitigate any extra workload caused by the AWU and to reduce the proliferation of products currently issued, the Warning and Forecast Branch proposes the following for the MSD Chief's consideration.

-- The AWU should replace virtually all shorter term Special Weather Statements (SVS).
-- In the warnings mode, SVSs should be confined to reporting only information directly related to the warning; other active (but not severe) weather that normally has been included in many SVSs would now go in the AWU.

-- Also, in the warnings mode, flexibility may be needed to allow frequency of issuance of the AWU to be increased to, say, 30-minute intervals as needed to incorporate information currently found in many SVSs.
-- Except in the most extreme warning crises, offices should strive to issue the AWU; we think the media will come to depend on it as the one product that captures a summary of all significant weather in the area.
-- It is very important that risk-reduction exercises take place in several early NEXRAD offices before the AWU becomes operational.

Discussions will include examples of AWUs for several weather scenarios. The overall amount of information included in the AWU, the type and amount of warning/watch/SVS information, and resultant product length, needs further resolution.

• READY-SET-GO Concept For a period of time, the "READY-SET-GO" (RSG) concept for the NWS's public warning programs has been entering discussions concerning future NWS operations. However, little background information regarding the concept has been available to the field. This article will present some RSG background information along with the concept's generic definition.

The NWS's public warning program includes hazardous weather associated with severe local storms (tornadoes and severe thunderstorms), winter weather, hurricanes, flash flooding, and high winds. Over the years, the procedures for preparing warnings and forecasts for hazardous weather have evolved along parallel but somewhat independent tracks. The definitions for watches and warnings for the different hazards now contained in the various Weather Service Operations Manual (WSOM) warning chapters all differ in some aspect or another. The RSG concept is the framework within which all public warning programs will exist.

The RSG Concept is a three-tiered system with each tier providing differing types of hazardous weather information. Generic definitions for the various tiers of the concept are listed below.

READY - This identifies whether or not a meteorological/hydrological hazard might develop.

SET - This is used when the threat of occurrence of a meteorological/hydrological hazard has significantly increased, but the occurrence is neither certain nor imminent.

GO - This is used when the meteorological/hydrological hazard is either imminent, is occurring, or has a high probability of occurrence.

RSG information shall be issued by the NWS under the following product types.

| CONCEPT | PRODUCT NAME |
|---|---|
| READY | OUTLOOK |
| SET | WATCH |
| GO | o WARNING<br>o ADVISORY |
| STATEMENTS | o SEVERE WEATHER<br>o SPECIAL WEATHER |

Note that there are two "GO" products: warnings and advisories. Warnings are reserved for situations posing a serious threat to life and property. Advisories are reserved for events which, although less serious, do cause significant inconveniences and, if caution is not exercised, could lead to life-threatening situations.

There are also two statement types. The severe weather statement is reserved for high priority and/or fast breaking situations where quick release of information would be vital (such as a follow up to a tornado warning). Special weather statements would be reserved for other follow-up information or for weather phenomena of interest that do not require a warning or advisory.

NOTE: As NEXRAD's come on line, the Area Weather Update (see previous section) will replace virtually all shorter term Special Weather Statements and be used to summarize most on-going hazardous weather.

As you can see, the RSG Concept is nothing new; it simply formalizes successful procedures that have evolved over the years. The concept will be utilized in the next revisions of the flash flood and winter weather WSOM chapters.

## WARNING AND FORECAST BRANCH BULLETIN BOARD

- Warning and Preparedness Meteorologist (WPM) Conference It has been about 2 years since the last WPM conference. Funding has been identified, and we have tentatively planned to have a WPM Conference in June or July 1990 in Boulder, Colorado. The central topic for the conference will be the Modernization and Restructuring (MAR) of the NWS. In particular, we plan to discuss the role of the Warnings Coordination Meteorologist (WCM), as a WPM will be called, in the MAR era.

Boulder was chosen because of the many aspects of new technologies and methodologies that are being developed there. We hope to have presentations from PROFS, where many ideas for AWIPS have been developed, and COMET (Cooperative Program for Operational Meteorology Education and Training), where a major portion of future training for our meteorologists is being developed. Also, we plan on having Dr. Christopher Adams, a former Emergency Manager in the Denver area under contract with the NWS, present recent findings on concerns of the emergency management community. Other possible agenda items include status of automation of Storm Data and the National Weather Event Database at the National Severe Storms Forecast Center and a training session on how to conduct a post-event survey.

Specifics on dates and location for the conference will appear in the January issue of the DP Report. We are looking forward to getting together in Boulder next summer!

- Cleaning and Repairing of Films and Videotapes The contract for cleaning and repairing of films and/or videotapes has again been awarded to the Modern Talking Picture Service, Inc. Please send any films or videotapes to Modern at the address below and be sure to include a description of the problem and a self-addressed franked mailing label inside each film container so that it can be mailed back to the sender. This is very important because shipping costs are not included in the contract. If you encounter any problems with the service, please contact Linda Kremkau, Warning and Forecast Branch, at (301) 427-8090. In the last few years, Modern has provided the Weather Service with very good service, and I know they will continue to do so in the future.

Modern Talking Picture Service, Inc.
5000 Park Street, N.
St. Petersburg, FL 33709
Attn: Patti Larkin

- Hurricane Hotline Benefits Red Cross Under Secretary John Knauss made his first National television appearance as NOAA Administrator on NBC's "Today" show on October 16, accompanied by TV weatherman Willard Scott. Dr. Knauss presented a check for $10,000, the proceeds of NOAA's hurricane hotline, to George Hutchins of the American Red Cross. The gift was made possible by a cooperative effort by NBC, NOAA, and USA Today, to provide the public with timely hurricane information on a toll hotline.

Concerning the number of calls to the hotline during Hurricane Hugo, there were 95,584 calls and 142,675 call minutes. The most calls ever received were for Hurricanes Gloria and Elena in 1985 with 700,000 calls recorded. Again, for the most current hurricane information, dial 900-410-NOAA. For the Pacific area, dial 900-410-WARN. Each call costs 50 cents for the first minute and 45 cents for each additional minute.

- List of "Known" Weather Radio Manufacturers Attachment A is a list of "known" weather radio receiver manufacturers and/or distributors. It's broken into two categories: general consumer grade and industrial/commercial grade.

- National AudioVisual Center's New Severe Weather Spotter Training Brochure The National AudioVisual Center recently sent out a sample copy of their new brochure "Media for Severe Weather Spotter Training" (see attachment B). Inside this pamphlet is information on how to order five spotter training programs. Last August, 5,200 copies were mailed to professors of meteorology, weathercasters at TV stations, civil defense agencies, disaster bureaus, emergency services, public safety agencies, meteorology book buyers, persons with meteorology as a hobby and persons who previously purchased materials from their WEATHER-WISE catalog. If you would like a free copy of the brochure, please contact Customer Services Section at (301) 763-1896 or write to the National AudioVisual Center, 8700 Edgeworth Drive, Capitol Heights, Maryland, 20743-3701. Quantities are limited.

- Brochures As of October 31, 1989, most of the brochures at the Kansas City Warehouse are readily available, but we are planning to reprint several publications for the spring severe weather season. They are:

| NOAA PA | Name | Copies |
|---|---|---|
| 76015 | NOAA Weather Radio | 100,000 |
| 81011 | Spotter's Guide | 50,000 |
| 82001 | Tornado Safety | 50,000 |
| 82004 | Watch Out, Storms Ahead | 25,000 |
| 83001 | Thunderstorms & Lightning | 50,000 |

One brochure that was reprinted recently was:

| NOAA PA | Name | Copies |
|---|---|---|
| 84001 | SKYWARN Spotter ID Card | 50,000 |

Included as attachment C to this DP Report is a current list of NWS brochures. Notice "SKYWARN Tips for Tornado Safety" Wallet Card (NOAA PA 76016) is not on the list. Unfortunately, it has been depleted and will not be reprinted in the future. Also remember, the maximum number of copies that can be obtained from the warehouse is still 300.

- National Boy Scout Jamboree NOAA's participation in the National Boy Scout Jamboree held August 2-8, 1989, was again a success. Approximately 34,000 scouts and scout leaders participated in this event. The National Weather Service, as part of the overall NOAA exhibit, set up an on-site weather office to receive and display vital weather data, provide forecasts and warnings to Jamboree officials, and show the scouts state of the art technology used in a weather office. This was the third time the NWS has participated in and provided weather support for the Jamboree which is held every 4 years. There were many employees who actively participated at the Jamboree but without the dedication and hard work of Hurtis Smith and Steve Billcheck, WSO Richmond, and Jim Belville and John Ackerman, WSFO Washington, the success of the NWS exhibit would not have been possible.

- Welcome New Staff Members The Warning and Forecast Branch has recently added two new staff members: Myron Berger and Gaudencio (Gody) Rivera. Myron came from the FAA Academy a few months ago where he was a meteorologist instructor. Prior to that, he was a journeyman forecaster at WSFO Omaha, Nebraska. Myron is our new public program meteorologist who will be assisting Rod Becker with the public forecast and dissemination programs. Gody just arrived from the Weather Service Forecast Office in Charleston, West Virginia. He has been a journeyman forecaster for the last 6 years at Charleston. Gody is our new warning coordination and hazard awareness meteorologist and is expected to take a lead role in focusing the NWS preparedness efforts. We welcome both of them to our staff and wish them much success.

## STATISTICS

- 1989 Hurricane Season So far to date, the 1989 hurricane season has produced 10 named storms -- 7 hurricanes and 3 tropical storms (listed below). On average, 10 tropical storms and 6 hurricanes develop annually.

Hurricane Hugo, by far the worst hurricane of the season, struck the Virgin Islands, Puerto Rico, and South Carolina killing approximately 49 people and causing devastating destruction with damage estimates around $9.5 billion.

The 1989 hurricane/tropical storms were:

| Name | Date | Type of Storm | Max. Winds | Category of Storm | Deaths | Damage Est. |
|---|---|---|---|---|---|---|
| ALLISON | June 24-27 | TS | 50 mph | | 11 | $500M |
| BARRY | July 9-14 | TS | 50 mph | | | |
| CHANTAL | July 30-Aug. 3 | H | 80 mph | 1 | 11 | |
| DEAN | July 31-Aug. 9 | H | 105 mph | 2 | | |
| ERIN | Aug. 18-26 | H | 100 mph | 2 | | |
| FELIX | Aug. 25-Sept. 8 | H | 85 mph | 1 | | |
| GABRIELLE | Aug. 30-Sept. 13 | H | 140 mph | 4 | | |
| HUGO | Sept. 10-22 | H | 160 mph | 5* | 49** | $9.5B*** |
| IRIS | Sept. 16-21 | TS | 70 mph | | | |
| JERRY | Oct. 12-16 | H | 85 mph | 1 | 3 | $ 15M |

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* Hurricane Hugo's lowest pressure was 918 mb and maximum winds were 160 mph (Category 5). Winds reaching 155 mph signifies a Category 5 storm on the Saffir/Simpson Scale.

** Below is the number of deaths by state/country for Hugo from the National Hurricane Center.

| | |
|---|---|
| South Carolina | 13 |
| North Carolina | 1 |
| Virginia | 6 |
| New York | 1 |
| Puerto Rico | 2 |
| U.S. Virgin Is. | 3 |
| Barbuda & Antigua | 1 |
| Guadeloupe | 11 |
| Montserrat | 10 |
| St. Kitts & Nevis | 1 |
| TOTAL | 49 |

*** Hurricane Hugo breakdown of damages: U.S. received $7 Billion; Puerto Rico and the Virgin Islands, $2 billion; and the rest of the other Caribbean countries, $.5 billion.

- 1989 - A Record-breaking Flood Year in the Eastern Region? Eastern Region Headquarters has been keeping statistics on county flash flood events which have occurred in the Eastern Region since 1979. From the period 1979-1988, 426 events have been recorded. Up to this year, the highest number of events on an annual basis was in 1987, when 113 were reported.

1989 has thus far shattered all previous records. From January 1 through July 22, 1989, 385 separate county events have been reported in the Eastern Region. This far exceeds the previous yearly record. If this pace continues, the total number of events will exceed the sum for the previous 10 years!

- Lightning Strikes in the Chicago Area During the period July 11 to August 11, 18 persons during four events in the Chicago western suburbs were hit by lightning. There was one fatality. The fatality occurred when four men on a golf course were huddled under an umbrella when lightning struck, knocking all four unconscious. It was later discovered that the man who died was not holding the umbrella but was the tallest in the group. If you're tall, it may pay to slump a little when walking/running in thunderstorm activity in the future!

Undoubtedly, many lightning strike victims are not included in the annual statistics each year, but four occurrences over a small, albeit heavily populated area, still seems out of the ordinary.

**SEVERE WEATHER AWARENESS CAMPAIGNS**

| State | Campaign | Date | Drill Date |
|---|---|---|---|
| Eastern Region | | | |
| Ohio | Winter Weather | Dec. 3-9, 1989 | |
| Central Region | | | |
| Wyoming | Winter Weather | Oct. 23-27, 1989 | |
| South Dakota | Winter Weather | Nov. 13-27 | |
| Nebraska | Winter Weather | Nov. 5-11 | |
| Iowa | Winter Weather | Nov. 15 | |
| Michigan | Winter Weather | Nov. 26-22 | |
| Michigan | Flood Awareness | Feb. 11-17, 1990 | |
| Michigan | Severe Storms | April 1-7 | April 4 |
| Southern Region | | | |
| Louisiana | Severe Weather | Feb. 12-16, 1990 | Feb. 14 |
| Mississippi | Severe Weather | Feb. 19-23 | Feb. 21 |
| Alabama | Severe Weather | Feb. 19-23 | Feb. 21 |
| Florida | Severe Weather | Feb. 19-23 | Feb. 21 |
| Georgia | Severe Weather | Feb. 26-Mar. 3 | Feb. 28 |
| Arkansas | Severe Weather | March 4-10 | March 8 |
| Tennessee | Severe Weather | March 4-10 | March 8 |
| Puerto Rico/ Virgin Islands | Hurricane | July 22-28 | |

## REGIONAL AWARENESS AND COORDINATION INITIATIVES

- Hurricane Information Meeting In July, Mary Jo Parker, WPM, WSFO Columbia, attended a Hurricane information meeting sponsored by the Town of Surfside Beach, South Carolina. Three parts of the 6-part Hurricane Preparedness videotape done in South Carolina were shown. Mary Jo presented information on the structure of hurricanes, tracking and predicting storms, the Saffir/Simpson scale, and hurricane probabilities, as well as other information. There were about 55 people attending, including representatives from local radio and newspapers. This was the first meeting of this type by the Town of Surfside Beach, but they hope to hold one every year from now on. The people attending the meeting were mainly year-round residents who seemed very interested in hurricane preparedness. Little did they know that South Carolina coastal area would suffer a major hurricane that very summer.

A follow-up report from Mary Jo reported that Surfside Beach did pretty well in evacuating everyone from the town in preparation for Hurricane Hugo. The hurricane awareness information Mary Jo provided really made a difference in saving lives in that community.

- Minnesota Weather Information Network (MN/WIN) MN/WIN, the NWS, and the Minnesota Department of Public Safety completed implementation of the Metropolitan Early Warning System point to point radio system. The system links the NWS by radio with nine county sheriffs who are responsible for sounding alarms and also informing the NWS of actual tornado sightings. This will improve communication of severe weather warnings in the Twin Cities metropolitan area.

In addition, a new MN/WIN Weather Information Communication Program developed with INTERTECH will provide weather information and warnings to all state employees using the statewide computer network system.

- Successful NWS Participation at Minnesota State Fair WSFO Minneapolis actively participated in the 1989 version of the Minnesota State Fair. The booth was staffed by volunteers from the WSFO, North Central River Forecast Center, and WSO's St. Cloud, Rochester, and International Falls. Rainer Dombrowsky and Les Coleman from the WSFO organized the effort. In addition to the usual displays and videotapes, over 6,100 recipes were offered for the tornado in a jar that was on display. There were a lot of sore wrists from spinning the tornado jar time after time. The display also included a radiosonde display and drawings for donated weather radios, rain gages, and two free balloon flights from a local club.

- WSO Springfield Supports Air Show For the fifth consecutive year, WSO Springfield, Illinois, provided support to the Air Rendezvous Air Show held August 25 through August 27 at the Springfield Airport. Between 60,000 and 70,000 people attended the show. About 150 pilots attended briefings each morning at 10 a.m. given by Ray Hughes, Dewain Hilliard, and Bob Wagner of the WSO Springfield staff.

- Winter Weather Seminar WSFO Phoenix, in cooperation with the Yavapai County Emergency Services and the City of Prescott Emergency Services, has arranged for a Winter Weather Seminar on October 24 in Prescott, Arizona. The seminar will focus on NWS's mission, watch/warning terminology, communications between senders and receivers of weather information, and various aspects of winter climatology and weather conditions.

- Microburst Video An excellent videotape was received from NCAR that details the events surrounding a significant microburst that occurred at Stapleton Field, Denver, Colorado, in July 1988. The video is called "The Day All Hell Broke Loose!" The microburst occurred just 9 days after a new Terminal Weather Doppler Radar (TWDR) system was installed. The videotape highlights how the TWDR output was used to alert aircraft and includes interviews from several pilots who experienced the microburst firsthand. Copies of the videotape can be obtained from Joanie Tanous at (303) 497-8433 or you may write to her at NCAR, P.O. Box 3000, Boulder, Colorado, 80307-3000.

- Flash Flood Awareness -- Tornado Spotters Meetings Don Gregg, OIC, WSO Dodge City, Kansas, has found favorable response to programs which include flash flood awareness. At tornado spotters meetings and at area schools, Don has been showing the videotape "The Awesome Power." This video has been well received by over 20 counties in southwest Kansas. Additionally, Don presented the videotape on a television program. Several civic organizations and public service companies have requested a flash flood program.

- Michigan Sea Grant's "Lightning and Boats" Publication In the last issue of the DP Report, we mentioned a new brochure by Michigan Sea Grant which featured lightning protection aboard boats. Unfortunately, what we failed to mention was the cost involved to obtain this brochure. To order a copy of "Lightning and Boats," fill out the attached form (attachment D) using order number "MICHU-SG-89-700" and send to Michigan Sea Grant College Program (address below). The costs are $.50 per copy or bulk rate (10 or more) $.25 per copy. Apparently, the requests for this brochure were very favorable and we apologize to the Michigan Sea Grant for any inconvenience.

Michigan Sea Grant College Program
Publications Office
The University of Michigan
2200 Bonisteel Boulevard
Ann Arbor, MI 48109-2099

- New York Statewide Police Information Network The New York State Police Information Network (NYSPIN) is a computerized dissemination system. National Weather Service messages are sent from WSFO Albany via NYSPIN to local agencies advising of storm watches, warnings, statements, etc. It has proved to be a very valuable example of government helping government helping people.

Recently, for example, WSFO Albany issued flood watches and warnings via NYSPIN prior to a heavy rain episode. The state police, in turn, notified their local highway department, a sewage/water treatment plant, and fire departments. In addition, they made a radio announcement on the fire department dispatch alert system advising of the impending rain.

The State Police solicited/received the following comments from those agencies the next morning and relayed to the WSFO:

Highway Department -- Highway Superintendent reported that the information was very useful as it allowed him to dispatch personnel to make sure catch basins, etc., were not plugged because of falling leaves.

Water/Sewage Treatment Plant -- reported that with the advance notice they were able to make adjustments in the plant for the treatment of above normal flow of water.

Fire Department -- personnel were notified and made themselves and equipment (portable pumps, etc.) ready in case of cellar pump-outs, etc. In addition, a neighboring Fire Department heard the announcement on the fire radio system. Because the Beaverkill River, which runs through the middle of their village, was mentioned as a possibility for flooding, they moved one of their fire-fighting vehicles to the other side of the bridge opposite the fire station so that if the river did flood, they would be able to respond with equipment from either side of the river.

All of the above agencies stated that the information was useful and hoped the police (using information issued from WSFO Albany) would be able to continue supplying them with updated messages, especially with the winter season approaching.

## STORM SPOTTERS

Maine Linemen as Storm Spotters Jim Vollkommer, AM/MIC, WSFO Portland, is exploring the possibility of using the Central Maine Power Company repairmen as storm spotters. This group can be especially helpful since they are in the field fixing power lines and poles, etc., and have two-way radio contact with their central offices.


## INTERNATIONAL AND U.S. DECADES FOR NATURAL HAZARD REDUCTION

Donald Wernly and Bob Muller of National Weather Service Headquarters and Ed Gross of NOAA's Office of Legislative Affairs participated in a two-day seminar convened by Senator Albert Gore to assess the roles and responsibilities of the public and private sectors in emergency management. Fifty leading individuals from the emergency management and hazards community from around the Nation were split into five working groups (Federal, state, local, private sector, and international) to assess how technology could be applied to the mitigation of natural and man-made disasters.

Though the seminar had been planned well in advance, its timing was extraordinary as the Loma Prieta earthquake occurred literally the day before. As Senator Gore pointed out in his opening remarks, the earthquake and Hurricane Hugo underscored the necessity that the Nation must become pro-active in dealing with natural and man-made disasters.

The focus of the seminar centered on four specific issues:

Exploration of present and potential policies related to emergency planning and response related to both domestic and international disaster situations.

Examination of current U.S. Federal department and agency emergency management roles and responsibilities.

Exposition of recent high-technology developments with a proven or potential emergency management decision support function.

Identification of action opportunities through legislative policy initiatives, new or revised governmental program implementation, or public/private sector collaboration.

The following items directly related to NOAA programs and goals were entered into an official record of the workshops.

Congress should fully support the modernization and restructuring efforts of the National Weather Service.

Recognizing that an informed citizenry is crucial toward ensuring a proper response during disasters, resources should be made available to agencies with active hazard awareness and preparedness programs to further develop appropriate educational materials.

Congress should support the inclusion of hazard awareness education and preparedness activities in the Nation's schools.

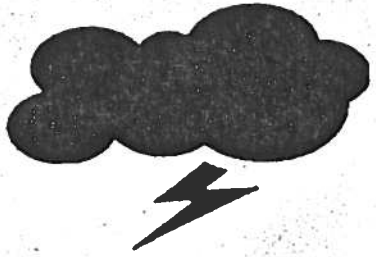
The private sector should be encouraged, through the U.S. Decade for Natural Hazard Reduction, to join forces with Federal agencies to support the development of appropriate awareness educational materials.

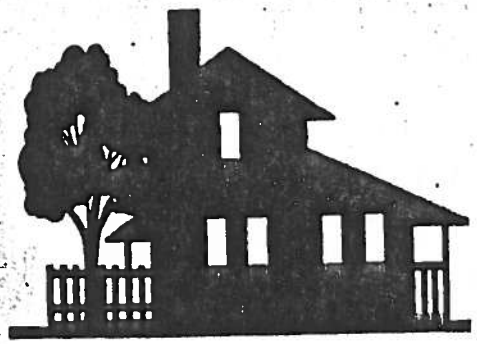
FEMA, in concert with other Federal agencies, should take steps to ensure that technical information needs of emergency managers are defined, that communications systems are available to reliably receive this information, and that emergency managers are properly trained in the use of that information.

An emergency management critical information dissemination system should be developed, as a demonstration project, for the islands in the Caribbean concerning the dual hazards of hurricanes and concomitant hazardous chemical spills. This project should demonstrate, on an international level, that critical information can be provided to emergency managers at the local level throughout the islands.

Following the seminar, Robert Lee Chartrand, Senior Fellow in Information Policy and Technology of the Congressional Research Service, indicated that an interim report would be prepared of the proceedings followed by a more formal publication later. Much of the information developed from the seminar would be used by Senator Gore in development of his congressional initiatives.

# MEDIA FOR SEVERE WEATHER SPOTTER TRAINING





Five programs on Severe Weather Spotter Training produced by the National Weather Service are available from the National AudioVisual Center.

**Not printed at taxpayer expense.**

ATTACHMENT B

# MEDIA FOR SEVERE WEATHER SPOTTER TRAINING

**TRAINING PACKAGE FOR:**

Meteorologists
Severe Storm Spotters
Community Awareness

**LEARN THROUGH:**

Exposure to real-time moving tornadoes

Examining the basic building blocks of convective storm structure

Discussions of various warning systems and safety procedures

*The first four programs provide an introduction to spotter training and tornado safety. The fifth, a new program, Advanced Meteorologist Spotter Training Slides, is designed for further training of the experienced spotter.*

*NEW PROGRAM*

**TORNADO - ON THE SPOT TRAINING**

A 22-minute program in color with an accompanying 12-page commentary. This program was produced in 1986 by the National Weather Service.

Tornado - On the Spot Training introduces severe storm spotters to the visual characteristics and vagaries of tornadoes.

Through this program, prospective spotters are exposed to real-time, moving tornadoes. This provides on-the-job training within a controlled environment.

Whether you watch for tornadoes as part of an official program or for your own safety, this program adds a new dimension to spotter training. It is a perfect accompaniment to other NWS training materials to build a strong base of informed, well-trained spotters.

| | |
|---|---|
| **VHS Video No. TOA17113** | **Sale $ 50** |
| **Beta 2 Video No. TOA17114** | **Sale $ 50** |
| **3/4" Video No. TOA17112** | **Sale $110** |
| **16mm Film No. TOA17111** | **Rental $40** |
| | **Sale $235** |

## TORNADO SAFETY IN RESIDENCES

A 130 color slide program with 33-minute audiocassette and script. This program was produced in 1979 by the Disaster Preparedness Staff of the National Weather Service.

This program will help you to identify and locate the best protection your home can provide, regardless of its design. Included in the program are examples of tornado damage to residential structures.

**Title No. TOA00796** **Sale $50**

## TORNADO PREPAREDNESS

A 67 silent slide program with accompanying script. This program was produced in 1976 by the Disaster Preparedness Staff of the National Weather Service.

While it is impossible to control the fury of a tornado, you can prevent the loss of life by developing a community warning system and planning safety procedures.

This program provides statistical data on tornadoes; classifies them by intensity and watch/warning capability; and advocates community planning. Various warning systems are discussed which allow people to act quickly and make correct judgments. Included are scenes from some of the larger, more destructive tornadoes and examples of that destruction.

**Title No. TO007886** **Sale $30**

## TORNADO - A SPOTTER'S GUIDE

A 16-minute program in color, produced in 1977 by the National Weather Service.

A trained spotter can truly make the difference between life and death by providing an early warning of severe weather conditions. This program aids in training community spotters to detect and report severe storms and tornadoes. It also assists in eliminating false tornado reports. Trained personnel and a well-prepared community will save lives.

| | |
|---|---|
| **VHS Video No. TOA11322** | **Sale $40** |
| **Beta 2 Video No. TOA13947** | **Sale $40** |
| **3/4" Video No. TOA07843** | **Sale $95** |
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ATTACHMENT C

# NWS Publications

| NOAA PA | NAME |
|---|---|
| 70027 | Survival in a Hurricane (Wallet Card) |
| 74025 | Tornado Safety Rules in Schools |
| 76015 | NOAA Weather Radio |
| 76018 | Lightning Safety (Wallet Card) |
| 77014 | Flash Flood (Wallet Card) |
| 77015 | Flash Flood (Wallet Card) (Inundaciones Repentinas (Spanish Version of 77014) |
| 77020 | Hurricane Tracking Chart (Atlantic) |
| 77021 | Hurricane Tracking Chart (Eastern and Central Pacific) |
| 78019 | Storm Surge and Hurricane Safety with North Atlantic Tracking Chart |
| 79013 | Public's Guide to General Weather Information |
| 79018 | Winter Storms |
| 80003 | Riding Out Winter Storms (Wallet Card) |
| 81010 | Floods, Flash Floods, and Warnings |
| 81011 | Spotter's Guide for Identifying and Reporting Severe Local Storms |
| 82001 | Tornado Safety |
| 82002 | Dust Storm Driving Safety (Wallet Card) |
| 82004 | Watch Out Storms Ahead |
| 83001 | Thunderstorms and Lightning |
| 84001 | SKYWARN Spotter ID Card |
| 85001 | Heat Wave |
| 85002 | Hawaiian Hurricane Safety Measures with Central Pacific Tracking Chart |
| 85005 | Tornado Safety Tips (Como Protegerse En Caso De Tornado) (Wallet Card) |
| 85006 | Survival in a Hurricane (Como Sobrevivir En Un Huracan) (Spanish Version of 70027) (Wallet Card) |
| | SKYWARN Decal |
| | The Naming of Hurricanes |
| Poster 923 | Tornado Safety Rules |

ATTACHMENT A

# NOAA WEATHER RADIO RECEIVERS MANUFACTURERS LIST

## CONSUMER GRADE

Electrolert (WeatherAlert)
4949 South 25A
Tipp City, OH 45371
(513) 667-2462
Small table top

Springfield Instrument Company
76 Passaic Avenue
Woodridge, NJ 07075
(201) 777-2900
Small table top

Cobra
Dynascan Corporation
6500 West Cortland Street
Chicago, IL 60635
(312) 889-8870
CB w/weather band & scanners

UNIDEN (Bearcat)
4700 Amon Carter Blvd.
Fort Worth, TX 76155
(817) 858-3300
Scanners

Sonar Radio Corp
3000 Sterling Road
Hollywood, FL 33021
(305) 981-8800
Mobile/personal pager type

Radio Shack
2617 West 7th Street
Fort Worth, TX 76107
(817) 390-3011
Small table, CB w/WX band and scanners

Midland International
P.O. Box 419903
Kansas City, MO 64141
(816) 241-8500
Small table top & CB w/WX band

Maxon Systems Inc.
10828 NW AirWorld Drive
Kansas City, MO 64153
(816) 891-1093
Small table top

PANOR Corp.
125 Cabot Court
Hauppauge, NY 11788
(516) 434-1200
AM/FM Car & table top w/WX band, marine, & multi-band

## INDUSTRIAL GRADE

Federal Sign and Signal Corp.
2645 Federal Signal Drive
University Park, IL 60466
(312) 534-3400
Table top & integrated systems

Gorman-Redlich Manufacturing Co.
6 Curtis Street
Athens, OH 45701
(614) 593-3150
Rack mount for Radio/TV/CATV

Motorola, Inc.
Customer Service
2955 Snow Road
Parma, OH 44130
1-800-247-2346
Table top & integrated systems

CATEL, Inc.
4050 Technology Place
Fremont, CA 94537
(415) 659-8988
Rack mount for Radio/TV, CATV

General Electric Co.
9500 Williamsburg Plaza
Louisville, KY 40222
1-800-626-2000
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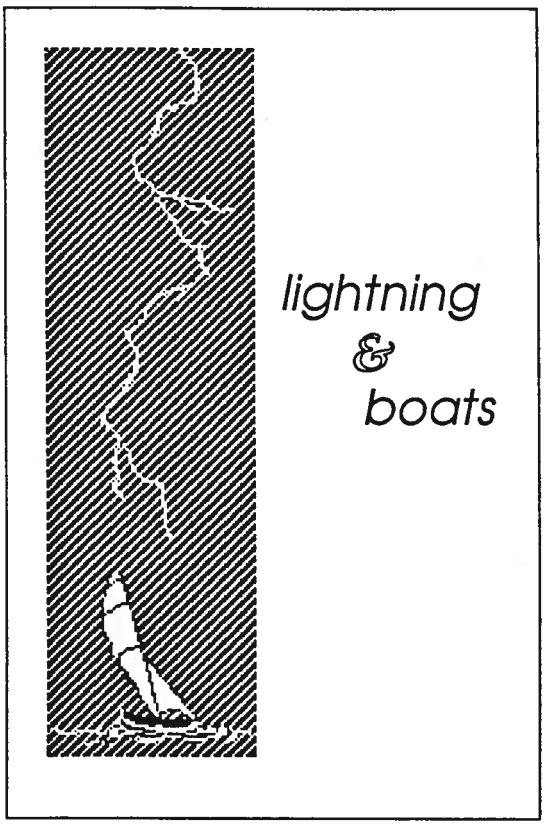


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