Summary of 1995 NWA Annual Meeting

by John A. Jannuzzi, NWA Secretary

The National Weather Association held its 20th Annual Meeting at the Adam's Mark Hotel in Houston, Texas, during the period, 3–8 December 1995. Attendance at the meeting was the highest ever (275). Participation would have been even greater had federal budget uncertainties not limited attendance by many federal agency offices. The overall impressions I came away with fall into three areas: Change, Teamwork and Innovation.

Change. We constantly hear of change and talk about it. We have lived through considerable change in the National Weather Service (NWS) and other weather service agencies. This has been especially true over the past few years of rapid and wide-spread modernization. One participant, in an after-hours conversation summarized it best with this description:

> Up until the last year or two, an NWS retiree could come back to the NWS and fit into operations rather easily. Sure, he/she may need someone to push buttons for them on new, unfamiliar equipment, but the data being examined and the suite of products being produced for our customers hadn't really changed much. Beginning recently, and continuing over the next few years, is a revolutionary change that will completely transform the way a forecaster operates and the products and services generated.

A few examples will illustrate the above concept.

Ron McPherson, Director of the NOAA/NWS National Centers for Environmental Prediction (NCEP) and keynote speaker for the Annual Meeting, outlined changes in the central guidance provided to field offices and other users. Just as NWS Forecast Offices are issuing more event-driven products, NCEP will be providing many more event-driven guidance products, rather than the schedule-driven product suite to which all are accustomed. In about two years, numerical weather prediction guidance will flow as a continuum of data, rather that products at 12-hour intervals associated with the 00Z and 12Z synoptic times. The NWS/NCEP Rapid Update Cycle (RUC) will run hourly with projections out to six hours to assist in mesoscale prediction. A continuous observation data stream from ASOS, radar, satellite and aircraft (ACARS) is forcing a total redesign of the North American observing system, which enables these changes.

Similar changes are occurring in field forecast offices. As Larry Mooney, NWS Area Manager for Colorado described, forecasters will be information managers, not just product generators. Many of the forecast tools and techniques discussed at the Annual Meeting were directed at the manner in which forecasters evaluate and manipulate (add value to) meteorological fields, rather than product generation.

Teamwork. Ron McPherson emphasized the need for teamwork in the modernized NWS and in all areas of NWS activity. Considerable coordination will take place between national centers and field offices to address the "problems of the day." Coordination between field offices will be essential to ensure that data, forecasts and warnings going out to end-users such as Weather Broadcasters are consistent.

As forecasters produce meteorological fields rather than specific end-user products, intra-office coordination must also increase. The new role for forecasters does not lend itself to individuals producing products for one subset of customers. Office workload will vary depending on weather events. Various NWS offices are experimenting with different ways of distributing workload. At least one NWS office is splitting the workload between short- and long-term analysis/forecasting chores. The Wichita NWS office is using "shift" duty schedules rather than "desk" duty schedules. At the beginning of each shift, the lead forecaster assesses the needs of the day, and work assignments are divided according to forecast talents and operational needs, rather than according to rigid disciplines (aviation or public). The bottom line is that the day of the "Lone Ranger" — putting out his/her domain forecasts and warnings in isolation — is rapidly coming to an end.

The Raleigh, North Carolina, NWS Forecast Office, has an excellent, innovative partnership with North Carolina State University. Forecasters and academia are working along side during significant and severe weather events. Suitable, interested students are given preliminary training in using equipment such as a slave monitor to the WSR-88D Principal User Processor (PUP) and the use of hard copy devices. The forecaster invites an available student to come to the office when significant weather is expected. The student documents activities and archives meteorological data for post-storm analysis, and assists the forecaster in operations by making hourly surface analyses. This partnership has given university students exposure to operational meteorology and spurred graduate research projects directly applicable to forecast operations.

Innovation. In my opinion, individual forecaster research came to a virtual end when AFOS was implemented in the NWS. As crude as it was, on-station archives of facsimile maps and teletype paper afforded forecasters access to meteorological data for case studies, making composites and conducting research projects. AFOS, with its perishable database, limited forecasters' ability to collect data for studies, and research efforts declined. That, too, has recently changed.

Personal Computers and other computer workstations at weather service offices and access to inexpensive CD-ROMs containing climate data, historical observations and gridded analysis fields have brought a resurgence to field office research. Forecasters at new NWS Forecast Offices are generating composites of significant weather events and making climatological summaries, which helps reduce the gap between the experienced and novice forecaster. The Fort Worth NWS Forecast Office has developed a computer application using CD-ROM climate data to allow a forecaster to interactively produce persistence probabilities of ceilings and visibilities for real-time aviation terminal weather forecasting.

Experimentation with Artificial Intelligence (AI) is assisting forecasters understand what key parameters need to be examined for a particular weather situation. The National Aviation Weather Advisory Unit is using AI (neural network) to examine meteorological parameters associated with aircraft icing. The Fairbanks, Alaska, NWS Forecast Office is using similar approaches to forecast lightning and to develop improved MOS temperature forecasts.

Dissemination of weather products, within and outside the NWS, has opened up considerably this past year with the explosive access to the Internet. NWS forecasters used to have to read about experimental products in journals or hear about them at conferences. Now field offices can have access to these products as they are being developed and influence their evolution. Many NWS Western Region offices this past year, participated in an evaluation of the Meso-Eta model by accessing it via the Internet. Other university meso-models are being evaluated in operations by field forecasters. Ensemble forecasts from the NCEP are also readily accessible. Experimental satellite derived products from GOES 8 and 9, such as satellite derived quantitative precipitation estimates, blended satellite and model precipitable water products, and multi-spectral infrared products for better detection of fog are available in real-time on the Internet. Forecast offices are experimenting with providing forecasts, climate data and other products, and are receiving reports from spotters via the Internet. The Tallahassee, Florida, NWS Forecast Office with an extensive Internet World Wide Web Home Page, received over five million user accesses (hits) last year.

Lastly, and not fitting into the above categories, were some interesting presentations on the NWS Climate Data Continuity Project. Detailed comparisons/analyses are being made between ASOS observations and previous NWS manual/instrumented observations. Differences are being documented and quantified. The old NWS HO83 temperature sensor exhibited different characteristics (biases) from ASOS temperature sensors. Some differences are attributed to sensor location changes, while others are due to the instrumentation. Different time weighted averages of wind speed between ASOS and human observations yield different values for peak wind gusts. Initial results show that ASOS wind gusts, which are a five-second average, are considerably lower than the NWS gust recorder values, which were on the order of a half-second average. The HO83 temperature sensor demonstrated a warm bias compared against ASOS temperature sensors in controlled studies.

The 20th NWA Annual Meeting through presentations, poster sessions, workshops, exhibits and social events afforded an excellent forum for operational activities to be shared, with great participation from the public, private and military sectors. It also gave a glimpse into the future of operational meteorology — a different way of practicing the science that is not very far away.

The 1995 NWA Council thanks Bill Read, the NWA Annual Meeting Coordinator and Program Chairperson, for doing outstanding work — the meeting was an unqualified success in every aspect. Bill was assisted on the program committee by Frank Brody, Dan Bellue, Alan Johnson, Kent Ehrhardt, Joshua Lichter, Kent Prochazka, Tom Adang and Dave Knapp. The arrangements committee lead by Gene Hafele also did outstanding work. Committee members were Doris Rotzoll, Mark Keuhn, Karl Silverman, Robert Van Hoven and Kim Mikesell.

The NWA appreciates the tremendous help from keynote speakers: Dr. Ron McPherson, Director of the NWS/NCEP, and Dr. Joe Friday, Director of the NWS. Special thanks go to weathercaster workshop leaders: Allan Eustis, Randee Exler, Bill Alexander and Ron Gird from NWS Headquarters, Dr. Neil Frank of KHOU-TV and Les Lemon of Loral Defense Systems. The NWA also thanks the training workshop leaders: Peggy Bruehl from UCAR-COMET for "Weather on the Internet"; Rod Scofield from NOAA/NESDIS for "GOES 8 and 9 Capabilities and Applications"; and Chris Alex and Howard Diamond from NWS Headquarters for "Implementation of METAR/TAF." Attendees also enjoyed a tour to the Johnson Space Center and the NWS Spaceflight Meteorology Group offices lead by Frank Brody and Karl Silverman. ❑