Aware

Winter 1994/95

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

Our Name Says It All!

Service is our reason for being! Everything we do translates into a direct benefit to the public. Service, the theme of this *Aware Report*, comes from a presentation Marilu Trainor made at the Western Region Warning Coordination Meteorologist (WCM) Conference held last November in Salt Lake City, Utah. Ms. Trainor, Public Affairs Specialist for Western Region, challenged all of the WCMs with her novel remark—"The National Weather Service, Our Name Says it All!"

And no one says it better than our field WCMs. They are the service representatives of the Agency. They are the ones that must reach out to our users, learn their requirements, and work with our field staffs to find innovative ways to meet and exceed user expectations.

The National Weather Service (NWS) is working hard to ensure that our WCMs have the tools and training necessary to keep the focus on service. The 2-week WCM course at the NWS Training Center (NWSTC) is going well. In fact, the present course was developed by WCM Bill Bunting (Weather Service Office [WSO] Pleasant Hill) and Central Region WCM David Runyan, following on the initial work of Bill Alexander, Warning and Forecast Branch, when he was in Southern Region. Similarly, a WCM Job Aid, which was developed by a group of both new and experienced field WCMs and written by WCM Jim Purpura (Weather Service Forecast Office [WSFO] Norman) and Southern Region WCM Gary Woodall, is being finalized.

In the same vein, we must all position ourselves to ensure that we put our users first. The Office of Meteorology (OM) is presently working on a reorganization whose main purpose is to lead the effort in translating science into service. We kicked off our reorganization activities with a 1-day retreat so that the OM staff could explore and advise the reorganization team on what we needed to become more efficient and user focused. The major themes from that retreat were that OM and the entire NWS must get closer to its users and increase both internal and external communication. Present thinking suggests a structure that has less administrative layering, more responsibility for program leaders, and heavy reliance upon team-based problem solving that includes the Regions, field forecasters, and our users.

We in the NWS should be proud of our long dedication to service needs and user outreach. We are one of the few government organizations that is literally resident in local communities and dedicated to service. The Modernization and Associated Restructuring (MAR) of the NWS, inclusion of WCMs at each future Weather Forecast Office (WFO), and management streamlining are all designed to enhance the role of the field in designing and providing the best service to our users.

Donald R. Wernly

Donald R. Wernly
Chief, Warning and Forecast Branch

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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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Warning and Forecast Branch
National Weather Service, NOAA
1325 East-West Highway, Rm. 14360
Silver Spring, MD 20910
Tel: (301) 713-0090
cc:Mail: Linda Kremkau at W-OM14
Internet: LKremkau@smtpgate.ssmc.noaa.gov

Donald Wernly . . . . . Chief
Linda Kremkau . . . . . Editor
Bill Alexander . . . . . Mesoscale Meteorologist
Rainer Dombrowsky . . . . . Warning Coordination and Tropical Meteorologist
Rod Becker . . . . . Public Weather Program Meteorologist
Ron Berger . . . . . Synoptic and Dissemination Meteorologist
Chris Adams . . . . . Senior Social Scientist
Estella Speaks . . . . . Secretary
LaShone Darden . . . . . Office Automation Clerk
Kina Wallace . . . . . Student Aide

Please share this copy of the *Aware Report* with others in your office.

NWS WCM Program

WCM Training

Since the last *Aware Report*, greater emphasis has been placed on WCM training. This renewed emphasis on the WCM program has produced significant changes to the WCM training format, including enhancing the WCM course at NWSTC, developing a WCM Job Aid, establishing a mentor program for new WCMs, conducting regional and sub-regional WCM conferences, and opening channels for greater networking between WCMs, both regionally and nationally.

Following a review of student and instructor evaluations, OM decided that a meeting of OM and NWSTC staff was needed to assess how course materials could more effectively be presented. The review group determined that a sound methodology was required. The course review established that additional time be spent on modernization, leadership and supervision, and outreach issues, and that elements of the course be more interactive.

The review group also determined that the course should be lengthened from 8 days to 9.5 days and class size increased from 16 to 24 students. This increase would assist in reducing the waiting period most WCMs were experiencing in securing a class start date. The group also determined that an additional training session during FY 95 would bring the WCM training program back on schedule.

As part of the training review process, OM staff invited training development staff from the Federal Emergency Management Agency (FEMA) National Emergency Training Center. Their insights helped point the way for enhanced WCM training.

The group determined that it would be beneficial if OM would develop a guide that WCMs could refer as they developed their local WCM program. This decision gave birth to the concept of a WCM Job Aid. The WCM Job Aid's objective would be to provide WCMs with a basic understanding of the fundamental aspects of the WCM program and to acclimate the WCM to their new office. Once completed, it is expected that the WCM should have his/her program functioning at a baseline level of efficiency. The Job Aid would also be designed to act as a companion to the WCM Resource Guide, a two-volume set with extensive instructions concerning the WCM program.

The review group also investigated other options that might assist newly assigned or inexperienced WCMs. It was decided that the group examine the possibility of developing a mentor program. Such a program would pair an experienced WCM with a newly assigned WCM or an inexperienced WCM. These assignments would be detailed by the regional WCM or regional WCM focal point.

This group realized that WCMs are expected to be knowledgeable on all NWS programs, products, and services in their office's area of responsibility. OM and NWSTC would need to ensure that every effort be made to provide WCMs with an effective and systematic approach to learning their jobs.

—Rainer Dombrowsky, Warning and Forecast Branch

Update on the NWS/FEMA Joint Training Project

Work is progressing on the emergency management training courses to be available for WCM's use. These courses will be jointly taught by the WCMs, other office personnel, and state emergency management agencies. The goals are to provide training tools and state support for WCMs to help in their training efforts and to help coordinate with the rest of the emergency management community. Please contact your state emergency management agency's training officer to discuss how you jointly want to offer these courses.

Workshop in Emergency Management: Spotter Groups

This course has undergone its final pilot testing in Minnesota. Todd Krause put the course through its final test. We have turned over the recommended final revisions to the contractor. The course is scheduled to go to the printers by the end of January. We are hoping to ship the materials to all WCM's in early March.

Hurricane Planning Course

This is a shortened version of the Hurricane Course taught at the National Hurricane Center. It is designed for inland and coastal counties and parishes to teach the basics on hurricanes and local community preparedness. The final draft materials have just been sent out for review by NWS and emergency management officials. FEMA is targeting to have this course available in early spring. Coastal states will be requesting help in teaching this courses before the next hurricane season.

Hazardous Weather And Floods

In August 1994, we held the course development meeting at FEMA National Emergency Training Center in Emmitsburg, Maryland. We had equal participation from emergency managers and NWS subject matter experts. Beverly Poole, Meteorologist in Charge (MIC) Paducah; Jim Henderson from the National Severe Storms Forecast Center (NSSFC); Ira Bartfeld from California, Nevada River Forecast Center; and Rich Douglas, Western Region Meteorological Services Division (MSD), represented the NWS. The course developer has provided their plan of instruction for the course. We are awaiting their proposed schedule for delivering the course. Our target is to pilot test this course this spring.

Warning Coordination and Communication

The last course planned is on building and enhancing warning coordination and communication for hazards. We will focus on weather and flood hazards, but the lessons will be applicable to all hazards. The course development meeting is being planned for this spring.

—Chris Adams, Warning and Forecast Branch

WCM Job Aid

Since the last WCM training session was conducted, OM has worked with NWSTC in the course evaluation, modification, and creation of a WCM Job Aid to complement the course resource guide.

Through these many evaluations, OM came to the conclusion that the WCMs needed a tool that would assist them in learning their job and establishing a baseline from which to operate. OM asked regional WCMs to identify field WCMs that might be used as a resource in the creation of such a tool. OM brought nine WCMs to Weather Service Headquarters (WSH). They were: Barbara McNaught Watson, WSFO Sterling, Virginia; Herb White, NEXRAD WSO (NWSO) Binghamton, New York; Gary Woodall, Southern Regional Headquarters (SRH); Bobby McDaniel, NWSO Lake Charles, Louisiana; Jim Purpura, NEXRAD WSFO (NWSFO) Norman, Oklahoma; David Runyan, Central Region Headquarters (CRH); Bill Bunting, WSO Kansas City, Missouri; Carl Weinbrecht, NWSFO Boise, Idaho; and Ted Buehner, NWSFO Seattle, Washington. These WCMs met with OM staff for two full days, October 5-6, 1994. The interaction at these meetings provided the basis for the development of the WCM Job Aid. Jim Purpura and Gary Woodall made a return trip to Washington and used the information developed by the other WCMs to create a unified document. OM has targeted early 1995 for finalizing and distributing the WCM Job Aid.

—Rainer Dombrowsky, Warning and Forecast Branch

NWS Emergency Management Forum "Building Better Warning Partnerships"

The National Oceanic and Atmospheric Administration (NOAA)/NWS is hosting a national users workshop on March 1-3, 1995, in Crystal City, Virginia, designed for Federal, state, and local officials to identify key issues and information requirements to enhance coordination and communication of weather, flood, and ocean warnings. It is being held immediately following and in conjunction with the National Emergency Management Association's mid-year conference at the Stouffer's Concourse Hotel in Crystal City, Virginia. This meeting provides an opportunity for emergency management, law enforcement, fire service, public works, emergency communications, flood plain management, public safety, and other officials to discuss key warning information, coordination, and communication issues and requirements. The **goal** of this workshop is to formulate an agenda for the Nation for improving weather, flood, and ocean warning services.

—Chris Adams, Warning and Forecast Branch

WCM Conferences

In FY 94, three regional WCM conferences and two subregional conferences were held. OM continues to promote such conferences as a mechanism for the exchange of ideas and/or solutions to regional problems. It is highly recommended that regional and subregional conferences are conducted on a biannual basis and that the regional conferences complement the National WCM Conference that is held every other year.

Regional WCM Conferences

■ *Central Region WCM Meeting*

Central Region held its first regional WCM meeting, July 6-8, 1994, in Kansas City, Missouri. The meeting's agenda included exciting presentations that explored the broad horizon of all NWS programs and products: being a program manager in a rapidly changing NWS culture; developing effective team structures; discovering personal management assets, communication technologies, and quality assurance—a proactive concept to give confidence to the operational staff resulting in improved quality of products and services. Chris Adams from OM discussed the role of the WCM in office closure areas.

A round table discussion format was provided that allowed each WCM to present program challenges and successes. The 17 WCMs, CRH staff, and WSH representatives declared the meeting a success albeit too short in time. Thus, our next meeting will be lengthened to allow more WCM interaction.

—David Runyan, MSD, Central Region Headquarters

■ *Eastern Region Local WCM Meeting*

A meeting of local WCMs was held at the Sterling WSFO on September 19-21. In attendance were Joe Miketta, Mount Holly, New Jersey; Bill Sammler from Wakefield, Virginia; Rich Kane, Blacksburg, Virginia; Barbara McNaught Watson, Sterling, Virginia; and Rick Watling from MSD Eastern Region. One of the items accomplished was the development of a FEMA 1995 multistate hurricane exercise. FEMA provided the necessary materials to start this exercise, and the attendees discussed what type of hurricane track would meet FEMA and the states' needs for this exercise. A track was used from the 1994 Maryland/Delaware Hurricane Omar Exercise material but with modifications to this storm. A package of products for the 1995 exercise (Hurricane Nanna) was delivered to FEMA by November 30.

Other items examined at this meeting were county warning area (CWA) transfer issues, SKYWARN training and setting up SKYWARN networks, and Doppler radar interpretation of low-top tornadic thunderstorms.

—Barbara McNaught Watson, WCM, WSFO Sterling, Virginia

(As a side note, Eastern Region Headquarters recently announced that they will hold their WCM Conference on April 3-6, 1995, in Bohemia, New York.)

■ *Southern Region WCM Conference*

The Southern Region WCM Conference was held at Southern Region Headquarters (SRH) in Fort Worth, Texas, on October 18-20. The Conference was attended by 23 WCMs from the Southern Region field offices, in addition to SRH, staff from NSSFC, and Rainer Dombrowsky and Chris Adams from OM.

The primary objective of the Conference was to provide fundamental information regarding the WCM program to the field staff. This ranged from the conceptual vision of the WCM program to diversity issues inside and outside of the workplace to the details of conducting the day-to-day WCM operations at a field office. Secondary objectives were to discuss concerns with areas of WCM

program administration, to provide field-level expertise regarding aspects of the WCM program, and to improve the "networking" between field WCMs, SRH, and WSH.

Overall, the Conference was a rousing success. All of the Conference's objectives were met, and feedback from the attendees was positive. Listed below are a few of the concerns and action items that surfaced at the Conference.

- ✔ ***Increased Time Management Training.*** One of our sessions centered on time and workload management techniques. Each field WCM was provided a daily planner system and a book describing time management techniques. Other staff members at the field offices have expressed an interest in this training; perhaps NWSTC could incorporate such training in their management classes.

- ✔ ***CC:Mail Forum.*** CC:Mail is a valuable asset not only for communicating with SRH and WSH staff but for "networking" between the field sites and sharing requests and success stories. To keep the system from becoming clogged though, we will need to develop some rudimentary ground rules regarding the length and impact of messages transmitted on the system.

- ✔ ***WCM Mentor Program.*** SRH has implemented a "mentor" program, in which veteran WCMs are paired with new WCMs. The veterans will serve as an on-line reference for the new WCMs and will assist the Regional WCM in the professional development program for the new WCMs.

—Gary Woodall, MSD, Southern Region Headquarters

■ *Western Region WCM Conference*

The Western Region conducted its first WCM Conference on November 1-3 in Salt Lake City, Utah. Twenty Western Region WCMs were in attendance. The purpose of the Conference was to allow WCMs to become acquainted and receive an introduction into the program. In addition to "brainstorming," the Conference included speakers from the EPA to discuss HAZMET, and the state of Utah Training Officer to provide an overview of joint training opportunities. WCM Bill Bunting from NWSO Kansas City shared information on conducting windstorm surveys. Western Region Public Affairs Officer Marilu Trainor discussed techniques for effective public outreach. WSH staff included Dr. Chris Adams and Rainer Dombrowsky. In addition, David Runyan from CRH shared his thoughts on future training, and Gary Grice presented an overview of the Storm Prediction Center.

The number one challenge discussed at the Conference was a timely means to disseminate NWS products in both text and graphic form. Unfortunately, use of the NOAA Weather Wire Service (NWWS) remains limited. Mike Campbell, MIC of WSO Flagstaff and former Western Region Headquarters (WRH) MSD Dissemination Program Manager, provided an overview of WXCOPY that makes use of NOAA Weather Radio (NWR) to broadcast digital data to the hearing impaired via low cost receivers. The system has been tested at the NWSFO Salt Lake City and is currently being evaluated at the NWSFO in Sterling, Virginia. WXCOPY can provide critical weather information to emergency managers and is being used to disseminate warnings impacting the Chemical Stockpile Emergency Preparedness Plan project in Tooele, Utah.

The Conference proved to be an invaluable method for WCMs to compare common operational issues and share resolutions to problems. The group unanimously agreed that alternating regional conferences with national conferences is a very effective way of staying informed on the issues affecting all WCMs.

—Tom Ainsworth, Aviation and Marine Services Meteorologist, Western Region Headquarters

■ *Alaska Region WCM Workshop*

The Alaska Region held its first WCM Workshop November 16-17 in Anchorage. It centered on three primary topics: (1) Warning Preparedness and User Education Program, (2) Customer Service and Quality Assurance, and (3) Modernized Services and Operations in Alaska. Focus within these topics included a WFO warning program, warning preparedness education, resources, coordination and teamwork, customer service, quality assurance, and dissemination systems.

The Workshop goal was to develop a WCM plan of operations that will involve office staffs, each as a team in supporting local and regional customers. Closer ties will be established with customers on our product development, dissemination of our products, quality assurance, etc., as we continue to modernize our operations. WFO forecasters and WSO/Data Collection Office staff as customer service representatives under the direction of our WCMs will work more closely than ever before with those we serve from end to end. The long range goal is to evolve our services into a customer driven operation across the board.

—Greg Matzen, WPM, Alaska Region Headquarters

■ *National WCM Conference*

The National WCM Conference will be hosted by Western Region in Salt Lake City, Utah. The Conference is scheduled to be held June 5-9, 1995. WCMs should provide their respective region any concerns they might have about the WCM program, or if there is a specific topic they would like presented, please pass it on to the OM through your region.

—Rainer Dombrowsky, Warning and Forecast Branch

Modernization

Office Closure Task Team

The phasing out and eventual closing of NWS offices will be one of the most difficult tasks facing the agency in the future. Offices scheduled to close include 127 WSOs, 49 residual WSOs, 16 Weather Service Meteorological Observatories, and 20 Weather Service Contract Meteorological Observatories.

Currently, an enormous information void exists in communities where an office closure is planned. Emergency managers, elected officials, and concerned citizens are equating the shifting of county warning areas and NWR broadcast responsibilities with the closure of their local office. Some of these actions have already occurred, long before any office is slated to close. There are both real and perceived issues associated with the changes in the field office structure. We cannot afford to have misconceptions and misinformation cause added difficulties for the modernization. We must intensify efforts to inform users of the benefits of the modernization.

A proactive strategy with a consistent message must be delivered at the national, state, and local levels to soften the opposition. The strategy is to provide citizens, state and local elected officials, congressional offices, emergency managers, the media, airport managers, private sector meteorologists, and others with the benefits of the NWS modernization in those communities where an office closure is planned. An Office Closure Task Team has been created to implement the strategy. Team members include:

- Gene Auciello, Team Leader
- Wayne Palmer, Office Closure Coordinator
- Debbie Larson, Congressional Affairs Coordinator
- Alma Ripps, State/Local Affairs Coordinator
- Jon Parein, Outreach Materials Coordinator
- Ruth Barritt, Community Relations Specialist
- Chris Adams, Emergency Management Coordinator
- Rainer Dombrowsky, WCM Coordinator
- William Lerner, Confirmation of Services Manager
- John Milholland, General Counsel
- Randee Exler, NWS Public Affairs

The overall strategy includes several steps:

✔ Obtain a list of problem communities from each Regional Office. The Task Team will deal with all office closures, but focus on potential obstacles to the modernization.
Action: Completed

✔ Task NOAA Congressional Affairs to coordinate congressional briefings with members and/or staffers at the national and local levels.
Action: Scheduling in progress

✔ Coordinate briefings with Governors' staffs in Washington, DC, and with other legislators at the state level.
Action: Scheduling in progress

✔ Ensure Area Manager (AM), spin-up MIC, and WCM progress in modernization briefings, outreach, and technical coordination with the following community groups:
— Concerned citizens
— Special user groups (public, marine, agriculture)
— Airport managers
— Local elected officials
— Emergency managers
— Media
Action: Media and community relations training in progress for Area Managers, spin-up MICs, and WCMs; outreach and awareness tracking in progress

✔ Each Regional Public Affairs Specialist will work closely with the Task Team to coordinate positive press releases, interviews, and other events with all media outlets.
Action: As necessary

A proactive strategy will promote community awareness and community acceptance. If these steps are not taken now, the NWS will encounter organized opposition at many locations and continue to operate in a reactive, rather than proactive, mode.

—Gene Auciello, Modernization Communications Manager

Changes to Climate Outlook Program

An article appeared in the summer issue of the *Aware Report* on changes in Climate Outlook Program from the Climate Analysis Center (CAC). In summary, dramatic changes will be made to the Monthly (30-Day) and Seasonal (90-Day) Mean Temperature and Precipitation Outlook Program. One major change is issuance of the Outlook well ahead of the Outlook valid time, instead of just a few days ahead of time as was done previously. This lead time, the time between issuance of the Outlook and the first day of its valid period, will be about 2 weeks for Monthly Outlooks and vary from 2 weeks to 12.5 months for several simultaneously issued Seasonal Outlooks. The other major change was the increased number of Seasonal Outlooks (to thirteen) issued simultaneously EACH month.

The Monthly Outlook (for all 50 states) will be issued just once per month (around mid month) with a lead time of about 2 weeks. Issue time will be around 3 p.m. eastern time. Thus, the new longer-lead Monthly Outlook began with the issuance of the January 1995 Outlook on Thursday, December 15, around 3 p.m. eastern time.

The new longer-lead Seasonal Outlook (for all 50 states) began on a limited basis with issuance on Thursday, December 15, 1994, (around 3 p.m. eastern time) of just the January through March 1995 Seasonal Outlook (2 weeks lead time).

Beginning Tuesday, January 17, 1995, 13 Seasonal Outlooks will be issued simultaneously EACH month for all 50 states at about mid month (at around 3 p.m. eastern time). The Outlooks will overlap in steps of 1 month with lead times varying from 2 weeks to 12.5 months. Thus, on January 17, Seasonal Outlooks will be made for

February through April, March through May, April through June, and so on through February 1996 through April 1996.

The Monthly and Seasonal Outlooks will be expressed by probabilities that the average temperature and total precipitation for the Outlook's valid period will be above, below, or near normal (median for precipitation). Climatologically, these three classes each occur one-third of the time over the long run of many months or seasons. Areas will be indicated where one of the three classes is more likely for the Outlook's valid period. Areas where a favored class cannot be determined will be indicated by a "CL." CL means equal chances for each of the three climatological classes for the Outlook's valid period, which would be the only logical Outlook.

The following are four Outlook examples with class probabilities for each case. The favored class (if any) is the one with the highest probability.

Example	Class			Outlook Favored
	Below	Near Normal or Median	Above	
Class probabilities (anomaly)	43.3% +10%	33.3% 0%	23.3% -10%	Below
Class probabilities (anomaly)	23.3% -10%	33.3% 0%	43.3% +10%	Above
Class probabilities (anomaly)	28.3% -5%	43.3% +10%	28.3% -5%	Near Normal Near Median
Class probabilities (anomaly)	33.3% 0%	33.3% 0%	33.3% 0%	None ("CL")

Outlook graphics for the conterminous United States and Alaska will depict anomaly contours describing areas having a favored outlook class. Alphanumeric Outlook tables will be used for Hawaii.

Since Monthly and Seasonal Outlooks pertain to the average temperature and total precipitation for the entire valid period and not to the variability within it, it will NOT help people planning events for specific dates. The Outlooks will be of most use for economic and business planning, particularly when used with climatic reference material to help meet a specific user's need. General climatic reference material will be provided by CAC. More detailed climate information (e.g., heating and cooling degree day information) is available through the Regional Climate Centers (RCC). The six RCCs have hosted workshops this autumn to provide information on how private industry can benefit by adding value to the Outlooks by referring to climate information.

In addition to the Outlooks, a Tropical Pacific Mean Sea Surface Temperature (SST) forecast out to a year will be issued. CAC's new forecast techniques rely mainly on the slowly varying global SST field and DO have useable accuracy at long lead. These forecasts make tangible the results of research activities by many scientists over several decades on the subjects of El Nino, ocean/atmosphere interaction, etc.

Improvements in our understanding of the global climate system and in delivery system technology have made improvements possible for our Outlook products. The scope and nature of the improvements are so large that CAC has CEASED publication of the Monthly and Seasonal Weather Outlook with the one issued November 29, 1994. Adjustments will be made on any unused portion of a subscriber's service by the Superintendent of Documents within the next few months.

All Outlooks and related information will be officially disseminated through the Family of Service's Automation of Field Operations and Services (AFOS) Graphics Service, the National Meteorological Center's Anonymous File Transfer Protocol, and Digital Facsimile (DIFAX) Service, including Alaska facsimile. The RCCs will distribute the Outlooks by hard copy request for a limited time. In addition, CAC will disseminate outlooks experimentally on their home page on Internet. The Internet address is http://nic.fb4.noaa.gov.

—Ron Berger, Warning and Forecast Branch, and Ed O'Lenic, Climate Analysis Center

Decentralizing the Severe Local Storms Watch Program

In a previous edition of the *Aware Report*, I gave you an overview of changes forthcoming in the convective watch program. Such plans continue on track, with the initial step to be taken in January of 1996. An earlier plan was to begin the decentralizing process in the summer of 1995, but there was concern about initiating such a major change in what remains a fairly active convective period.

Software development continues at the Storm Prediction Center (SPC) in Kansas City, Missouri, where programming is nearly complete to generate watch polygon graphics and the related narrative. The SPC V-DUC system is used to generate watch polygon graphics; then files are shipped over to a 486 PC system where additional software is used to create the Watch Guidance Message (WGM). A low-end 386 should be sufficient at forecast offices to ingest the WGM and create the external product SEL (the actual public watch product). I was in Charleston, West Virginia, December 8-9, to overview their PC-based ZIP software that may be used to create the SEL at forecast offices. I was very impressed, and OM will continue its efforts with ZIP as the working software.

A number of questions have arisen during the past several months (both from within the NWS and outside the NWS) as to why we are decentralizing the convective watch program. Remember, it always has been the policy of the NWS to have the **most qualified** entity create the products. For the past four decades, NSSFC has carried the convective watch program admirably. Improvements in science and in technologies have meant increased understanding, better data, and enhanced communications. Such improvements have yielded steady gains in overall watch quality. Now, with the NWS MAR, even further refinements are possible. New data streams, new science, and new technologies at WFOs will provide a strategic advantage for field office forecasters. WFOs will have data gathering and processing capabilities now only available at National Centers (such as the NSSFC). WFOs will be able to provide convective watch products with smaller areas than today and with shorter valid times.

More resolution, more specificity, and high quality will be the result.

Where does this leave the role of the new Storm Prediction Center? In the structure of the National Centers for Environmental Prediction (NCEP), the SPC provides **guidance** to WFOs. Such guidance (probabilistic, gridded, graphical, and alphanumeric information) will be used by WFO forecasters in consonance with locally generated information to arrive at the final watch product. The SPC supports the WFO, just as will the Hydrometeorological Prediction Center and each of the other National Centers.

—Bill Alexander, Warning and Forecast Branch

New Emergency Alert System (EAS)

The new EAS is official. It's the Nation's automated, digitized replacement for the Emergency Broadcast System (EBS). The successful launching began with the Federal Communications Commission's (FCC) Report and Order announcing the new technological requirements and system structure to the public on November 10, 1994. A month later, Chairman Reed Hundt presided over a joint press conference at FCC Headquarters on December 13 with key participation by Dr. Friday and Mr. Vernon Wingert of FEMA and many manufacturers of the new EAS equipment.

Chairman Hundt spoke movingly about his personal experiences with severe weather and the need for a sophisticated alerting system. He described how, in June of 1989, his wife, "sensing" abnormal danger from darkening skies, ushered her family to the safety of the basement just before a thunderstorm microburst leveled their home in northwest Washington. A picture of its remains made the front page of the *Washington Post* the next day. No radio or television was on (nor was there NWR) to alert them to the ongoing warnings. Notwithstanding the protection his wife's "sixth sense" provided, Chairman Hundt made the point that he would like to rely on modern technology for future alerts.

As part of the new EAS, manufacturers would be expected to incorporate EAS protocols into future home devices (radios, televisions, etc.) so that, at user option, the devices can automatically be turned on for receipt of emergency messages (similar to the NWR alarmable feature). EAS manufacturers have also entered into an aggressive campaign to provide alerting for the deaf and hearing-impaired communities through such methods as flashing lights and mechanisms that vibrate bed pillows.

Dr. Friday then expertly unified the themes of this country's natural hazards, the need for NWS modernization, Vice President Gore's initiative in expanding NWR to reach 95 percent of the population, and its complementary role with the EAS in directing NWS's more accurate warnings to the people most at risk. Mr. Wingert, Chief of FEMA's Technical Services Branch, speaking on behalf of Director James Lee Witt, described FEMA's expected role in the new EAS. A question and answer period with the media then ensued, with NBC and CNN prominent by their participation. The hour-long affair culminated with a demonstration of prototype EAS equipment, including NWS's specific area message encoder and alerting mechanisms for the deaf.

The EAS will not only accept NWS's specific area message encoded warnings but is itself based on NWS's digital protocols. Manufacturers of EAS equipment must include the EAS requirement but may add other features for various media markets. Prices may start at less than $600 for a basic unit. All radio and television stations must upgrade to the new EAS equipment by July 1, 1996, to be in full compliance with FCC's ruling; cable television, a first-time emergency alerting participant, must comply by July 1, 1997. In all, the EAS will include 24,000 radio, television, and cable facilities nationwide.

Unlike the current EBS, which uses a tree trunk/branch dissemination method, the EAS will use a point to multipoint "web" for simultaneous input and distribution through the system. If the trunk or any branch is broken, other EBS stations along that chain will not receive the emergency message. In the web structure, by contrast, a facility using EAS equipment can monitor several separate input sources for emergency messages, including NWS, Emergency Operation Centers, and other EAS stations—a much higher likelihood of message receipt and redistribution. EAS facilities can either automatically interrupt their programming and broadcast the emergency message immediately, tape it for slightly delayed broadcast, or ignore the message, particularly if it's deemed not to pose imminent danger or doesn't apply to their listener/viewer area.

NWS is presently investigating funding sources for installation of the specific area message encoder equipment in all of its NWR consoles nationwide. The goal is to be digitally ready by the completion of the EAS upgrade nationwide.

—Rod Becker, Warning and Forecast Branch

Short-Term Forecast Display on The Weather Channel (TWC)

Several years in the making, TWC recently announced their commitment to display NWS's short-term forecasts (NOW) as written beginning around March 1, 1995. TWC expects to display the product several times an hour in a fixed screen format, typically just before the 36-hour local forecast segment. They will key on the Universal Generic Code (UGC) to replace NOWs with new issuances, or insert other programming if necessary. In meeting their subscribers' needs for short-term information (see next article from TWC), TWC describes their accommodation of NWS's short-term forecast program as the biggest change they've made in years. They will therefore be marketing this new program on air during high visibility time blocks beginning around implementation.

The NWS and TWC have been working cooperatively to devise a suitable format for NOW display while ensuring the format continues to be appropriate for other users. Beginning February 22, 1995, NWS offices issuing NOWs must follow the new format (the regions and field offices have detailed instructions). Applications software for NOW preparation are in development with some versions probably available by start-up. Those offices not yet ready to enter the NOW program at the start-up date won't affect nationwide implementation because TWC can insert other programming into those "vacant" NOW slots. TWC's software will be configured so that as soon as a newly participating office begins issuing NOWs, the product will be accessed and displayed immediately.

Following are the key points of the new NOW program and format:

- At a minimum, participating offices should issue the NOW at least once every six (6) hours and more frequently as conditions dictate.
- The NOW for an office's county warning area may be segmented into two or more geographic areas using the appropriate UGC zone codes.
- UGCs (and any optional plain language zone identification) shall be found before the text of the NOW or any NOW segment.
- After the UGC and before the text, a new turn-on delimiter **.NOW...** will be inserted. TWC will then display up to eight (8) full lines of text until either a **double dollar** (**$$**) or **double ampersand** (**&&**) is found. If the text were to exceed 8 lines, the && would be used at the 8-line limit, with the $$ used at the end of the text.
- A headline may be used and is considered part of the text.

A key factor in the early stage of NWS MAR is the more accurate and timely provision of short-term hydrometeorological information. The short-term forecast program and now our ability to deliver these perishable products to a vast potential audience of millions via TWC is a giant step toward our goal.

—Rod Becker, Warning and Forecast Branch

Short-Term Forecasts On The Weather Channel

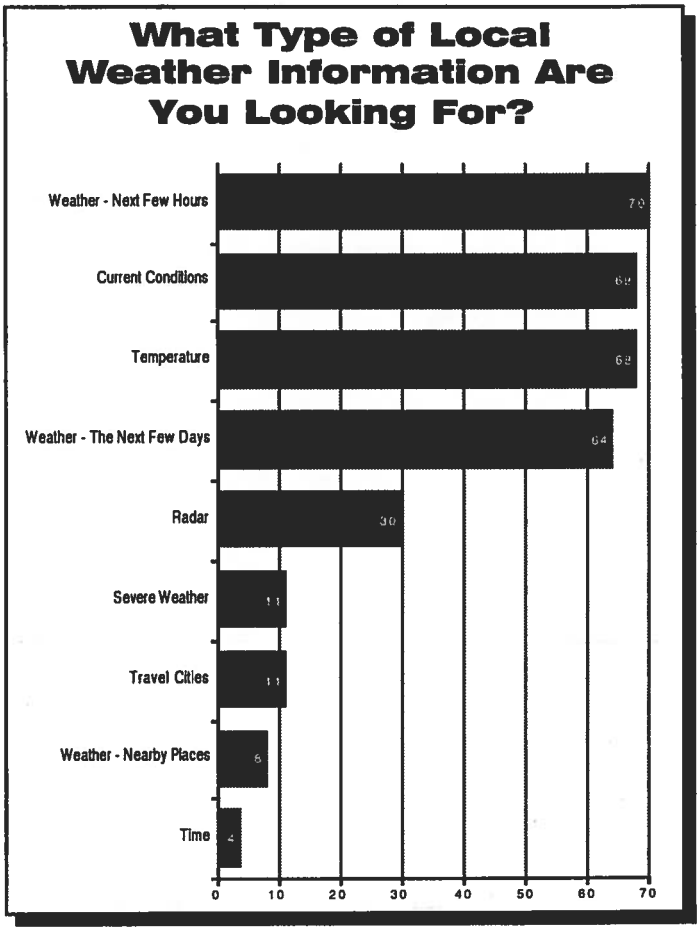
Since launching in 1982, The Weather Channel, Inc., has been almost constantly changing its programming to better serve its customers. A prerequisite to this process is knowing what types of information and presentation the customers perceive as being valuable. In order to obtain this customer feedback, TWC conducts several research projects annually. This research can be either quantitative (written or telephone surveys) or qualitative (focus groups) and is designed to provide objective information on perception of value.

Back in the spring of 1994, a telephone survey was conducted on the types of local weather information that TWC viewers are looking for most often. Customers were asked to rate among others, current weather and sky conditions, current temperatures, radar, weather for the next few days, and weather for the next few hours (see attached graph for all categories). What our viewers told us was that out of all the elements listed, the most sought after information is "***weather for the next few hours***." This information was considered more valuable than elements, such as "radar" and "weather for the next few days."

This is very exciting feedback in light of what the NWS is doing with regard to the "short-term forecast." Viewers are telling us that the forecast for the next few hours is very important, and the NWS is providing a product that responds to customer desires.

Currently, TWC is in the process of adapting its systems to process the short-term forecasts. Necessary changes should be completed in February 1995, and TWC will begin displaying the short-term forecast as part of its local weather segment in early March. We believe this will significantly enhance the value of this segment to our viewers. We thank NWS for moving forward with this exciting new product.

—Ray Ban, Vice President of Operations, The Weather Channel



Operations and Services

SRWarn and Other PC Applications

The latest version of the national standard PC applications program for preparing and disseminating short-fuse warnings, SRWarn, has been distributed. Version 6.5 of SRWarn alleviates many of the software inadequacies identified with Version 6.0, including problems in preparing warnings for the Great Lakes, for multiple counties in marine environments, limitations to the number of counties that can be included in products, and for situations that include multiple states under the same jurisdiction. In the meantime, SRWarn Version 7.0 is close to being completed and awaits full integration. Version 7.0 incorporates many text refinements, features a spell checker, and allows editing of previous product versions. Look for Version 7.0 after the 1995 convective severe weather season.

Other very good statement writing software has been developed in the field during the past couple of years, including WISE and PHXWarn. Such software was developed because older versions of SRWarn did not meet field needs, and updating software under the Change Management process is tedious. So long as non-SRWarn software is not used to issue warnings, it can be used by the field, i.e., for preparing and issuing statements. Meantime, the Office of Systems Operations and OM have made a joint request to Regions for their recommendations, regarding the use of field generated warning software. Later versions of WISE will have warnings issuance capability (as does the current version of PHXWarn). Should this software prove reliable and effective, NWS Headquarters will explore how best to implement the software nationally.

—Bill Alexander, Warning and Forecast Branch

Paradox for Storm Data

In mid-October, the operational version of Paradox for assembling Storm Data was suspended. The software was cumbersome, non-forgiving, and not an efficient use of the author's time. Paradox was shelved until it could be refined. I met with Lou Boezi (Deputy Assistant Administrator for Modernization) and received a commitment to fund a contract for a professional Paradox programmer. That person will rebuild Paradox Storm to optimize the software and to make it much more forgiving, utilitarian, and refined. A Statement of Work to define the tasks needed to bring Paradox Storm back into the operational setting has been submitted to a contractor. A refined Paradox should be ready by the end of FY 95. In the meantime, Storm Data authors will prepare their products using WordPerfect 5.1 or 6.0. Aside from using Paradox, they will continue to abide by the new Weather Service Operations Manual (WSOM) Chapter F-42 covering Storm Data and Related Reports.

I will keep you all posted on the progress with Paradox. It continues to have great potential in streamlining both our severe weather events compilation process and a national database.

—Bill Alexander, Warning and Forecast Branch

WSOM Chapter C-40

By the time you read this, WSOM C-40 (Severe Local Storm Watches, Warnings and Statements) will be undergoing Union review. Latest changes include the incorporation of short-term forecast formats and integration of the NCEP structure. We anticipate that the chapter will be distributed in February 1995. This means an effective date around March 1.

This is the first rewrite of C-40 since February 1986, and the changes are extensive. As much as possible, transitioning to the MAR structure (both science and technology) have been addressed in this rewrite. That means phraseology has been adjusted to accommodate operational distinctions between non-WSR-88D (Weather Surveillance Radar-88 Doppler) offices (generally not using the Short-Term Forecast) and those using 88D technology and/or using the Short-Term Forecast. Such distinctions have a profound effect on the format, purpose, content, and delivery scheme of such collateral products as warnings and statements. As planned changes approach (such as decentralizing the convective watch program), appropriate updates will be introduced either as Operations Manual Letters (OML) or chapter rewrites.

—Bill Alexander, Warning and Forecast Branch

Style and Punctuation

The NWS will be changing some of its style and punctuation rules for public products intended for the mass media, such as warnings, watches, forecasts, statements, summaries, discussions, etc. This is being done to conform to standards in the communications industry. Such changes are now possible and appropriate as communication technologies are upgraded at our offices.

These rule changes do not apply to essentially database products that contain coded information (e.g., coded city forecasts, model output statistics, etc.) and aviation products.

All the various details will be finalized by next spring. Some of these changes are being made to accommodate the Short-Term Forecast program. The most significant punctuation change will involve the use of the ellipses of three dots (...).

Commas shall replace the three dots (...) in the narrative text sections of products to represent pauses within sentences and phrases as appropriate. However, the three dots shall **continue** to be used to bracket headlines (e.g., ...WINTER STORM WATCH FOR SOUTHERN ILLINOIS TONIGHT...) and follow forecast period designator in period-by-period forecast products (e.g., .TONIGHT...[text]).

—Ron Berger, Warning and Forecast Branch

Frost/Freezes

Since frosts and freezes are mostly associated with the transition seasons of spring and fall, NWS products for frosts and freezes will be issued by most NWS offices using the product category for non-precipitation warnings and advisories events instead of winter weather events. This non-precipitation category is NPW for NWWS and WWUS45 for the Family of Services (FOS). Possible exceptions to this change in policy are noted in the next paragraph. All other policies and procedures regarding frosts and freezes remain unchanged.

For tropical or subtropical climatic areas where frosts and freezes are rare winter events, these products may still be issued under the NWWS category WSW for winter weather warnings and advisories (FOS category WWUS46). This would be appropriate for occurrences in the South, lower elevations of the southwest deserts, Puerto Rico, and lower elevations in Hawaii.

It is strongly advised that users should always receive **both** NPW (WWUS45) and WSW (WWUS46) from the desired NWS office.

—Ron Berger, Warning and Forecast Branch

Exercise Response 95

Plans for Exercise Response 95 continue to move forward. The hurricane basic storm scenario has been completed and all other supporting documentation is expected to be completed by early January.

The next major step in the exercise design process is the development of the Master Scenario Events List (MSEL). Response 95 MSEL Conference was held in Atlanta, Georgia, December 6-8, 1994. The purpose of the Conference was to ensure that each event was clearly depicted, properly sequenced within the MSEL, and capable of eliciting expected player response actions to achieve exercise objectives.

The MSEL Conference was a defining point in the development of any full-scale exercise. Recognizing that Exercise Response 95 will be the biggest peacetime, non-national, security-oriented exercise ever sponsored by FEMA, it is very important to ensure that all aspects of the exercise are properly addressed.

I have represented NOAA/NWS from the national level these past several months as the scenario has been developed. The support that I have received from Southern Region has been extremely helpful, especially during the early stages of exercise design. I wish to acknowledge Gary Woodall, SRH; Billy Crouch, MIC (recently retired), and Frank Rivette, WCM, WSFO Slidell, Louisiana; and Tice Wagner, MIC, and Jim Butch, WCM, WSFO Jackson, Mississippi, all have provided valuable expertise and assistance. I will be looking to these individuals and others as we move toward the exercise date. Exercise Response 95 will be conducted during the week of May 5, 1995.

—Rainer Dombrowsky, Warning and Forecast Branch

GOES-8

GOES-8 was successfully launched on April 13, 1994. Since the launch, the National Aeronautics and Space Administration (NASA) and NOAA engineers have been involved with checking out the health and condition of the spacecraft and its many instruments. Check-out during the summer months have gone extremely well. On November 7, 1994, a press conference was held by both NASA and NOAA to officially hand over the day to day spacecraft operations from NASA to NOAA engineers. Dr. Joe Friday participated in the press conference and provided both a vision and a challenge for both NASA and NOAA. During the summer, the spacecraft was commanded to take high resolution images over the Midwest—1-minute GOES-8 imagery captured severe thunderstorm development along the Kansas/Oklahoma border. The imagery revealed details and features, such as rapidly developing overshooting tops and radial waves, never before observed from weather satellites. Based on this imagery, Joe Friday would like to explore the feasibility of adding a third GOES satellite to join the two operational GOES satellites. This third satellite, STORM SAT, would focus on the mesoscale problem of the day over the United States, providing 1-minute imagery during the mesoscale event, two imagers on STORM SAT would allow coverage of two events daily.

Operational assessment of GOES-8 images and products will continue during December and January. Based on a successful assessment, the National Environmental Satellite, Data, and Information Service (NESDIS) will commission the satellite in late December or early January. After commissioning, NESDIS will start to move the GOES-8, GOES-7, METEOSAT-3 satellite in preparation for the launch of GOES-J/9 that is scheduled for May 23, 1995, from Cape Canaveral.

—Ron Gird, Marine and Applied Services

Important Update for Marine Weather Radiofax Users

The broadcasting of weather and oceanographic charts to ships via high frequency (HF) radiofax is an important component of marine weather dissemination for safety of life and property at sea. There are over 60 radio stations around the world making these broadcasts covering a large segment of the world's oceans.

In the United States and its territories, there are nine radiofax broadcast stations operated by the U.S. Coast Guard, the Navy and other Department of Defense (DOD) echelons, and several private marine communication companies. Six of these stations broadcast NWS and National Ocean Service (NOS) charts. They are located in Marshfield, Massachusetts (NMF); Mobile, Alabama (WLO); Pt. Reyes, California (NMC); Kodiak, Alaska (NOJ); Honolulu, Hawaii (KVM-70); and Rogers City, Michigan (WLC). The Navy broadcasts its own weather and oceanographic charts from three facilities: Cutler, Maine (NAM); Pearl Harbor, Hawaii (NPM); and Guam (NPN).

In September 1995, the Navy will discontinue their HF radiofax broadcasts as they convert to satellite communication of weather graphics that will be accessible only to military users. Although over the years, many civilian marine users have been able to tune in to the Navy's broadcasts, the mission of these broadcasts has been to support fleet operations and NATO units. Therefore, the NWS and

NOS had no involvement in the decision to discontinue the broadcasts. In particular, the Navy's broadcast from Norfolk, Virginia (NAM), was shifted to Cutler, Maine, in March 1994, and the frequencies were cut back to 3357 KHz and 10,865 KHz.

Fortunately, the NWS and the Coast Guard have substantially expanded the Coast Guard's radiofax broadcast from Marshfield, Massachusetts (NMF), and changed to new frequencies for more reliable reception. Details of the broadcast are listed below. For further information, contact the following office.

National Weather Service, NOAA
Marine and Applied Services Branch, W/OM12
1325 East-West Highway
Silver Spring, Maryland 20910
TEL: 301-713-1677, Ext. 126
FAX: 301-713-1598

—Paul Jacobs, Marine and Applied Services Branch

North Atlantic Marine Radiofax Broadcast

On January 31, 1994, the NWS, in cooperation with the U.S. Coast Guard, expanded the content and schedule of weather and oceanographic charts on the North Atlantic marine radiofax broadcast from station NMF, Marshfield, Massachusetts. All products are broadcast simultaneously on 6340.5 KHz and 12,750.0 KHz. These frequencies replaced 3242.5 KHz and 7530.0 KHz on May 2, 1994. The new schedule is shown below.

This new schedule is an increase from 8 to 27 charts. It was designed to provide more complete coverage and information on NWS warnings and forecasts and NOS ocean analyses for the North Atlantic to meet the needs of shipping, fishing, and other commercial, recreational, and scientific maritime activities.

If you have any comments or questions, please contact the office below.

National Weather Service, NOAA
National Meteorological Center
Marine Forecast Branch, W/NMC31
Washington, DC 20233
TEL: 301-763-8442
FAX: 301-899-8903

—Paul Jacobs, Marine and Applied Services Branch

TIME (UTC)	PRODUCT LIST
0300	FAX HEADER
0305	FAX SCHEDULE
0315	OOZ SATELLITE PIX ANNOTATED
0325	OOZ SURFACE ANALYSIS PART 1
0338	OOZ SURFACE ANALYSIS PART 2
0351	OOZ 500 MB ANALYSIS
0401	OOZ SURFACE ANALYSIS PART 1 (RETRANS)
0414	OOZ SURFACE ANALYSIS PART 2 (RETRANS)
0427	END OF TRANSMISSION
0800	FAX HEADER
0805	24 HR WIND/WAVE FCST VT OOZ (REGIONAL)
0815	24 HR WX DEPICT FCST VT OOZ (REGIONAL)
0825	48 HR SURFACE FORECAST
0835	48 HR 500 MB FORECAST
0845	48 HR SEA STATE FORECAST
0855	END OF TRANSMISSION
0905	FAX HEADER
0910	LEGEND
0920	REQUEST FOR COMMENTS
0930	06Z SURFACE ANALYSIS PART 1
0943	06Z SURFACE ANALYSIS PART 2
0956	06Z SATELLITE PIX ANNOTATED
1006	GULF STREAM ANALYSIS (AREA A)
1016	GULF STREAM ANALYSIS (AREA B)
1026	06Z SURFACE ANALYSIS PART 1 (RETRANS)
1039	06Z SURFACE ANALYSIS PART 2 (RETRANS)
1052	END OF TRANSMISSION
1730	FAX HEADER
1735	12Z SURFACE ANALYSIS PART 1
1748	12Z SURFACE ANALYSIS PART 2
1801	END OF TRANSMISSION
1835	FAX HEADER
1840	12Z SURFACE ANALYSIS PART 1 (RETRANS)
1853	12Z SURFACE ANALYSIS PART 2 (RETRANS)
1906	12Z 500 MB ANALYSIS
1916	12Z SEA STATE ANALYSIS
1926	96 HR 500 MB FORECAST
1936	96 HR SURFACE FORECAST
1946	GULF STREAM ANALYSIS
1956	END OF TRANSMISSION
2015	FAX HEADER
2020	24 HR WIND/WAVE FCST VT 12Z (REGIONAL)
2030	24 HR WX DEPICT FCST VT 12Z (REGIONAL)
2040	48 HR SURFACE FORECAST
2050	48 HR 500 MB FORECAST
2100	48 HR SEA STATE
2110	18Z SATELLITE PIX ANNOTATED
2120	18Z SURFACE ANALYSIS PART 1
2133	18Z SURFACE ANALYSIS PART 2
2146	18Z SURFACE ANALYSIS PART 1 (RETRANS)
2159	18Z SURFACE ANALYSIS PART 2 (RETRANS)
2212	END OF TRANSMISSION

Bronze Award for the National Preparedness Coalition

Congratulations to the following group of individuals who were selected to receive the Bronze Medal. The individuals listed below were part of the National Preparedness Coalition that produced the National Weather Service new publications on winter storms, flash floods/floods, tornadoes, thunderstorms and lightning, and hurricanes.

Donald Wernly
Linda Kremkau
John Sokich
Barbara McNaught Watson
Bill Bunting
Todd Heitkamp
Roger Stairs
Mary Jo Parker
Max Mayfield
Rainer Dombrowsky
Tim Wugofski
Sue Dietterle

The Awards Ceremony and Reception was held on November 17, 1994, at the Silver Spring Metro Center 4 Auditorium. In addition, a breakfast was held in Dr. Friday's Conference Room before the ceremony. One bronze medal and one certificate were awarded to this group. Unfortunately, Don Wernly (Chief, Warning and Forecast Branch) could only invite one guest to the ceremony. The seating was very limited and only those with invitations could attend. Barbara McNaught Watson from the Washington WSFO was selected to represent all of the WCMs/Warning Preparedness Meteorologists/Focal Points who assisted with the brochures. We would have liked to have all members of this group attend the NOAA ceremony, but unfortunately it was beyond our control. We also feel very badly we only received one medal and one certificate, but we are trying to work with NOAA to at least get more certificates—one for each individual involved with this project. We will let you know what we can do.

Again, congratulations to all!

—Linda Kremkau, Warning and Forecast Branch

(Editor's Note: For updates on the WSOM chapters, see attachment A.)

Dr. James D. Baker, Barbara McNaught Watson, and Dr. Elbert W. Friday, Jr.

NOAA Weather Radio Initiatives

Alabama NWR Expansion and Upgrade Project

During the severe weather episode of Palm Sunday 1994, the ability of the new weather radar system to accurately detect severe weather out-stripped the capability of the warning distribution system to get essential warning information to people. This was the case at the Goshen United Methodist Church near Piedmont, Alabama, where 20 people died in spite of the fact that warnings were out 12 minutes before the tornado reached the church. Vice President Albert Gore toured the areas of devastation in Alabama and initiated a project to expand and upgrade NWR system.

The Alabama NWR Expansion and Upgrade Project is intended to improve and enhance the overall coverage of weather broadcasts. To accomplish this, four new transmitters will be installed in the Fort Payne area of northeast Alabama, the Guin/Winfield area of northwest Alabama, the Jackson area of southwest Alabama, and the Auburn area of east-central Alabama. In addition to the added transmitters, the equipment at the ten existing NWR locations in Alabama will be improved with added transmitting equipment, emergency power, and site-specific improvements to increase the reliability and coverage of those transmitting locations.

The project has become a far-reaching joint operation among Federal, state, and private sector organizations. The FEMA, Department of Agriculture, and the NWS are involved on the Federal level with a large portion of the funding coming from FEMA. The Alabama Emergency Management Agency (AEMA) has spearheaded the involvement of state agencies, including the coordination of the Alabama legislative appropriation of $165,000 to match funding from FEMA.

On the private side, the Alabama Rural Electric Association identified tower sites where no-cost space for transmitters was available. Auburn University through the Alabama Cooperative Extension Service has worked closely with the NWS, FEMA, and AEMA to buy and install the needed transmitter equipment. The Farmer's Telephone Cooperative, Alabama Power Company, the Clarke-Washington Electric Membership Corporation, and Auburn University have agreed to the use of their towers for new NWR transmitters. Additional help on the project has come from Alabama Educational Television through which much of the current NWR maintenance and distribution is currently accomplished.

And even though the project has involved a diversity group of players, the first benefits of the project are expected in mid-December, only 9 months after the tragic loss near Piedmont. At that time, the first new transmitter will be dedicated near Fort Payne serving the area devastated by the Palm Sunday tornadoes and a large section of northeast Alabama where reliable weather radio coverage has been non-existent.

—Brian E. Peters, WCM, WSFO Birmingham, Alabama

Washington State Grange—NWR Receiver Promotion Project

Background Information

The Washington State Grange, a nonprofit, public service organization active in the state of Washington since 1889, has committed itself to developing and implementing an educational campaign focused on urging the acquisition of an NWR receiver by all citizens, and especially by those facilities that have the responsibility for large numbers of dependent individuals.

The Grange has identified over 700 school districts, nursing homes, and hospitals in the state as future recipients of an NWR receiver. Placement of a weather radio receiver in every school district administration office within signal coverage of an existing NWR transmitter is the project's initial thrust. The 245 of 296 school districts that can currently receive the signal should have their receivers by the end of the year.

This project could not have been more timely. At the end of March 1994, Vice President Al Gore announced a new national effort to expand the capabilities and coverage of the current NOAA Weather Radio Service, an effort, Gore said, "which will place special emphasis on getting these radios installed in public places so they will be as common as smoke detectors."

Some weather radios, including those being distributed by the Grange, have the capability to receive a tone-alert signal, triggering a built-in alarm to warn listeners of severe weather announcements. NWRs advise people of severe weather warnings and watches ahead of mass media, buying extra time for people to react before dangerous weather hits their area. Weather Service offices tailor their NWR broadcasts to suit local needs. Routine information is updated every 1 to 3 hours, and the broadcasts repeat every 5 minutes or so. Efforts are currently underway to allow the NWR to broadcast all-hazard information. All-hazards broadcasts in the future would air warning information on earthquakes, volcano activity, and man-made hazardous conditions and would be used for communicating relief information after such disasters.

Joining the Washington State Grange in this endeavor and offering their time, energy, and full support are NOAA, the NWS, FEMA, and the Emergency Management Division of the Washington State Department of Community, Trade and Economic Development.

The Washington Public Utility Districts (PUD) Association provided funding to purchase weather radio receivers for those counties with active PUDs. For further information, contact the Washington State Grange, Christine Ohlsen, Project Coordinator, at 206-943-9911 or 800-854-1635.

—Ted Buehner, WCM, WSFO Seattle, Washington

International Decade for Natural Disaster Reduction

Disaster Day Activities — October 12, 1994

The United States broadcasted a television program on Wednesday, October 12, 1994, for the International Day for the International Decade for Natural Disaster Reduction. The program entitled "Kids Take Charge: Dealing with Natural Hazards" was seen by at least 3 million school children throughout the United States and was simulcast by the American Red Cross on its business network. The Satellite broadcast also reached Canada, Mexico, and Caribbean basin countries.

Students learned about natural hazards that occur where they live. They learned what to include in a Family Disaster Supplies Kit, how to "Drop, Cover, and Hold On" when an earthquake occurs, about advances in warning systems, including NWR and common sense steps they can take to make a safer world.

The 1-hour live program included meteorologist Mary Jo Parker from the NWS, seismologist Ross Stein from the U.S. Geological Survey, and disaster education specialist Rocky Lopes from the American Red Cross. Three youngsters, who experienced hurricanes, earthquakes, or starred in "Adventures of the Disaster Dudes," asked the experts questions. Moderator Gail Scott, a noted television anchorwoman and media consultant, fielded questions phoned in by students throughout the United States.

The program was produced by Fairfax County (Virginia) Public Schools with support from the U.S. Geological Survey and the U.S. Forest Service in cooperation with other Federal agencies (NOAA/NWS, FEMA, and the National Science Foundation) and several non-governmental organizations (the American Red Cross and the National Research Council).

—Susan Russell Robinson, U.S. Geological Survey

The Design and Management of an International Disaster Information Resource Network

"In today's new world order, information serves as an empowerment tool that can assist a Nation's pursuit of sustainable development by diffusing useful information to citizens, businesses, and research institutions." *–Vice President Al Gore*

Although some countries have a remarkably good capacity for coping with natural hazards, none has all of the expertise or physical resources to deal with the impacts of natural disasters. From time to time, even the most technologically advanced need help from their neighbors. Therefore, it is necessary, wise, and efficient for those concerned with disasters to establish a worldwide network of information systems related to hazard and disaster management so that information of the quality and quantity needed for international, regional, national, and local emergency readiness and response is available in real- and near-real-time.

Such a network will enable a Nation's disaster management community to eventually handle routine matters by themselves but also be able to draw on others as needed. One important goal of such a network is to simplify an emergency manager's search for relevant information from many sources and to compare information presently given at different scales and in different terminology. To be successful, information needs to be broken down into manageable units and prioritized according to need and utility.

Ongoing improvements in telecommunications and the application of common technical standards along with computer technology make it possible to generate and/or gather information at an unprecedented rate, distribute it instantly around the world, and through its analysis and application, create new products, services and businesses. New and improved communication and information technology opens opportunities for initiating improvements in integrating and coordinating information across disciplines and across national as well as international jurisdictions.

New forms of networking depart from traditional centralization of information and place greater emphasis on international information exchange as the central function. Information on a particular subject no longer exists solely in central depositories, but rather elements are stored in computers all over the world to be assembled into a larger picture through network links. Information exchange, organized through networking, forms the cohesion among "virtual communities." This international disaster information resource network will be based on a global virtual community devoted to managing disasters.

In order for the existing data management community in this new information "society" to further disaster management (including all characteristics—hazard and risk assessment, prevention, preparedness, warnings, response, recovery, and rehabilitation) must include information sharing as a major goal. This requires the disaster management community to first recognize the paramount importance of information exchange as a pivotal part of information management and then to acknowledge the supportive role that networks play in such activities.

Beyond this, there is a critical need to raise awareness among information system and network developers that their facilities represent important resources needed in the global exchange to mitigate disasters.

The worldwide network of computers called the Internet would be a reasonable framework upon which to build this emergency management network. Offering such advantages as a well-understood protocol and global coverage, the Internet is a logical choice.

In addition to offering global coverage, the Internet is a valuable asset to the emergency management community because it accesses a wide variety of emergency management information sources. For example, in addition to information providing organizations, such as Volunteers In Technical Assistance (VITA), the National Center for Earthquake Engineering Research (NCEER), etc., many of the Governmental and non-governmental organizations involved in emergency management operate on the Internet already.

A new project based on the Internet called IERRIS (International Emergency Reduction Readiness/Response Information System) is being developed to provide connectivity between these groups (see next article).

In order to provide connectivity to the emergency management community, which is likely to have a wide variety of technical capabilities, an international system such as this must be "scalable" to the user. Scalability means that the system will be able to provide maximal support for users with text-only capabilities, with or without Internet connections, and with a range of technical functionalities.

Thus we envision that such a system will include Internet-based servers in combination with computer bulletin board systems. This combination will provide access for users regardless of whether they are using sophisticated computer machinery or simple systems composed of little more than a terminal and a modem.

In order to enhance the training level of emergency managers, one of the primary purposes of this network is providing on-site training. Such a system could be used to train emergency managers in a wide variety of subjects, as well as facilitate communication among the emergency management community and between practitioners and researchers.

In addition to improving the training of the emergency management community, the Internet could provide critical emergency relief information between representatives in a stricken area, the U.N. and organizations involved in disaster relief. An Internet-based emergency management network would allow field reporting and responses made on a near real-time basis. The warning and training functions have the potential to save vast numbers of human lives to say nothing of property. However, a warning capability will also require security precautions in order to ensure that unauthorized people do not create such messages.

A system such as this could deliver the status of movements of supplies into an affected area. Such a system would also make emergency relief efforts visible to the U.N. as well as to the research community.

One of the other capabilities a world-wide network provides is the ability to send warnings of potential disasters to the population in an affected area.

In summary, the Internet, including such systems as IERRIS, provides the worldwide emergency management community with unprecedented tools for the mitigation and response to natural and technological disasters. Efforts are under way to develop systems that will utilize this tool to its fullest potential. Before the end of this decade, we will see Internet-based emergency management begin to achieve this goal.

—Edward Gross, Chief, Constituent Affairs and Industrial Meteorology, and Patrick Stingley, Dissemination Systems Section, Office of Systems Operations

Project IERRIS

"The IERRIS (International Emergency Reduction, Readiness/Response Information System) Project is an inter-actor (U.N. agencies, intergovernmental and non-governmental organizations, academic and specialized institutions, and the media) exercise for emergency and disaster-related information management. The Project provides a framework for inter-actor emergency/disaster information needs and problem analysis, evaluation, resource assessment, procedures and system design, operation, maintenance, and enhancement. The Project will enable the actors concerned to: adopt information management procedures that are of common benefit; to work with common and/or compatible information management standards and technologies; collaborate in the development of new information systems and procedures so as to meet information needs that are not met by existing systems and procedures; and to share and exchange suitable emergency-related information collected for respective institutional needs. This concerted effort will result in major improvements in the quality, specificity and timeliness of information available internationally for early warning, monitoring, reporting, resource mobilization, and coordination, evaluation, disaster reduction, and the information exchange, reference and referral services related to all these concerns...."

—IERRIS Project Manager, Giles M. Whitcomb; "The IERRIS Project" abstract; 23 September 1984

IERRIS employs modern telecommunications and computing technologies to improve emergency management globally. Most, if not all, of the technologies required for an integrated global emergency management system are presently available. Therefore, the goals of this project are to integrate and organize these existing capabilities into a coherent manner so that the emergency management community will be able to easily find and access resources in a consistent manner and to identify areas where additional new technologies can be applied to improving emergency management.

There are a multitude of systems in use today that perform many of the functions of IERRIS. In fact many, if not all, of its functions are already being carried out with the aid of automated information systems. In order to provide the greatest degree of service to the greatest number of users, the system shall be designed to include present systems as much as possible. Thus, the focus of the IERRIS Project becomes not one of "systems development" but one of "integration" of present systems.

Because IERRIS will potentially interface with an enormous number of divergent information systems, a first prototype called IERRIS Net has been developed and demonstrated.

IERRIS Net was a Internet-based multimedia server developed specifically to improve the assimilation and sharing of hazard-related information. A new system called HAZARD Net is under development which has emerged from the IERRIS Project. The Emergency Preparedness Information Exchange (EPIX) of Simon Fraser University, Vancouver, Canada, was a earlier prototype from which IERRIS Net and now HAZARD Net has evolved.

The address on Internet Mosaic for the EPIX, IERRIS Net, and HAZARD Net servers are:

EPIX	http://hoshi.cic.sfu.ca/~anderson/
IERRIS Net	http://hoshi.cic.sfu.ca/~ierris/
HAZARD Net	http://hoshi.cic.sfu.ca/~hazard/

For more information, contact Edward Gross at 301-713-0258 or egross@smtpgate.ssmc.noaa.gov.

—Edward Gross, Chief, Constituent Affairs and Industrial Meteorology, and Patrick Stingley, Dissemination Systems Section, Office of Systems Operations

Hazards Community Forum

Local Area Network Links WSFO Portland with Emergency Managers

The NWS continues to strive to make sure the latest weather warning products are available to the local and state emergency management agencies. In June 1993, the NWS and FEMA developed a cooperative initiative designed to improve the warning dissemination capabilities nationwide. The NWS' role in this venture is three-fold: (a) improve and expand public warning communications capabilities, (b) enhance statewide warning communications capabilities, and (c) ensure effective usage of critical pre- and post-warning information by the hazard's response community and the general public.

Within the Portland WSFO, a Novell client-service local area network (LAN) has been set up that links all the personal computers (PC) in the office. All the PCs use the LAN to share programs and data. One of the office PCs has been designated as the "dial-in" PC. It is set up to allow a user to dial into our LAN with their own PC, and use the LAN as if they were located in the Forecast Office. This dial-in PC is password protected to prevent unauthorized users from gaining access to the LAN.

In the NWS, the AFOS computer is the primary means of transmitting weather information. AFOS has the ability to send a product (forecast, warning, etc.) to a PC via a serial cable. In Portland, an office PC has been designated as the link between the AFOS and the LAN. When AFOS receives a pre-designated product, that product is immediately sent via the serial line to the designated PC for storage on the LAN. Once a product has been stored on the LAN, any PC connected to the LAN can gain access to that product, including a dial-in user.

This PC also has the ability to send products back to AFOS. A program on this PC is constantly looking for a specific file in a special directory. If this specified file is found, it is sent to AFOS via the same serial connection used to collect products from AFOS.

WSFO Portland has set up a directory on the LAN where certain warning and forecast products are stored. State and local emergency managers were given the password to access the LAN. As a dial-in user, the emergency manager can choose menu selections to view products stored in this directory. The same program used to view the products can also be used to print the products at the dial-in user's printer, or copy the product to the user's PC.

Other NWSFO's have reported similar uses of a Bulletin Board System (BBS) when coordinating with emergency management agencies. WSFO Birmingham, Alabama, uses a BBS to distribute hazard awareness materials. WSO Fort Wayne, Indiana, provides weather information to the local hearing-impaired community via a BBS.

What makes this arrangement special is that another menu choice has been set up that allows dial-in users to send products to the Forecast Office. Because emergency managers have access to information from a large number of emergency responders, information about the storm can be sent to the Forecast Office. A dial-in user (emergency manager) first types up and stores a report they would like to send to the Forecast Office in a predesignated file. The report would include storm information, such as spotter reports or damage estimates. The user then dials the Forecast Office's LAN and selects form the menu the option to upload that file into the LAN. This uploaded file can be transmitted to AFOS and alarmed at the Lead Forecaster's terminal. Thus, as a dial-in user, an emergency manager can send a message directly to the Lead Forecaster.

The Portland BBS was first described to emergency managers at the Annual Oregon Emergency Management Workshop in September 1993. County representatives were immediately eager to dial-in to the BBS and, where necessary, quickly bought the required software (WSFO Portland used "PC Anywhere" software for the sake of consistency). It wasn't too surprising that whenever a winter storm approached, several more county emergency managers would call the Forecast Office and request the password to access the BBS. Each time, it was emphasized that the BBS is intended to be a two-way street when it comes to sharing information; the emergency management agencies can get the latest weather warnings and forecasts as long as those agencies respond with information about how the storm is affecting their counties.

The response from the users has been overwhelmingly in favor of the BBS. Documentation of the BBS sent to each county emergency management office included a questionnaire to be returned to the Portland WSFO. In addition to outlining their early perception of the BBS, the questionnaire allowed the agency representatives to suggest what other hydrometeorological information would be useful on the BBS. If they can justify the addition of a product for their operational purposes, the product will be added to the menu.

The implementation of this BBS has strengthened the integrated warning concept in Oregon. Since hard copies of the warnings and forecasts can be copied and distributed among emergency response agencies, there is less word of mouth forecast dissemination and a more consistent understanding of the existing meteorological situation. Beyond detection, warning, and response, the BBS encourages interagency cooperation that regards all parties involved with useful information during times of emergency.

—Tom Ainsworth, Western Region MSD, and Paul Flatt, WCM WSO Tucson, Arizona

Establishment of Fire Rehabilitation Team in Washington

Last summer's devastating wildfires in eastern Washington left vast areas vulnerable to flooding, flash flooding, debris flows, and mudslides. Absence of protective vegetation layers results in rapid runoff of rainfall and rapid saturation of the soil. WCM Ken Holmes of Spokane, Washington, and I have been working with the USDA Forest Service and Chelan County Department of Emergency Management as part of the Chelan County Interagency Fire

Rehabilitation Team to establish an early warning system in the fire area.

Their efforts include spotter training, public education, establishment of an ALERT (Automated Local Evaluation in Real-Time) Network, and additional repeaters to provide NWR broadcasts to the south shore of Lake Chelan. Most of the $67,000 granted to the county by the state of Washington and the U.S. Forest Service will be used for purchase of the ALERT Network.

The Rehabilitation Team is also working with the local Walmart store and the Walmart Foundation to obtain funding for this project. Arrangements have been made with the *Wenatchee World* newspaper to place warnings, watches, and statements, concerning flooding, flash flooding, and debris slides, on their telephone access InfoLine.

The Washington Cascades have already received extensive snowfall this winter so it will not be possible to install the ALERT gauges before spring. However, it is expected to be several years before vegetation in the area recovers sufficiently to end the threat to the fire area.

—Ted Buehner, WCM, WSFO Seattle, Washington

Advanced Spotter Video

The NWS Southern Region Headquarters and TESSA (Texas Severe Storms Association) have secured funding to produce an advanced spotter training video. The video will be 30 minutes in length and will be divided into two 15-minute segments. The first segment will contain an overview of the warning system, a discussion of the atmospheric variables (instability, wind shear, etc.) that affect storm structure, and a review of non-tornadic weather phenomena. The second segment will contain an overview of the visual clues related to storm severity, supercells and their variations, supercell-produced tornadoes, and non-supercell tornadoes and vortices.

Alan Moller, Forecaster in Charge at WSFO Fort Worth, and I are the scientific contributors to the video. Pre-production meetings began the week of November 21 with the video targeted for release in the late January-early February 1995 time frame. As with recent slide sets, an effort will be made to include cases from outside the Great Plains. If you have any video that is representative of severe storms in your area, please contact me at 817-334-2812.

—Gary Woodall, Regional WCM, Southern Region Headquarters

Snow Bird's Weather Word Video

Snow Bird's Weather Word Video was developed by Pro-Kids Productions, Inc., for TV weather forecasters directed toward grade school students. Cartoon characters explain weather phraseology to children. Derrel Martin, MIC, WSO Nashville, assisted with the development and editing of this video by simplifying definitions of the various weather factors. The video, geared toward young people from the age of 5 through 11, fills a void in our efforts toward public education. Copies can be made available in amounts of 10s at $29/unit. For more information on this video, please contact Derrel Martin at (615) 754-8504.

—Derrel Martin, MIC, WSO Nashville, Tennessee

Plano, Texas, Hams Help Set up Pennsylvania SKYWARN Program

With a glimpse into the future, the Plano, Texas, Amateur Radio Club provided volunteers from the Nittany Amateur Radio Club in State College, Pennsylvania, some valuable insight into the operations of SKYWARN. Thanks to the resources of the Penn State University, hams in State College were able to establish a video teleconference link with the Texas hams.

For over an hour, Pennsylvania hams had free time to see and talk to their Texas counterparts and to get a view of how SKYWARN operates in an area frequented by severe weather. WCM Tom Dunham (N2KBI) and RFC Hydrologist Bob Fenner (N3PHN) were able to discuss experiences and ask questions of the Texas hams. The contacts were especially beneficial in setting up a new SKYWARN station at the State College weather office and provided the local hams with an opportunity to talk about related topics with an operating SKYWARN group. SKYWARN began official operations in State College with the transfer of warning responsibilities August 1, 1994.

—Tom Dunham, WCM, NWSO State College, Pennsylvania

Pacific Region's Activities

- ***Flash Flood Awareness*** — A Flash Flood Preparedness Workshop was held December 5, 1994, at the Pagoda Hotel in Honolulu, Hawaii. All involved in the flash flood warning and response system, including Federal agencies, state and county civil defense, county police, weather spotters, and the media were invited. Attendance was close to 100. The key topics were: (1) the flash flood threat in Hawaii; (2) new technologies used to identify flash flood events—the Hawaii hydronetwork and the WSR-88D radars; (3) the flash flood forecast program and media communications; and (4) interrelated roles of all players in the flash flood warning and response system. Presentations from the NWS in Honolulu was given by the WCM, Radar Focal Point, and Senior Service Hydrologist. In addition, all organizations from Hawaii County described their roles in the warning and response system. This included presentations by Richard Mitsutani, Official In Charge of WSO Hilo; Harry Kim, Administrator of Hawaii County Civil Defense Agency; Major Newton Lyman of the Hawaii County Warning Point; and Chris Loos of KIPA radio, the EBS station for the Big Island.

- ***"Storm Alert! - Hurricanes in Hawaii"*** — Area Manager/MIC, WCM, and staff at WSFO Honolulu assisted in production of "Storm Alert! - Hurricanes in Hawaii," which just recently (11/94) won the 1994 Cine Golden Eagle award. The production was funded by Oahu Civil Defense Agency, and the video was used extensively by the media during the hurricane season. Copies of the video were provided to local video outlets and the library system. According to Richard Tibbets, Jr., of

HUI PRODUCTIONS, the award is given to the finest film/video projects in the United States and is one of the top competitions in the world.

- The Regional Director, AM/MIC, and WCM attended the Pacific Insular States Earthquake and Hurricane Conference (9/7-9/8) hosted by State Civil Defense in Honolulu. The Regional Director gave a presentation on status of NWS modernization in the Pacific Region. The AM/MIC gave a presentation on meteorology of the north Pacific, highlighting tropical cyclone evolution and forecasting. The WCM explained the duties of the WCM, including development of spotter networks, coordination with local emergency management, and hurricane preparedness. Representatives of emergency management organizations from across the Pacific attended.

- The AM/MIC recently became a member of the Hazard Mitigation Technical Advisory Committee of the Hawaii Hurricane Relief Fund (HHRF). The Hawaii Hurricane Relief Fund was created by the Hawaii state legislature in 1993 to provide hurricane coverage for property in Hawaii. The HHRF policies are separate from homeowners' policies and would cover hurricane damage only. An HHRF policy goes into effect only during a declared hurricane watch of warning issued by the Central Pacific Hurricane Center.

- ***Guam's New NEXRAD Weather Service Office*** — Exciting times are ahead at the NWSO in Guam. For the first time, a fully staffed WSO will be in place on Guam (scheduled to open April 1, 1995). The office is currently staffed by the MIC, WCM, four forecasters, and a meteorological technician. With spin-up activities continuing during the next few months, another forecaster, four hydrometeorological technicians, and an electronic systems analyst are scheduled to arrive. A vigorous warning and preparedness program will be undertaken with this fully staffed WSO. The area that will be covered is roughly three-quarters the size of the continental United States, and includes Guam, the Commonwealth of the Northern Marianas Islands, the Republic of Palau, the Republic of the Marshall Islands, and the Federated States of Micronesia.

  The Navy's Joint Typhoon Warning Center on Guam issues Tropical Cyclone warnings and advisories. Current plans call for the new WSO to disseminate tropical cyclone warnings, watches, and advisories to the public.

  Public awareness of severe weather is of prime importance, especially during typhoon season. As a result, a vigorous and ongoing program of spotter recruitment will be undertaken over the next few months as the Weather Service presence expands in the Western Pacific. This spotter network will be vital to the forecast and monitoring capabilities of the NWS on Guam. With the many islands that encompass our area of responsibility, timely and accurate spotter reports will be fully utilized at the office. The WCM will conduct spotter training on a regular basis as he visits the many islands under his responsibility.

  New ground will be broken as civil defense, emergency services, and the news media are brought into a partnership dedicated to the warning and training of the civilian community during severe weather conditions. All areas of island life are affected by Western Pacific storms, but severe weather is not limited to typhoons and tropical storms. Tsunamis are a major concern, especially when an earthquake occurs nearby. Lightning, monsoons, and waterspouts are also capable of wreaking havoc in the Western Pacific.

  Education to coastal residents and the various Marinas will be undertaken as the NWS presence expands. Tourism is a main source of income for Guam, and coastal water safety, along with high surf conditions and forecasting, is of prime concern to coastal residents and tourists. The WCM will also undertake a program of education to the many schools on Guam and the outer islands to alert the students and teachers to the dangers associated with severe weather.

  In conclusion, as the NWS expands its presence on the island, a fully staffed and organized Weather Office will enter into a unique partnership with the inhabitants of Micronesia and the Marianas Islands—a partnership that will last well into the next century.

—Ed Young, Pacific Region Headquarters

Central Region's Activities

- ***Portland, Michigan, Tornado of 1999*** — Yes, you read that right! Twenty students from a seventh grade geography class at the Portland Middle School, in Portland, Michigan, tackled the issue of what would happen if a tornado was to hit the community of Portland. By the time the students' research project had produced a formal report, the Ionia County emergency services director, the Michigan State Emergency Management Division, American Red Cross, and NWS were both contributors and benefactors of the project.

  —David Runyan, MSD, Central Region Headquarters

- ***South Dakota Conducts first Annual Media Winter Weather Workshop*** — On October 18, WSFO Sioux Falls, conducted their first annual Media Winter Weather Workshop. The Workshop was designed to establish good working relations with both the broadcast and print media. The Workshop agenda addressed the concerns and topics of the media representatives. The Workshop had a large attendance and was so successful that two spring severe weather workshops are being planned—one for radio broadcasters and the other for television.

  —Todd Heitkamp, WCM, WSFO Sioux Falls, South Dakota

- ***YIKES, It's in Kansas*** — A trademark of Central Region's WCMs is their innovative multiagency community outreach programs. **Mike Akulow**, WSFO Topeka, is working with the Red Cross in a program to train high school student volunteers to present disaster education programs. This special 2-day training program is called "YIKES," which stands for Youth Informing Kansans on Emergency Situations. The students will be using NWS and American Red Cross brochures in their presentations. An additional goal of the program is to teach youth about leadership, public speaking, and volunteerism. The student training sessions begin this December. Mike will keep us informed of the progress and success of this project.

  —David Runyan, MSD, Central Region Headquarters

■ ***Illinois WCM Conducts Severe Weather Notification Survey*** — WCM Jim Allsopp, WSFO Chicago (Romeoville, Illinois), reports that the State of Illinois, through the Illinois Emergency Management Agency, recently conducted a survey on severe weather notification. This survey involved hospitals, public and private schools, community colleges and universities, nursing homes, senior centers, and other facilities where special groups assemble or people are institutionalized. The survey questioned how the facilities received notice of severe weather information.

The following results are interesting. Please note that the numbers were totaled but not broken down by type of facility. In addition, several state agencies targeted specific facilities that they license.

In summary, there are a large number of facilities in Illinois that provide care and shelter for special populations, such as students from preschool through higher education, the elderly, the sick, and the handicapped. Of these facilities, there are 13 percent that have no means of receiving severe weather warnings. Among the facilities receiving warnings, less than 40 percent use NWR.

Schools appear to be the biggest users of NWR. One third of the facilities rely on outdoor warning systems for notification. Another 21 percent rely on a phone call or radio notification from local emergency agencies (police, fire, emergency management).

As a result of this survey, a number of Illinois state agencies along with the NWS and the American Red Cross have set a goal of getting at least 50 percent of these facilities to use NWR within the next year. The head of each state agency will send a letter to facilities under its jurisdiction explaining the need for severe weather notification and disaster planning, describing NWR, providing NWR stations and frequencies and areas of coverage in Illinois, and a list of manufacturers of radios. Copies of the NWS NWR pamphlet will also be mailed out. Facilities not in NWR coverage will be urged to make arrangements with county or local emergency management or law enforcement officials to receive notice of warnings.

—David Runyan, MSD, Central Region Headquarters

Question 1. Does your facility receive notification of tornado watches, tornado warnings, severe thunderstorm watches, and severe thunderstorm warnings by a means other than commercial radio or television?

Agency	Facility	Yes	%Yes	No	%No
Public Health	nursing homes	138	80%	35	20%
Children & Family Services	day care	97	42%	132	58%
Community College Board	comm colleges	31	89%	4	11%
Board of Higher Education	universities	46	51%	45	49%
State Board of Education	schools	398	90%	45	10%
Emergency Mgmt Agency	various	1820	95%	103	5%
Total		2530	87%	364	13%

Question 2. If you answered yes to the above, by what means is your facility notified?

Facility	NWR	%	Siren	%	PD/FD/EM	%	Other	%
day care	27	17%	52	33%	56	35%	24	15%
comm colleges	24	37%	14	22%	19	29%	8	12%
universities	23	23%	30	31%	29	30%	16	16%
schools	275	69%	123	31%				
EMA - various	482	34%	488	35%	345	25%	92	7%
Total	831	39%	707	33%	449	21%	140	7%

Question 3. Does your facility participate in any local disaster planning or disaster drill activities with emergency services authorities?

Facility	Yes	%Yes	No	%No
nursing homes	69	40%	104	60%
day care	95	42%	131	58%
comm colleges	7	20%	28	80%
universities	21	23%	69	77%
schools	206	48%	227	52%
EMA - various	499	67%	248	33%
Total	97	53%	807	47%

Publications and Audiovisuals

New NWS Generic Displays

The NWS is proud to announce the completion of 10 new Nomadic generic displays. The intent of these new exhibits was not only to replace the outdated Weather Service displays but, more importantly, to blend the modernization message with service-specific themes. This "billboard-type" exhibit, displaying only a few words on a scenic photograph, should stimulate the audience to ask questions and learn more about the NWS. Furthermore, our goal is to provide customer service through user outreach by participating in national and regional events, such as boat shows, marine expositions, aviation events, major conferences, and other public gatherings where government services are represented.

Each of the NWS Regions will receive **one** exhibit. In addition, Weather Service Headquarters will retain four exhibits. Each Region should receive three red Nomadic cases: one case contains the fabric panels (two black end panels and one black fabric panel); the second case contains the frame/connecting bars, lights, etc.; and the third case contains the case-to-counter conversion kit. The one black fabric panel can be used to localize the exhibit. The selected exhibit panels would be placed in the case containing the fabric panels. Also, there are a total of 11 exhibit panels for each exhibit. Each exhibit will have four panels showing a scenic sunrise picture. The following words will appear across panels 2, 3, and 4: "The National Weather Service...a new dawn (with bullets) Observe, Predict, Protect." The fourth panel (the left panel [panel 1]) will be the interchangeable panel. There are eight panels to choose from: one panel displays all the programs (listed below) and there are seven individual panels showing each of the program areas. They are:

Weather Observing Technologies
Public Weather Warning and Forecast Services
Aviation Weather Services
Marine Weather Services
Hydrologic Prediction Services
Agriculture Weather Services
Fire Weather Services

In addition, each of the Regions will receive a wooden storage container (it's basically a "crate" to store the panels). The wooden container and panels (11 panels for each exhibit) will be shipped together. Each wooden box is 98 inches x 36 inches x 8 inches. They will be packed well for storage and include sufficient padding so that little shifting or buckling of the panels will take place. These containers should be laid flat, but if space is not available, they can be placed on their side.

Once these storage containers are delivered (one to each region), they should **NOT** be sent anywhere else. They are intended strictly as storage containers to hold the exhibit panels. The idea is to store the panels flat. Use the red Nomadic Display cases for shipping to NWS offices. Specific program panels would simply be removed from the storage containers and packed in the Nomadic Display cases.

If anyone is interested in borrowing one of the WSH exhibits, please contact either Jon Parein at 301-713-2488 or me at 301-713-0090.

—Linda Kremkau, Warning and Forecast Branch

New Brochure for Boaters

A new brochure, "Safe Boating Weather Tips" (NOAA PA 94058), is being developed by the Marine and Applied Services Branch. This brochure, geared primarily to new and recreational boaters, gives basic information on what to look out for and how to receive important weather information. This will be a good item to hand out at boat shows and talks to recreational boaters. This brochure should be available by February 1995.

—Laura Cook, Marine and Applied Services Branch

Private Sector Educational Materials

I have been informed by the General Counsel's office that any private sector educational materials that the NWS highlights must be conveyed in a narrative format without any appearance of endorsement. No company logo or trademark should be used.

NOAA does have the authority and it is acceptable to participate with a non-profit entity to promote awareness about NOAA and its programs and for the non-profit entity to solicit funds from private entities in support of the project.

Though we will continue to highlight private sector awareness materials in the *Aware Report*, no private company should derive a particular direct benefit from the publication.

Any questions concerning this matter, please contact me at 301-713-0090 or Catherine Shea, General Counsel's Office, at 301-713-0053.

—Linda Kremkau, Warning and Forecast Branch

Update on NWS Audiovisuals

- The publication, "Thunderstorms and Lightning...The Underrated Killers" NOAA PA 92053, is out of stock at this time. It is scheduled to be reprinted in January 1995 and should be restocked at the National Logistics Supply Center (NLSC) by early March.

- The Warning and Forecast Branch has recently duplicated copies of two slide sets—"Hurricane Andrew" and "Advanced Meteorologist/Spotter Training." Copies were sent to each of the NWS regions for further distribution to the field offices where most needed, especially to those spin-up offices. If funding becomes available, we will try to reproduce more copies. These

slide sets are available on loan from the Warning and Forecast Branch. Please feel free to contact me at 301-713-0090.

- In addition, three NOAA/NWS videotapes—"Terrible Tuesday," "Hurricane," and "The Awesome Power"—have been reproduced in large quantities for the NWS Regions. These are the only videotapes being reproduced at this time. I know more copies are needed, but when additional funding becomes available, more copies will be made. Also, several copies of each videotape will be maintained in our branch for loan-out purposes.

- To order large quantities of NWS brochures, you may either fill out a NOAA Form 24-12 or NOAA Form 37-4 and send to the NLSC, 1510 East Bannister Road, Bldg. 1, Kansas City, Missouri, 64131-3009. The maximum number you can order at one time is 300 of each publication. For more than 300 copies, please contact the Warning and Forecast Branch for approval.

- Anyone interested in **purchasing** any of the NWS slide sets, contact the National Audiovisual Center at their new address and telephone number below.

Pam Gorman
National Technical Information Service
National Audiovisual Center
5285 Port Royal Road, Rm. 1008
Springfield, VA 22161
TEL: 703-487-4253
FAX: 703-487-4678

—Linda Kremkau, Warning and Forecast Branch

Other Hazard Awareness Materials

New Materials from the American Red Cross

- ***"Jason and Robin's Awesome Hurricane Adventure"***
The American Red Cross is pleased to announce the release of "Jason and Robin's Awesome Hurricane Adventure." This program consists of a four-color, 12-page children's workbook and a 10-minute video designed for children in third through fifth grade. These items were funded by FEMA and developed by the Tampa Bay Regional Planning Council, Tampa, Florida. At the current time, FEMA is unable to make this program available. It is available, however, from local Red Cross chapters. The workbook comes in packages of 25—Red Cross stock number ARC 5044. The video, available in single copies, is assigned stock number ARC 5044V. Costs for reproducing these materials are funded by the Red Cross and are provided to chapters at no charge. Chapters, however, must pay shipping charges. Assistance to offset shipping charges will be appreciated. These materials are in the public domain and may be freely copied.

- ***"After the Disaster" Coloring Books***
The American Red Cross is pleased to announce the release of a series of coloring books designed for use by children ages 3-10 and a parent or teacher after a disaster. The coloring book series includes:

"After the Earthquake"	ARC 2201 (English) ARC 2201S (Spanish)
"After the Flood"	ARC 2204 (English) ARC 2204S (Spanish)
"After the Tornado"	ARC 2205 (English) ARC 2205S (Spanish)
"After the Storm"	ARC 2206 (English) ARC 2206S (Spanish)

***Note**: The "After the Storm" coloring book is useful for both tropical storms and hurricanes. It is not related to thunderstorms, winter storms, or tornadoes.*

The coloring books were developed for use on both large-scale disaster operations and smaller disasters administered by local Red Cross chapters. They are intended to be used by a child-adult team so a child's feelings about a disaster and his or her recovery process can be discussed and problems or concerns resolved.

They are in the public domain and may be freely copied as long as attribution to the American Red Cross remains intact. All of the coloring books come in packages of 25 and are available at no charge through local Red Cross chapters. Assistance to offset shipping charges will be appreciated.

- ***"Before the Disaster" Coloring Book***
If you want a coloring book for natural hazard preparedness, the "Disaster Preparedness Coloring Book" remains available from both the American Red Cross and FEMA. This 24-page coloring book is designed for children ages 3-10 and a "helper." Information that a "helper" should read and explain to the child about a particular disaster event is on the left and a related page for the child to color is on the right. The book covers residential fires, thunderstorms, tornadoes, hurricanes, floods, winter storms, earthquakes, and general disaster preparedness activities.

The coloring book is available from the American Red Cross in packages of 25 in English (ARC 2200) or Spanish (ARC 2200S). The Spanish version has just been released. It is also available in English only (at this time) from FEMA by writing to: FEMA, P.O. Box 2012, Jessup, Maryland, 20794-2012, and requesting publication FEMA 242. These materials are in the public domain and may be freely copied.

- The American Red Cross National Headquarters is relocating to a renovated facility in Falls Church, Virginia. As of the writing of this article, offices formerly located in downtown Washington, D.C., Alexandria, Virginia, and in other leased space in the DC Metro area are moving on a week-by-week schedule to the new office site. It is anticipated that all offices will be relocated by January 1995. The new address is:

American Red Cross
8111 Gatehouse Road
Falls Church, Virginia 22042
Tel: 703-206-8805

—Rocky Lopes, The American Red Cross National Headquarters Disaster Services

The Weather Channel's "On-Air Schedule"

Again, TWC has provided NWS with an "On-Air Schedule" for live and current forecast weather programs (see below). This 10-minute weather program airs at 4 p.m. and repeats at 1 a.m., EDT, Monday through Friday. "The Weather Classroom" offers living examples of weather in action, including weather news and fascinating short features on how and why weather happens. This schedule of daily topics is our most recent listing and runs through March 3, 1995. In the case of a hurricane or other catastrophic weather, "The Weather Classroom" may be preempted by the special coverage.

On-Air Schedule

Mon	02	Jan.	Weather Year in Review part 1
Tue	03	Jan.	Weather Year in Review part 2
Wed	04	Jan.	Clouds
Thu	05	Jan.	Fog
Fri	06	Jan.	Highs/Lows
Mon	09	Jan.	Lake Effect Snow
Tue	10	Jan.	Meteorology Field Trips
Wed	11	Jan.	Weather Basics and Terms
Thu	12	Jan.	Seasons
Fri	13	Jan.	Wind Chill/Heat Index
Mon	16	Jan.	Dewpoint/Humidity
Tue	17	Jan.	Lightning
Wed	18	Jan.	Doppler Radar
Thu	19	Jan.	Satellite Photos
Fri	20	Jan.	El Nino
Mon	23	Jan.	Tropical Systems
Tue	24	Jan.	Wind
Wed	25	Jan.	Jetstream
Thu	26	Jan.	Fronts
Fri	27	Jan.	Water Cycle
Mon	30	Jan.	Clouds
Tue	31	Jan.	GOES 8
Wed	01	Feb.	Fog
Thu	02	Feb.	Highs/Lows
Fri	03	Feb.	City Weather
Mon	06	Feb.	Sun Dogs & Rainbows
Tue	07	Feb.	Be a Meteorologist
Wed	08	Feb.	Lake Effect Snow
Thu	09	Feb.	Winter Precipitation
Fri	10	Feb.	The Nor'Easter
Mon	13	Feb.	Blizzards & Winter Storms
Tue	14	Feb.	Energy
Wed	15	Feb.	Meteorology Field Trips
Thu	16	Feb.	Weather Basics and Terms
Fri	17	Feb.	Seasons
Mon	20	Feb.	Wind Chill/Heat Index
Tue	21	Feb.	Dewpoint/Humidity
Wed	22	Feb.	Heavenly Skies
Thu	23	Feb.	Lightning
Fri	24	Feb.	Doppler Radar
Mon	27	Feb.	Satellite Photos
Tue	28	Feb.	Tornadoes
Wed	01	Mar.	Wind
Thu	02	Mar.	Jetstream
Fri	03	Mar.	Volcanoes and Earthquakes

For further information, contact the Education Services Department at 404-801-2503 or to order "The Weather Classroom" textbook, please send a check for postage and handling, made payable to A.M.F., P.O. Box 723247, Atlanta, Georgia, 31139-0247, with your street address and the name of your local cable company, in the amount of:

1 textbook	$6.82	5, 6, or 7 textbooks	$8.13
2 textbooks	$7.45	8 or 9 textbooks	$8.35
3 or 4 textbooks	$7.84	10 textbooks	$8.51

Include an additional amount of $5.00 per book if you would like more than 10 copies.

—Education Services Department, The Weather Channel

Aware Report Roster

Attachment B is the *Aware Report* Roster. Please review the list of telephone numbers, and notify me at 301-713-0090 if there are any changes. Also, if you know of someone who would like to be placed on the *Aware Report* distribution list, please have him/her contact the Warning and Forecast Branch.

—Linda Kremkau, Warning and Forecast Branch

ATTACHMENT A

Update on the Office of Meteorology's WSOM Chapters

WSOM Chapters	Status
B-19, Fire Weather Stations	Will be updated this winter due to new system for station numbering.
B-55, Distribution and Use of Satellite Data	Revision in progress; draft/review by January 1995.
OML to C-01, Style and Punctuation in NWS Products	A draft was reviewed by regional and field offices. Distribution is expected this spring.
C-10, State Forecast	Update for 7-day state forecast expected in late 1995.
C-11, Zone and Local Forecasts (main section)	Work will begin on a draft revision in 1995.
C-11, Zone and Local Forecasts (Appendix A)	Update expected in spring 1995.
C-12, 6- to 10-Day, 30-Day, and 90-Day Outlooks	Revised chapter for "long lead" outlooks by late January 1995. OML for 8- to 14-day Outlook expected late in 1995.
OML to C-20, National Public Weather Products	OML issued January 8, 1995, on reduction of National Weather Summary to one daily issuance.
OML to C-20, National Public Weather Products; C-44, Non-Precipitation Weather Hazards; C-64, NOAA Weather Radio Program	OML for dissemination of Ultraviolet indices in April 1995.
OML to C-21 on revisions to Short Term Forecast	Issuance expected by March 1995.
C-40, Severe Local Storm Warnings	Completed a full field review—look for implementation by February 1995. The new chapter includes the following: — Incorporates UGC into all appropriate C-40 products; — All-new examples of watches, warnings, statements, and short-term forecasts reflecting philosophies of the NWS MAR; — Conveniences associated with SRWARN are incorporated; — Use of contractions (except for computer model contractions) is eliminated (but not acronyms) in all products. This version does not include any changes associated with the severe local storms watch decentralization plan. Those changes will be integrated into the next chapter revision scheduled for 1995.
C-41, Hurricane Warnings	Field distribution—June 30, 1994.
OML to C-42,/C-44 Winter Weather Warnings/Non-Precipitation Weather Hazards	OML on Frost/Freeze issued—effective October 26, 1994.
C-45, Meteorological Discussions and Forecast Coordination	Chapter issued—effective September 28, 1994. OML expected in late 1995 for guidance products on days 6 and 7 and 8- to 14-day Outlook.
C-47, County Warning Areas	Latest appendix issued August 1994. Ongoing public information statements are updates. Next appendix distribution in March 1995.
OML to C-49, Warning Coordination and Hazard Awareness Program	Policy in place that updates Section 6, Coordination During Transition to a Modernized NWS, and Section 7.2, Non-NWS Material Requests. OML (a formality) pending.

WSOM Chapters	Status
C-60, Radio/TV Dissemination; C-61, Telephone Dissemination; C-62, Newspaper Dissemination; C-66, Dissemination of Public Warnings; and C-67, News Wire Dissemination	Work will begin on updating and probably consolidating these chapters late in 1995.
OML to D-06, Duties of IR Mets Requiring Exposure to Hazardous Situations	Will be sent to regions for review in August 1994.
D-21, Aviation Terminal Forecasts D-37, International Aviation Aerodrome Forecasts	Merge of these chapters must be completed before the U.S. METAR/TAF implementation set for January 1, 1996. Aviation Services Branch positions have been developed, and action items have been identified. Awaiting the required resources and/or increase in priority to do the job.
D-23, Special Aviation Forecasts and Events D-91, Aviation Liaison and User Support Program	Preliminary work to update, adjust, and reassign the contents of these chapters has been completed. Awaiting TDL commitment to support and ASB resources to complete the job.
D-25, Support to Air Traffic Facilities	Update completed. Target signature date is January 30, 1995.
D-30, Transcribed Weather Broadcast Text Products	Aviation Services Branch has received information regarding route forecast revalidation from the FAA. An OML is scheduled to be drafted during December 1994, regarding the changes.
OML to D-52, Marine Services for the Great Lakes	A draft was reviewed by Eastern and Central Regions. This OML modifies the headers of the Open Lake Forecast (GLF) and includes attachments that list current and future marine forecast responsibilities. Distribution is expected in late 1994.
F-42, Storm Data and Related Reports	Implemented effective with the July 1994 Storm Data. It uses the Paradox "Storm" software script to create, edit, and upload the Storm Data product. The Paradox software has been distributed to all WSFOs and WSOs. Paradox "Storm" should require the user only a few hours of use to acclimate. The User's Guide, an Appendix to F-42, is easy to follow. The word processing, though not fully intuitive, is sufficient for this purpose.
OML to G-52, Local Emergency Communications Planning	The OML to WSOM G-52 was implemented early summer. This is the OML to allow NWS warning offices to purchase amateur radio equipment and peripherals. It has long been awaited by Regions and warning offices alike.
F-60, Tsunami Warning Service	Will likely be updated in 1995.
F-61, Earthquake Reporting Program	Will likely be updated in 1995.

ATTACHMENT B

Aware Report Roster

Winter 1994/95

NWS Headquarters Staff, W/OM11

301-713-0090

Donald Wernly	Chief, Warning & Forecast Br.	Ron Berger	Synoptic and Dissemination Meteorologist
Linda Kremkau	Editor	Chris Adams	Senior Social Scientist
Bill Alexander	Mesoscale Meteorologist	Estella Speaks	Secretary
Rainer Dombrowsky	Warning Coordination and Tropical Met.	LaShone Darden	Office Automation Clerk
Rod Becker	Public Weather Program Meteorologist	Kina Wallace	Student Aide

Eastern Region

Rick Watling	Regional (Focal)	516-244-0123	Wayne Jones	Greenville-Spartanburg, SC	803-439-6605
Solomon Summer	Regional Hydrologist	516-244-0111	Joe Miketta	Mount Holly, NJ	609-261-6600
Dick Westergard	Albany, NY	518-869-6394	Dan Bartholf	Newport, NC	919-223-5122
Herb White	Binghamton, NY	607-729-7629	James Weyman	Pittsburgh, PA	412-262-1591
Mike Emlaw	Blacksburg, VA	703-857-2622	Richard Naistat	Portland (Gray), ME	207-775-7781
Gary Conte	Brookhaven, NY	516-924-0037	George Lemons	Raleigh, NC	919-860-1234
Stan Levine	Buffalo, NY	716-632-1319	Tom Dunham	State College, PA	814-234-9412
Steve Hogan	Burlington, VT	802-862-2475	Glenn Field	Taunton, MA	508-823-1900
Jerry Harrison	Charleston, SC	803-744-3207	Bill Sammler	Wakefield, VA	804-899-4200
Mike Washington	Charleston, WV	304-342-7771	Barbara McNaught	Washington, DC	703-260-0107
Larry Gabric	Cleveland, OH	216-265-2370	Mary Jo Parker	Wilmington, OH	513-383-0031
Steve Naglic	Columbia, SC	803-822-8135	Tom Matheson	Wilmington, NC	910-762-4289

Southern Region

Gary Woodall	Regional	817-334-2812	Larry Vannozzi	Lubbock, TX	806-743-7361
Dave Smith	Regional Hydrologist	817-334-2674	Dennis Decker	Melbourne, FL	407-259-7589
Keith Hayes	Albuquerque, NM	505-766-5572	John White	Memphis, TN	901-757-6441
Douglas Crowley	Amarillo, TX	806-376-2360	Jim Lushine	Miami, FL	305-536-4303
Barry Gooden	Atlanta, GA	404-486-1133	George Mathews	Midland, TX	915-563-2509
Brian Peters	Birmingham, AL	205-290-7305	Gary Beeler	Mobile, AL	205-639-6625
Don Ocker	Brownsville, TX	210-546-5377	Howard Waldron	Morristown, TN	615-586-3771
Bob Goree	Tallahassee, FL	904-942-9637	Jerry Orchanian	Nashville, TN	615-754-4633
Jim Stefkovich	Fort Worth, TX	817-334-3884	Frank Revitte	New Orleans, LA	504-589-6891
Gene Hafele	Houston, TX	713-534-5625	Jim Purpura	Norman, OK	405-366-6583
James Butch	Jackson, MS	601-965-4639	Rafael Mojica	San Juan, PR	809-253-4586
Fred Johnson	Jacksonville, FL	914-741-4370	Larry Eblen	San Antonio, TX	210-826-4679
Vacant	Lake Charles, LA	318-477-5285	Walt Zaleski	Tampa, FL	813-225-7747
Renee Fair	Little Rock, AR	501-834-0308	Steve Piltz	Tulsa, OK	918-581-7748

Central Region

David Runyan	Regional	816-426-3239	David Tucek	Indianapolis, IN	317-856-0362
Lee Larson	Regional Hydrologist	816-426-3220	Bill Bunting	Kansas City, MO	816-540-5147
Rod Palmer	Central Illinois	217-732-4029	Norman Reitmeyer	Louisville, KY	502-969-8842
Hector Guerrero	Aberdeen, SD	605-225-5547	Anton Kapella	Milwaukee/Sullivan, WI	414-297-3243
Vacant	Bismarck, ND	701-250-4224	Todd Krause	Minneapolis, MN	612-725-3741
Joseph Sullivan	Cheyenne, WY	307-772-2468	Brian Smith	Omaha, NE	402-359-2394
Jim Allsopp	Chicago, IL	815-834-0600	Ricky Shanklin	Paducah, KY	502-744-6424
Robert Glancy	Denver, CO	303-361-0661	Tom Magnuson	Pueblo, CO	719-948-9429
Jeffrey Johnson	Des Moines, IA	515-270-4501	Todd Heitkamp	Sioux Falls, SD	605-330-4244
John Kottke	Detroit/White Lake, MI	313-625-3309	Steve Runnels	Springfield, MO	417-863-1456
Jeff Hutton	Dodge City, KS	316-227-7140	Jim Kramper	St. Louis, MO	314-447-1876
Dennis Hull	Goodland, KS	913-899-2360	Mike Akulow	Topeka, KS	913-232-1493
Jeff Last	Green Bay, WI	414-494-5845	Gary Campbell	Wichita, KS	316-943-5893
Steven Kisner	Hastings, NE	402-462-2127			

Western Region

Richard Douglas	Regional (WPM)	801-524-4000
Bob Tibi	Regional Hydrologist	801-524-5137
Carl Weinbrecht	Boise, ID	208-334-9860
Ed Clark	Elko, NV	
John Lovegrove	Eureka, CA	707-443-6484
Dan Gudgel	Fresno, CA	209-291-1135
Lynn Valtinson	Great Falls, MT	406-453-9957
Ron McQueen	Las Vegas, NV	702-388-6735
Tim McClung	Los Angeles, CA	805-988-6610
John Cascad	Medford, OR	503-776-4303
Peter Felsch	Missoula, MT	406-329-4840
Rob Doherty	Pendleton, OR	503-276-4493
Mike Franjevic	Phoenix, AZ	602-379-4607
Bruce Bauck	Pocatello, ID	
Steve Todd	Portland, OR (Focal)	503-326-2340
Roger Lamoni	Reno, NV	702-784-5794
Roger Pappas	Sacramento, CA	916-551-1419
Dave Toronto	Salt Lake City, UT	801-524-5133
Charles Morrill	San Francisco, CA	408-291-7767
Ted Buehner	Seattle, WA	206-526-6095
Ken Holmes	Spokane, WA	509-353-2367
Paul Flatt	Tucson, AZ	602-670-6526

Alaska Region

Greg Matzen	Regional (WPM)	907-271-3507
David Goldstein	Anchorage	907-271-5102
John Lingaas	Fairbanks	907-456-0435
Robert Mosley	Juneau (WPM)	907-586-7493
George Carte	Palmer (ATWC)	907-745-4212

Pacific Region

James Partain	Regional (WPM)	808-541-1671
Thomas Heffner	Honolulu, HI	808-836-1831
Thomas Yoshida	Guam (Focal)	(011) 671-344-4160
Akapo Akapo	Pago Pago (Focal)	(011) 684-699-9130

NCDC - Storm Data

William Angel	Asheville, NC	704-271-4459