

# AWARE

WINTER 1990/91

**NATIONAL WEATHER SERVICE** / *Warning Coordination and Hazard Awareness Report*

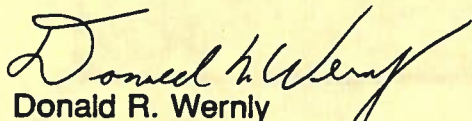
## HAZARD AWARENESS MATERIALS

Aside from the actual warning process, one of the most important things the National Weather Service (NWS) can do is to ensure that our Nation's citizens know how to respond when confronted with a life-threatening weather hazard. This education process is not trivial. The public must be aware of the potential weather hazards in their area, must acknowledge that it is in their interest to learn the appropriate safety rules, must be willing to develop family and community action plans, and finally, must be prepared to act when disaster threatens.

The awareness and preparedness materials developed by the NWS and other hazards response agencies are a vital tool for this education and preparedness process. Unfortunately, many of the materials available from the NWS need to be updated.

My ultimate goal is to bring on board a Warning Coordination Meteorologist (WCM) Program Leader in the Warning and Forecast Branch. This individual would oversee the entire Warning Coordination and Hazard Awareness Program, including the development of new awareness materials. Until that goal can be realized, I would like to encourage field personnel involved in the Warning Coordination and Hazard Awareness Program to consider accepting a temporary detail to Weather Service Headquarters (WSH) in Washington, DC, to assist us in updating our awareness materials. Each assignment would last from 2 to 6 weeks. More information on temporary assignments will be made available as the budget picture comes into better focus.

Now, our branch needs to hear from you. Where are your needs not being met? Which materials need minor revisions and which need to be totally redone? Concerning brochures, which format works best? What slides could be used to enhance our present sets? Have we targeted the right audiences? For what groups are materials lacking? Which materials should be updated first? If you have ideas, send in your proposals or give me a call. I urge you to help us develop the awareness materials necessary to do the job properly.

  
Donald R. Wernly  
Chief, Warning and Forecast Branch

**U.S. DEPARTMENT OF COMMERCE • National Oceanic and Atmospheric Administration**

AWARE Report is an administrative document, issued by the National Oceanic and Atmospheric Administration, for the information and use of the agency and the natural hazard community.





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**PLEASE SHARE THIS COPY OF THE "AWARE" REPORT WITH OTHERS IN YOUR OFFICE**



## MODERNIZATION

### NWS and The Weather Channel (TWC)--Enhanced Cooperation - *Becker*

The NWS has been cooperating with TWC since its inception to provide the public with the most timely and accurate weather information. This includes TWC's broadcasting with appropriate attribution of NWS products as written. In fact, in large measure, TWC owes its existence to NWS information. But it is not just a one-way street. Considering that it now reaches into 50 million homes, TWC plays a significant role in helping the NWS fulfill its mission.

This cooperative effort will become even more important over the coming years as the NWS gears up for the modernization and associated restructuring (MAR) of the Agency. (NWS coordination efforts will also be intensified for all aspects of the media and other users.) Accordingly, a memorandum of agreement (MOA) is being prepared for NWS and TWC approval. A key stipulation will be the display of NWS attribution on air by use of the NOAA logo and voice-over reference to NWS products.

TWC understands the value of the integrated warning approach where not only are detection, warning, and timely dissemination important, but just as important is public perception of risk and appropriate response to the hazards of severe weather and flooding. TWC, therefore, is keenly interested in working with the NWS and others in the hazards community, such as the Federal Emergency Management Agency (FEMA) and the American Red Cross, in producing educational and awareness material. These issues will also be addressed in the MOA.

Current MAR plans in the public arena, among many proposals being reviewed, call for format changes and repackaging of certain products as well as a significant increase in the number of downsized zones. Because TWC's operations will be directly affected and because their priority is to work very closely with the NWS, they have proposed periodic meetings to exchange ideas and share future capabilities. The ultimate goals of these meetings are to enable each organization to more effectively plan for and use the products/services of the other while providing appropriate advance notification of any changes before implementation.

TWC hosted the first of these meetings at their facility in Atlanta, Georgia, on January 22, 1991. The second meeting was held at WSH on February 20, 1991. Among the many items on the agenda, paramount was the discussion on the zone reconfiguration. Adjusting software and hardware to accommodate the large increases in zones is a significant budget consideration for TWC. So they were keenly interested in learning that current planning (not yet firm and dependent on risk reduction exercises) calls for the reconfiguration to adopt the one county-one zone concept for most of the eastern two-thirds of the country probably in 1993. Although individual county forecasts could be issued, for the most part counties would be used as "building blocks" to assemble zone combinations that most appropriately reflect the mesoscale, or short-term, weather scenario. Preliminary results of the ongoing county zone experiment in Michigan show that the forecaster is enjoying increased flexibility in providing more accurate site-specific



forecasts--to the approval of most local users. Wyoming is also expected to experiment with a significant zone reconfiguration beginning this summer.

Much of the rest of the country from the Rockies westward and Alaska will reconfigure zones once all of those offices have AWIPS, probably in 1994 or later. Current plans call for the reconfiguration to adopt smaller size zones, but maintain the present climatological/topographical concept. This is valid for the West where weather follows climatology and terrain features and would not be amenable to using counties as building blocks.

### **Emergency Broadcast System (EBS) - Becker**

This is a correction to the article on EBS in the October 1990 issue of "AWARE." Specifically, the second paragraph, third sentence, which read, "In addition, FEMA has recently funded the implementation of WRSAME (NWR Specific Area Message Encoder) in all New York State NWS offices and EBS stations," is not quite right. It should be replaced with the following:

"FEMA has approved funding for the purchase of 54 NWS (NOAA Weather Wire Service) installations in EBS (CPCS-1 and CPCS-2) stations in New York State. Implementation is expected shortly. In addition, FEMA is planning to seek additional funds for the purchase and implementation of WRSAME in NWS NWR offices and EBS stations."

## **WARNING AND FORECAST BRANCH INITIATIVES**

### **Weather Service Operations Manual (WSOM) Chapters - Wernly**

A major effort for the Warning and Forecast Branch this year is the updating of many of our WSOM chapters. The normal time frame for updating a chapter is about one year. Though this might sound excessive, it is not when one considers the amount of coordination necessary to arrive at a coherent national policy.

In the Warning and Forecast Branch, we are concerned how proposed policies will affect local office operations. It has always been our intent to formulate guidelines that leave considerable regional and local flexibility in their implementation. Draft chapters are circulated to the regional offices with at least a 6-week response deadline to ensure that the regions have time to solicit field input to our proposals. If regional responses are considerably at odds with one another or with the proposals, then a new draft chapter is developed and the process is repeated.

Listed below are the chapters we have targeted to work on this year. Our intention in listing them in this report is to ensure that both NWS field personnel and the users of our products know what initiatives we will be working on and where potential changes to program policy may be occurring. We encourage all of you to give thoughts to the various programs covered in these chapters.

For NWS personnel, we urge you to review these chapters and be prepared to provide your opinions through your station management when asked by your regional office. Individuals outside the Weather Service should direct any concerns you have about these and other programs to our branch.

<u>WSOM CHAPTERS</u>	<u>STATUS</u>
C-10, State and Extended Forecasts	Revisions to include possible changes to period-by-period format and/or combining products.
C-11, Appendix A, Zone and Local Forecasts	Needs updating to include many forecasts zone changes since last issuance on 8/4/87. Will require professional graphic arts services.
C-20, National Public Weather Products	Complete rewrite needed.
C-21, Local and Regional Statements, Summaries, and Tables	Complete rewrite needed.
C-40, Severe Local Storm Warnings	Needs updating to incorporate relatively minor changes in procedures. Will need to include any policy related to the use of WSR-88D.
C-41, Hurricane Warnings	OML will be issued covering minor changes from NOAA and Interdepartmental Hurricane Conference discussion and coordination.
C-42, Winter Weather Warnings	Complete rewrite in progress.
C-44, New Chapter (to include weather events that do not fit nicely into other chapters, such as high wind, dust, and fog)	Writing in progress.
C-47, County Warning Areas	Needs updating to incorporate recent changes in county warning area responsibility. When rewritten, the chapter will be structured so that the listing of responsibility will be in an appendix. This will allow for more efficient updates to the chapter in the future.
C-49, Warning Coordination and Hazard Awareness Program	Now in final review at WSH and will soon be forwarded to the union for review.
F-42, Storm Data and Related Reports	Complete rewrite will be required; information gathering in progress; and draft will begin once automation issues resolved.



### New NOAA Directive Manual Chapter - *Wernly*

The Warning and Forecast Branch, in concert with Bob Jacobson of the Marine and Applied Services Branch, have been working on a new NOAA Directives Manual Chapter to update the current chapter on Severe Weather Incidents and Natural Disaster Surveys.

The impetus for updating this Directive stems from the fact that it is the major policy statement on how NOAA Natural Disaster Surveys should be conducted. Following the recent surveys conducted for Hugo; Shadyside, Ohio; Plainfield, Illinois; Huntsville, Alabama; and Coldenham, New York, we felt that the present Directive could be enhanced to more clearly replicate what actually occurs during a survey and to provide better guidance for future surveys. One of the major additions to the new chapter is an expanded outline for how a survey report should be structured. This structure has also been revised to accommodate the concepts of the Integrated Warning Program.

The draft chapter is nearing completion and should be ready for regional review shortly.

### Hurricane Program - *Sokich*

During the week of January 28, the National Hurricane Center in Coral Gables, Florida, hosted the first of two Hurricane/Storm Surge Workshops. Emphasis was on the Gulf of Mexico hurricanes. Attendees were from NWS offices and emergency management offices which could be directly affected by Gulf storms. A field trip to the Charles Deering Estate on Biscayne Bay enabled the class to get a first-hand impression of a storm surge. The class resurveyed the high water mark at the estate and determined the height of the storm surge during one of southern Florida's strong hurricanes. The second workshop is scheduled for the last week in February and will focus on Atlantic/East Coast hurricanes.

The 45th Interdepartmental Hurricane Conference took place during the first week of February at Homestead AFB, Florida. The conference focused on hurricane operations during the last year and plans for the upcoming season. Presentations covered many topics, including the future of hurricane reconnaissance and research programs directly related to hurricane warning or prediction. The keynote address was the Recap of the Tropical Cyclone Motion (TCM-90) Field Experiment in the West Pacific and the huge positive impact of the data that the experiment provided. A final note of importance is the disestablishment of the U.S. Air Force 53rd Weather Reconnaissance Squadron, the "Hurricane Hunters." The Air Force Reserves (AFRES) will assume full responsibility for the entire reconnaissance program on April 1, 1991. AFRES has been flying a portion of the recon flights in the past so they are quite familiar with the program. The "Hurricane Hunters" have been in existence for 45 years, and we wish to thank all past and present members of the 53rd Weather Reconnaissance Squadron for their extraordinary efforts.

### **Article on NWS Public Service Program - Berger**

A short article on the NWS role in Public Safety will appear in the July issue of the World Meteorological Organization (WMO) Bulletin. This article is intended to address three questions for countries considering establishing a weather service. They are: (1) should a country have a weather service?; (2) what should be its mission?; (3) what should be its relationship to other agencies, government, officials, the media, and the private sector? To help answer these questions, the NWS roles in the Integrated Warning Program and hazard awareness activities are highlighted. Also included is a brief overview of how the NWS provides general forecasts while the private sector "adds-on" value to NWS products for specific client needs.

### **Changes in Amateur Radio License Requirements - Read (KB5FYA)**

A survey of NWS spotter networks in the mid-1980s indicated that 30,000 (about 25%) of our spotters were amateur radio operators (HAMs). Because of their excellent communications capabilities, some of our most effective spotter networks are operated by HAMS. In many NWS offices, a volunteer amateur spotter will come in and man a station in the operations area during severe weather. In some of our offices, NWS employees have become HAMs. Communications with the HAMs is enhanced when NWS staff are also licensed operators. Not only can we participate on the air during spotter operations, but being "one of them" improves interaction between the NWS and the spotters.

A recent change in requirements for the Technicians Class license for Amateur Radio may provide an opportunity to increase this group of storm spotters. Until this year, the requirements for a HAM license included developing a minimum proficiency in Morse Code. This requirement has proved to be a stumbling block for many people seeking a license--including myself. Under the new FCC regulations as of February 14, 1991, a Technician license will require only a written examination.

The new license requirements will make it easier for those of us with a "language barrier" on learning code to get a license. I would encourage NWS employees who have an interest in working with spotter organizations to obtain the license. Just let an amateur spotter in your area know you are interested, and he or she will eagerly show you how to get on the air.

### **Storm Data--The Publication - Read**

The March 1990 issue of Storm Data just arrived with a dramatic cover photo of the Hesston, Kansas, tornado that occurred on March 13. The editor, Roger Tanner, National Climatic Data Center (NCDC), has continued to make improvements in the appearance and readability of the publication. Users of the publication, especially Warning Preparedness Meteorologists (WPM), are encouraged to review this latest issue and give us feedback.



Efforts continue on reducing the time it takes from receipt of the data to printing. The next step will be to automate the input from the WPMs to the National Severe Storms Forecast Center (NSSFC) and NCDC. Currently, NCDC retypes all the data into WordPerfect files for desktop publishing. Roger is working on a relatively simple data entry method for the WPMs using WordPerfect 5.1. When ready (hopefully by early March), a test version of his software will be sent to the regions and NSSFC for review. Once a workable program is agreed upon, new instructions will be developed (rewrite of WSOM Chapter F-42). Details on this will be forthcoming through the regions.

Vince Miller, associate editor of Storm Data, is responsible for the pictorial features in the publication. Vince is developing an extensive list of contacts including WPMs, research meteorologists, private meteorologists, and the media as sources for feature photographs. We (NWS WPMs) could help Vince in this area by sending copies of newspaper photos of significant events in each office's area. If you include the name and telephone number of the source, he will contact them for negatives or quality prints. A short paragraph of the circumstances surrounding a significant or unusual event will help also. Send input and/or comments to:

Vince Miller  
1464 Wood Thrush Way  
Marietta, Georgia 30062

Tel: Home: 404-977-7603  
Work: 404-433-5134/5135

**EBS article on FCC Newsletter - Becker**

The EBS staff of the Federal Communications Commission (FCC) has been so impressed with the AWARE Report that it has decided to issue a newsletter of their own based on this concept. Called the "EBS Chronicle," it will reach radio, television, and cable television broadcasters with EBS developments. In addition, the NWS will be invited to supply articles on modernization and other topics of interest to broadcasters. The EBS staff of the FCC's Field Operations Bureau will be publishing the Chronicle quarterly with the premier issue expected to be available in March. Please direct any questions to the EBS staff at (202) 632-3906.





**Decade of  
Natural**



**Disaster  
Reduction**

## **INTERNATIONAL DECADE FOR NATURAL HAZARD REDUCTION**

### **Economic and Social Commission for Asia and the Pacific (EASCAP)/WMO Typhoon Committee Meeting in Seoul, Korea - Wernly**

I was the U.S. Observer at the Twenty-third Session of EASCAP/WMO Typhoon Committee Meeting in Seoul, Republic of Korea, from November 13-19, 1990. Attendance at the meeting included delegates from China, Hong Kong, Japan, Malaysia, the Philippines, the Republic of Korea, Thailand, and Vietnam. Observers at the session represented Germany, the Union of Soviet Socialist Republics, the Commission for Atmospheric Sciences of the World Meteorological Association, the United Nation's Development Program, and the League of Red Cross and Red Crescent Societies.

One of the main themes of the meeting was how the Typhoon Committee could support the International Decade for Natural Disaster Reduction. Members of the Committee have already organized national committees to implement the objectives of the Decade. Some of the activities that have been accomplished include the development of visual aids to depict the theme of the Decade, the issuance of government proclamations encouraging celebrations highlighting the Decade and heightening public awareness, and preparing plans to be undertaken with international organizations associated with the United Nations.

The Committee reviewed a project document titled "The Reduction of Natural Disasters Related to Typhoons" that was prepared in response to the Committee at the Twenty-second session. During the review, it was decided that the project should be structured to support the Decade and to involve more countries within the region. The goals of the project are:

Upgrading the capabilities of National Meteorological and Hydrological Services for forecasts and warnings.

Provision of data analyses for structural design for reducing typhoon and flood damage.

Training Meteorological, Hydrological, and disaster prevention agency staff.

Establishment of a Regional Typhoon Research Center.

Preparation of manuals and guidelines for integrated river system development and management with reference to comprehensive flood loss management and prevention.



Preparation of guidelines for the formulation of a master plan for urban flood loss prevention and mitigation.

Another main concern at the meeting was the necessity to strengthen the Committee's Disaster Preparedness component. This is almost an exact equivalent to our Warning Coordination and Hazard Awareness Program. During the meeting, I discussed the Integrated Warning Program and the need for an informed citizenry capable of acting in a predetermined or learned manner when threatened with a natural hazard.

As in the U.S., funds for awareness materials in the countries comprising the Typhoon Committee are very tight. I stressed the need to work with the private sector toward the development of awareness materials and the printing of brochures. As a result, the Committee decided to set as a goal the active involvement of the private sector in their preparedness planning and development efforts.

## **WARNING COORDINATION AND HAZARD AWARENESS BULLETIN BOARD**

### **Indiana Plans to Test Tornado Drill Plans as Schools Dismiss for the Day**

The State of Indiana, supported by the NWS, will conduct its 1991 tornado drill at a time when most schools will be dismissing students for the day. In addition to the traditional exercise of communications systems and shelter procedures in other facilities, the plan is to test the schools' ability to get students from buses, etc., back into the designated shelter areas quickly. After 12 years of testing classroom tornado preparedness, it is time a more realistic scenario is tested. The highest frequency of tornadoes have struck just as students were being released for the day. (Please note the article, "Severe Weather Awareness and School Buses" in the October 1990 issue of the AWARE Report which discusses concerns of school bus drivers and what to do when a tornado warning is in effect at the time school lets out or while enroute.)

### **WSO Fresno's Weather Spotter's Guide**

Jeff Osiensky, WPM Fresno, California, recently completed a weather spotter's guide which serves many purposes, the two most important being: (1) how to interpret weather phenomena and (2) the proper means of relaying this information back to the NWS. This spotter's guide was developed with the intent to incorporate formal classroom training. As it now stands, an untrained observer using this guide would be able to assist the NWS by reporting severe weather events. A structured approach to training will be used within the spotter program at WSO Fresno. This will prove beneficial in keeping the level of interest high within the program in an area which experiences fewer severe weather events and maintaining a continuous flow of information between the spotters and the NWS.



## Wyoming Soon to Have Weather Wire to State Computer Link

Approval was recently given by the State of Wyoming to link the Wyoming Criminal Justice Information Network directly to the weather wire. This link is a big step for Wyoming and the NWS. Once the software is written, warnings and statements will be disseminated statewide to every drop in the system. This will mean that all sheriff's offices, police departments, and dispatchers should get NWS information on severe weather as soon as they exit the weather wire. The system is expected to be operational early in 1991. Central Region is closing in on having 100 percent of its states with this capability.

## **NATURAL HAZARD STATISTICS**

### Tornado Statistics for 1990 - *Kremkau*

Preliminary tornado statistics for 1990 indicate that 53 people died from tornadoes, 3 more than in 1989. The 30-year average for tornado fatalities is 82. This is the fifth year in a row that the number of fatalities was lower than the 30-year normal.

1986	-	15
1987	-	59
1988	-	32
1989	-	50
1990	-	53

Illinois suffered the most deaths with a total of 30; Indiana recorded 8 deaths; Mississippi and Virginia, 3 each; Kansas, Arkansas, and Texas, 2 each; and Oklahoma, Ohio and South Carolina, 1 each. In 1990, the worst tornado disaster occurred at Plainfield/Crest Hill, Illinois (40 miles southwest of Chicago), where 29 people died.

The low fatality figures are remarkable despite the increase in tornado frequency. In fact, 1990 set a new record with 1,121 for the total number of tornadoes in the United States. The previous record was set back in 1973 with 1,102 tornadoes. The low number of deaths reflects not only improvements in the watch and warning program, but the significant progress that has occurred in our awareness and preparedness activities.

### ...More Interesting Tornado Statistics - *Read*

The following information was reported in the January 18, 1991, issue of MMWR Morbidity and Mortality Weekly Report prepared by the Centers for Disease Control.

"Based on studies of previous tornadoes, persons aged >60 years are seven times more likely to be injured than persons aged <20 years because of factors, such as medical illnesses, decreased mobility, decreased ability to comprehend and rapidly act on tornado warnings, and greater susceptibility to injury."



**50-Year Severe Weather Fatalities - Kremkau**

Bill Alexander, Southern Region Headquarters, recently produced bar charts (using Harvard Graphics) of the 50-year list of severe weather fatalities that appeared in the October 1990 AWARE Report. One of the charts represents all the Severe Weather Fatalities from 1940 to 1989. Four other graphs show lightning, tornado, flood, and hurricane deaths for the same period. All five charts are included as attachment A. The "Lightning" bar chart denotes the most significant and gradual decline in fatalities over the last 50 years mostly due to the increased NWS awareness activities of our WPMs. These charts are excellent for use in hazard awareness presentations and will eventually be incorporated into our hazard awareness slide sets.

**SEVERE WEATHER AWARENESS CAMPAIGNS**

<u>State</u>	<u>Campaign</u>	<u>Date</u>	<u>Drill</u>
<b><u>Eastern Region</u></b>			
South Carolina	Severe Weather	Mar. 4-10	
Ohio	Tornado Safety	Mar. 17-23	Mar. 20
Pennsylvania	Severe Weather	Apr. 7-13	
Ohio	Flood Safety Week	May 5-11	
<b><u>Southern Region</u></b>			
Alabama	Severe Weather	Feb. 11-15	
Mississippi	Severe Weather	Feb. 11-15	
Georgia	Severe Weather	Feb. 25-Mar. 1	
Louisiana	Severe Weather	Feb. 4-11	
Florida	Hazardous Weather	Feb. 24-Mar. 2	Feb. 27
North Texas	Severe Weather	Mar. 10-16	
West Texas	Severe Weather	Mar. 17-23	
New Mexico	Severe Weather	Apr. 15-19	
<b><u>Central Region</u></b>			
Michigan	Flood	Feb. 17-23	
Kansas	Severe Weather	Mar. 3-9	Mar. 5
Illinois	Severe Weather	Mar. 3-9	Mar. 5
Indiana	Severe Weather	Mar. 3-9	Mar. 7
Missouri	Severe Weather	Mar. 4-8	Mar. 5
Kentucky	Severe Weather	Mar. 10-16	Mar. 12
Nebraska	Severe Weather	Mar. 31-Apr. 6	Apr. 3
Iowa	Severe Weather/ Flash Flood	Mar. 31-Apr. 6	Apr. 3
Wyoming	Severe Weather	Apr. 1-5	Apr. 4
Wisconsin	Severe Weather	Apr. 6-13	Apr. 11
Minnesota	Severe Weather	Apr. 7-13	Apr. 11
South Dakota	Severe Weather	Apr. 8-12	Apr. 11
Colorado	Severe Weather	Apr. 14-20	Apr. 17
Michigan	Severe Weather	Apr. 14-20	Apr. 17
North Dakota	Severe Weather	May 13-17	May 16



## **PUBLICATIONS AND AUDIOVISUALS**

### **The American Red Cross Family Preparedness Campaign - *Kremkau***

Last fall, the American Red Cross kicked off a year long Family Preparedness Campaign. The goal is to reach one million households with information about how to prepare for floods, hurricanes, tornadoes, earthquakes, and fires. As part of this effort, Red Cross has produced several new colorful brochures. One side provides basic safety tips, and the other side is for families to fill in with the details of their family plan. As an example of one of the brochures, see Attachment B, "Are you Ready for a Hurricane?" (This particular brochure is also available in Spanish.)

To obtain copies, call your local Red Cross chapter and ask for the "Are You Ready?" brochures (ARC 4454-58). For more information on the campaign, call Lynne Filderman at (202) 639-3408 or Rocky Lopes at (202) 639-3656.

### **BIG BIRD GET READY For Floods - *Kremkau***

FEMA has graciously contributed 400 copies to Weather Service Headquarters of the new, recently-printed, "BIG BIRD GET READY For Floods" kits and cassettes. This is the third in a series of natural hazards materials for children and their families developed by Children's Television Workshop (CTW), creators of Sesame Street, and funded by FEMA. As you are aware, hurricane and earthquake kits have been developed in recent years.

Each flood kit contains a booklet for parents and teachers with suggestions for a family safety plan and safety kit, a card game for 8- to 12-year-old children, and a cassette with a skit and song that reinforce the messages of understanding what floods and flash floods are and how to prepare for them.

Copies will be sent to each region for further distribution to their field offices. We urge the field offices to promote the use of the kits as flood awareness information for school children, specifically third graders. We would like to maximize the educational value of the kit materials by getting them to children who will bring the flood preparedness message to their parents and siblings.

There are a limited number of kits available and the funding for the printing of future kits has not been determined at this time. While we want your assistance in getting the kits to children, we ask that you limit future requests for kits to those situations where the intended audience will best be served.

FEMA is investigating the transfer of distribution responsibility for all three of the kits to CTW. CTW would require payment for the kits which would ensure the availability of all the natural hazards kits in the future. There would be different fee schedules for public and private organizations as well as different rates for different sized orders.



CTW has also produced a videotape that discusses the production of the kits and their uses. The tape is approximately 10 minutes long and is available for a fee from CTW. Contact Adrienne Lesser at CTW (212-595-3456) for additional information on the kits and the videotape.

### Tsunami Video - *Kremkau*

A videotape entitled "1983 Sea of Japan Tsunami" has been distributed to all Western Region offices with coastal responsibility. Two copies of the video are also available from the Western Region library. This 28-minute video translated into English is from a Japanese Television (NHK-TV) documentary that contains footage of tsunami effects on bays and harbors never before recorded.

Soon WSH will be reproducing additional copies in order to loan out to NWS staff for hazard awareness activities. Please contact Dennis Segrist (W/OM12) at (301) 427-7278 for further information or copies. This videotape is copyrighted and should be shown in its entirety. No portions are to be used by the private sector looking for actual footage of tsunamis.

### Changes at the National Logistics Supply Center (NLSC) - *Kremkau*

After receiving calls from concerned WPMs about being charged for brochures ordered from NLSC in Kansas City, Missouri, I thought it was time to check it out.

Evidently, last August, the Consolidated Logistics System (CLS) became operational at NLSC. This new system replaces the EDS Time Share System. The design of the CLS provides NWS field offices and Headquarters personnel with the capability to requisition and view the status of stock items electronically. This improvement increases the efficiency with which the requisitions are processed by eliminating the need for requisitions to be reentered into the computer at NLSC. This capability also reduces the errors in requisitions by removing the reentry step and allowing the user to enter requisitions directly.

Because of this new system, the WSH performed an extensive review of NWS forms and publications which are stored and issued from the NLSC. The inventory management and replenishment of both the NWS forms and publications has been transferred to the Logistics Management Section (OSO322), WSH. Their staff has identified 255 forms to be transitioned and 953 publications. Of the 953 publications, the Warning and Forecast Branch has responsibility for the reprinting and stocking of about 25 brochures.

The problem associated with the so called "billing" is that with this new system an estimated dollar amount had to be applied to each brochure. That amount appears on the receipt when the orders arrive from NLSC. But, apparently, this is just a formality with the new system. **This is not a bill so please ignore this dollar amount.** You will not be billed for the number of brochures you request. But please remember, when you order brochures, the maximum number of copies you may order remains at 300. If you request a higher amount, NLSC will only send you the 300. There may be times when



a larger number of brochures is needed--only with authorization from WSH, Warning and Forecast Branch, will NLSC accept orders for more than 300 copies.

**NWS Warning and Preparedness Materials** - *Kremkau/Rivera/Sokich*

- Two NWS brochures, "Watch Out, Storms Ahead" (NOAA PA 82004) and "Thunderstorms and Lightning" (NOAA PA 83001) which were printed last fall were lost while in transit to the Kansas City Warehouse. They have since been located and back orders will be filled automatically.
- The Spanish translation of the Natural Hazard Watch/Warning Poster (NOAA PA 86001) is progressing. The Public Affairs Office is in the process of preparing the artwork and layout for the poster and should have it to us for review within a few weeks. Hopefully, it should be printed by Spring 1991.
- One of the first brochures to undergo revamping is the "Winter Storms" brochure (NOAA/PA 79018) which was last updated in August 1983. We know that some of the watch/warning criteria have changed so those sections will be corrected. We plan to redesign the brochure and are soliciting regional and field input. Our current plan is to streamline the narrative section and focus on bullet type information. This would enable the user with a specific question to locate a particular section very quickly which would make the pamphlet more useful.

Unfortunately, restricted funding for preparedness materials limits the number of brochures that can be printed. We are looking into alternative funding sources to obtain a more extensive printing and distribution of the brochure. We plan to leave the back page blank so the WPMs can include preparedness information pertinent to the local area. In addition, the WPM could solicit corporate sponsorship to print the localized brochure. The corporation would receive attribution on the last page with its logo along side that of NOAA's.

The narrative section of the pamphlet needs to be rewritten, and we would like to include any recent extreme winter conditions which have occurred in your area during the 80s (i.e., record cold, record heavy snow and ice, etc.). A prompt response is necessary in order to have the new revised "Winter Storms" brochure printed in time for the '91-92 winter season. Please send your information to John Sokich at WSH by March 15, 1991.

**AWARE Report Roster** - *Kremkau*

Attachment C is the Aware Report Roster. Please notify Linda Kremkau, Warning and Forecast Branch, at FTS 427-8090 for any changes to the telephone numbers or for new WPMs or focal points. Also, if you know of someone who would like to be on the AWARE Report distribution list, please have him or her contact the Warning and Forecast Branch.



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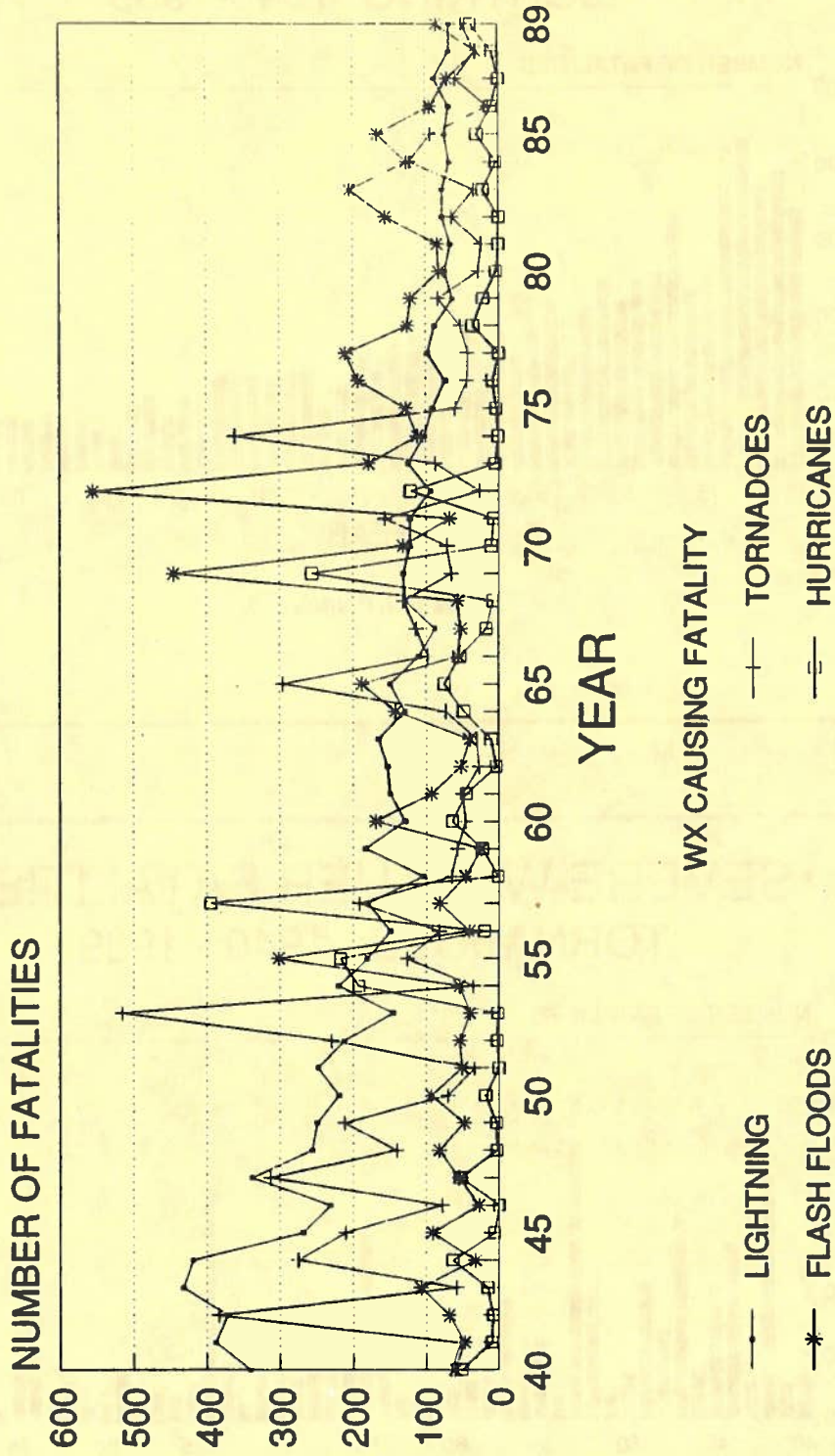
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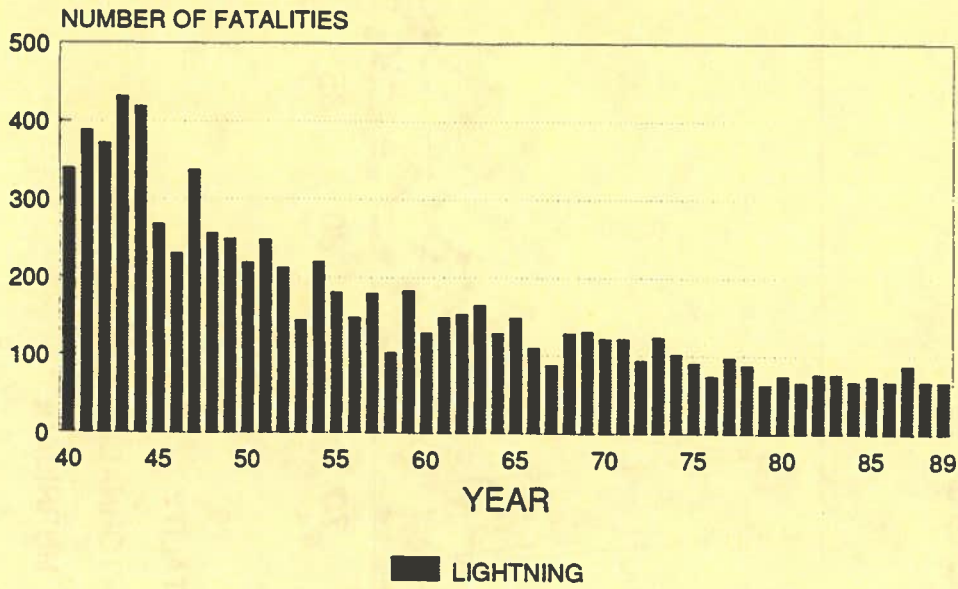
# SEVERE WEATHER FATALITIES

1940 - 1989

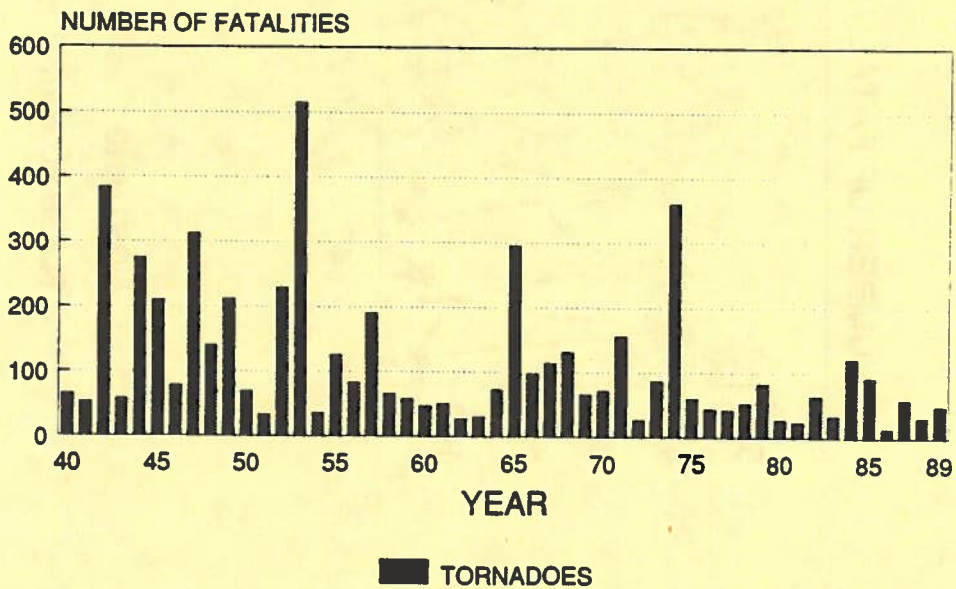




## SEVERE WEATHER FATALITIES LIGHTNING: 1940-1989

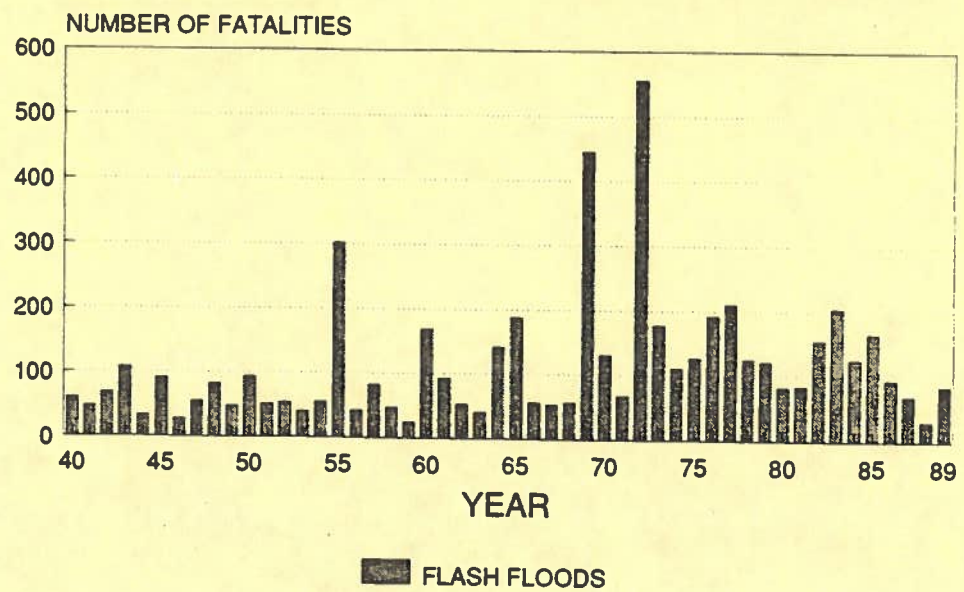


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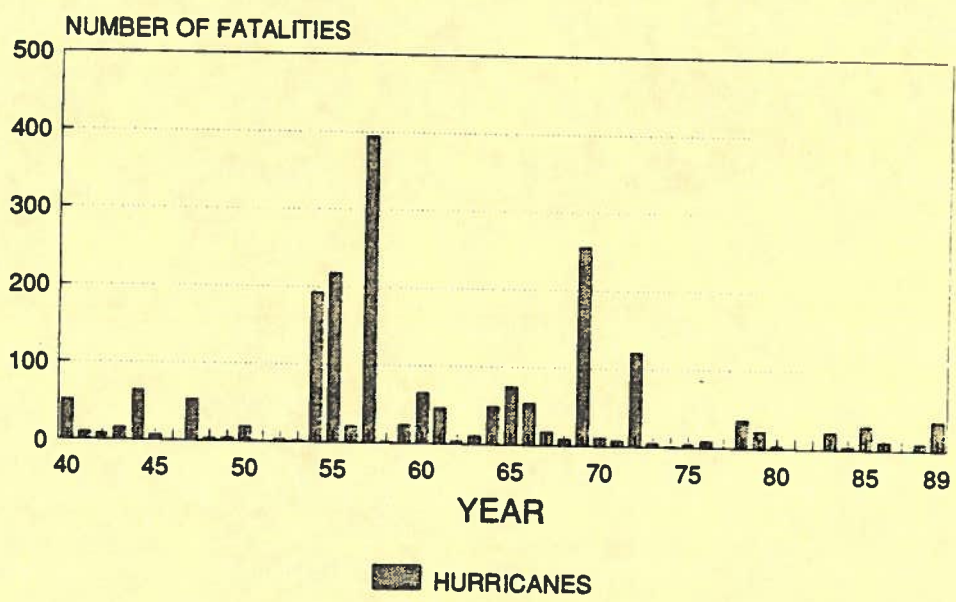




# SEVERE WEATHER FATALITIES FLASH FLOODS: 1940 - 1989

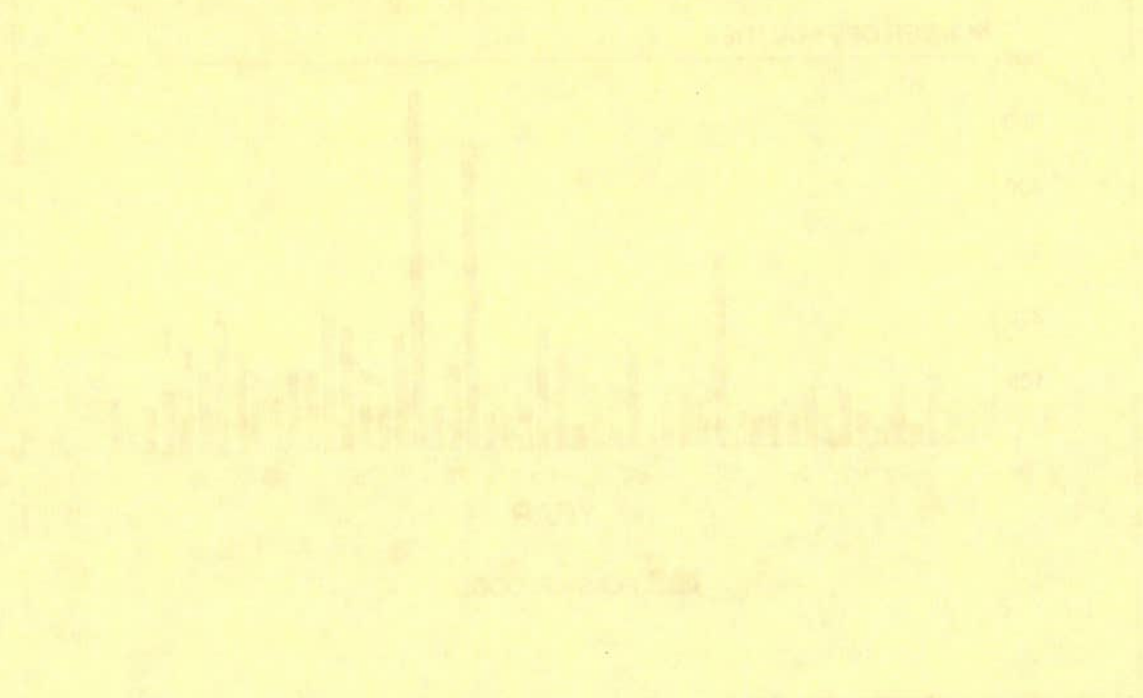


# SEVERE WEATHER FATALITIES HURRICANES: 1940 - 1989

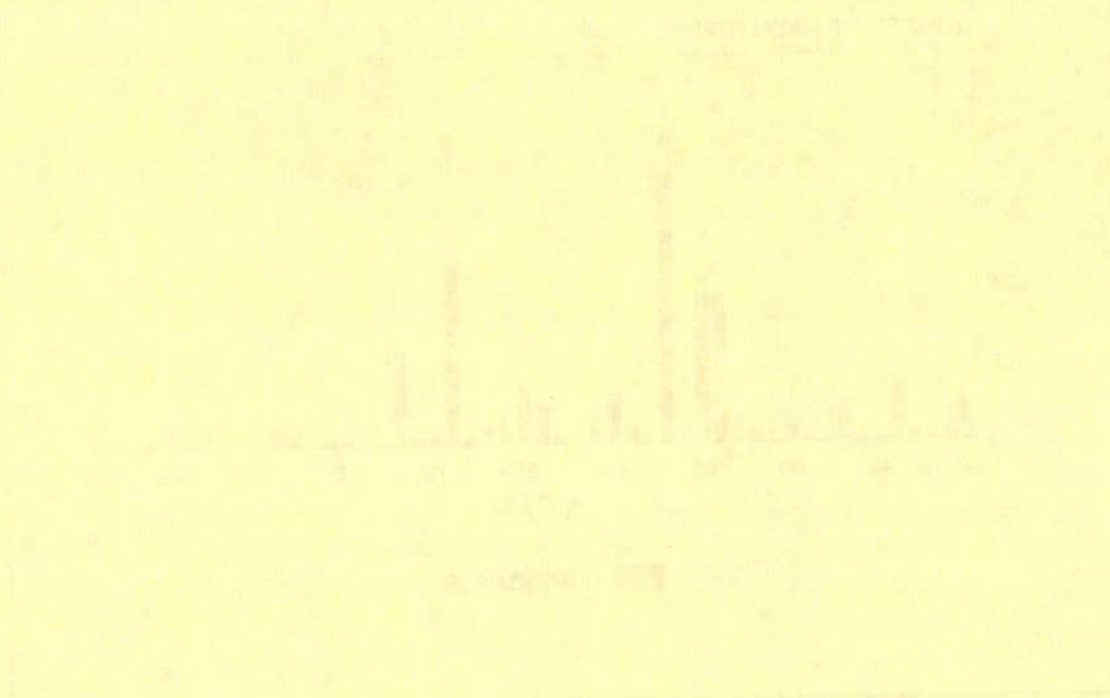




BEVERLY WEATHER FATALITIES  
FLASH FLOODS 1910-1982



BEVERLY WEATHER FATALITIES  
FLIC 1910-1982







# Are You Ready for a Hurricane?

Here's what you can do to prepare for such an emergency

## Prepare a Home Evacuation Plan

- ✓ Identify ahead of time where you could go if you are told to evacuate. Choose several places . . . a friend's home in another town, a motel, a shelter.
- ✓ Keep handy the telephone numbers of these places as well as a road map. You may need to take alternate or unfamiliar routes if major roads are closed or clogged.
- ✓ Listen to local radio or TV stations for evacuation instructions. Act quickly!

## Prepare for a hurricane

- ✓ Assemble a Hurricane Safety Kit containing—
  - First aid kit and essential medications
  - Fire extinguisher
  - Canned food and can opener
  - Bottled water

- Protective clothing, rainwear, and blankets
- Battery-powered radio, flashlight, and extra batteries.

- ✓ Also include in the kit written instructions for how to turn off your home's utilities.
- ✓ Have on hand plywood, nails, and other materials needed to board up windows and protect your home.

## What you need to know about hurricanes

- ✓ A hurricane WATCH means a hurricane may hit your area.
- ✓ A hurricane WARNING means a hurricane is headed for your area. You may be told to go to a shelter or evacuate the area; do so immediately.
- ✓ The eye of a hurricane is the calm center of the storm. The worst parts of a hurricane come just before and after the eye has passed over your area.

## When a hurricane is approaching . . .

- ✓ Listen to your local radio and TV stations for updated storm information.
- ✓ Bring in garbage cans, lawn furniture, bicycles . . . anything that could fly around and cause damage or blow away.
- ✓ Fill your car's gas tank and prepare to evacuate if told to do so.
- ✓ If you are told, evacuate as soon as possible.
- ✓ If you are not advised to evacuate, prepare to stay inside, away from windows.

## After the hurricane is over . . .

- ✓ Listen to the radio for instructions.
- ✓ Stay away from downed power lines.
- ✓ Inspect your home for damage.



Of course hurricanes are most threatening to residents along our nation's coastlines. But such fierce storms also have been known to build up enough momentum to carry their destructive winds inland for hundreds of miles. Heavy rains, flooding, and tornadoes add to the damage hurricanes can inflict upon your home and community.

Prepare for a hurricane by completing each item on the checklist below. Then meet to discuss and finalize your personalized Hurricane Plan.

**\_\_\_\_\_ Put together a Hurricane Safety Kit.**

Location of Hurricane Safety Kit: \_\_\_\_\_

**\_\_\_\_\_ Call your local Red Cross chapter or the National Weather Service to find out if you live in an area that could flood during a hurricane or heavy rains.**

Flood area:  yes  no

**\_\_\_\_\_ Prepare a Home Evacuation Plan in case you must evacuate. Clear your plan with the relatives or friends you plan to stay with—or plan to go to a Red Cross shelter. Add to your Hurricane Safety Kit a map marked with two alternate routes to your destination.**

Evacuation plan completed: \_\_\_\_\_  
(date)

**\_\_\_\_\_ Write instructions on how to turn off all utilities . . . electricity, gas, and water.**

Instructions written: \_\_\_\_\_  
(date)

**\_\_\_\_\_ Make a list of items to bring inside in the event of a storm. Keep this list in your Hurricane Safety Kit.**

List completed: \_\_\_\_\_  
(date)

**\_\_\_\_\_ Buy any other items needed to board up windows and protect your home. Precut plywood to fit windows so that you can quickly cover windows when a Hurricane WATCH is issued.**

Items purchased to protect home: \_\_\_\_\_  
(date)

And remember . . . when an earthquake, flood, fire, hurricane, or other emergency happens in your community, you can count on your local American Red Cross chapter to be there to help you and your family. That's been our role for more than 100 years.



**Attachment C**  
**AWARE Report Roster**

**WINTER 1990/91**

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**FTS 427-8090**

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Memphis (WPM) 222-6441  
Norman (WCM) 736-6583  
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Carven Scott

**Pacific Region**

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Vince Miller

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Regional Hydrologist 867-3220  
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Indianapolis (Focal) 331-4035  
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Omaha (Focal) 864-4207

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Regional Hydrologist 588-5137  
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Phoenix (Focal) 261-6444  
Portland (Focal) 423-2340  
Reno (Focal) 470-5794  
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Seattle (Focal) 392-6087  
Great Falls (Focal) COMM 406-453-9957

Regional (WPM) 8-868-5130

Regional (WPM) 8-551-1671  
Honolulu (Focal) 8-551-1698

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