

## PRESIDENT'S MESSAGE

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This month I want to share with you what I believe is one of the most important and best ongoing education/training initiatives in the National Weather Service. It deals with the work of the NWS/Warning Decision Training Branch (formerly the Operational Support Facility's Operations Training Branch (OSF/OTB) in Norman, Oklahoma.

The National Weather Service's most important responsibility is the protection of life and property via accurate and timely warnings. Beginning with a co-authored paper in 1995 titled "Anatomy of an Effective Warning: Event Anticipation, Data Integration, Feature Recognition", by Quotone and Huckabee, the process of documenting and introducing a methodology that incorporated all aspects of the warning process began. I was fortunate enough to have been one of a few people to hear that talk. The topic and its approach were so unique and important; I became very excited about it even then. Prior to 1995, the thrust of warning improvement had been the development of hardware, software, and recognition of important "signatures" in remote sensing data sets.

Climatology would say that each NWS office, regardless of location or meteorological threat, begins forecasting any weather event from the standpoint that "no warning" will be required. So then how and when do these offices reach a decision to warn from this initial stance especially in an era of rapid increases in technology and data sets?

Following the '95 paper, the OTB members under the leadership of Don Burgess continued to research the topic of warning methodology, and began to study human decision-making processes such as SITUATION AWARENESS, and examined the role these disciplines played in warning issuance. In addition to co-authoring subsequent papers and developing warning-issuance related training material, the OTB began to develop training sessions to introduce a more complete warning decision methodology to the field. The first workshop was a three-hour exercise conducted at the 1996 NWA Annual Meeting in Cocoa Beach, Florida, by Liz Quotone and John Ferree, using data sets provided by George Wilken from the NWS Forecast Office in Little Rock. Shortly afterward, the OTB enlisted the ongoing assistance of Dave Andra (Science and Operations Officer, NWS, Norman, OK), and Bill Bunting (Warning

Coordination Meteorologist, NWS, Pleasant Hill, MO) and by the spring of 1997, the first, weeklong Warning Decision Making workshop (WDM) was held. The trainers are currently in the delivery stage of the third iteration (WDM III), at the conclusion of which, representatives from each of the 121 NWS Forecast Offices will have attended WDM I, II, or III workshops. The expanded emphasis of the OSF/OTB came into focus when it became the NWS/Warning Decision Training Branch (WDTB) as part of NWS Headquarters restructuring, which created a Training Division in October 2000.

Because of the interactions with those in the human factors field, the WDM instructor group has been able to involve leaders and authors in the related fields as contributors to the workshops. This includes participation of recognized authorities and leaders in the fields of situation awareness, uncertainty and its impact on forecasting, human judgment, and public response to warnings. This does not mean that meteorology is overlooked. Experts from NOAA/National Severe Storms Lab and elsewhere regularly provide guidance on the latest scientific findings as well as ongoing plans to improve data collection and display techniques.

The severe weather warning process involves conveying a threat to the public (and getting a desired response) by applying science and data interpretation skills, in a dynamic, time-stressed environment with considerable uncertainty. In addition, there can be substantial cost for a wrong decision (potentially loss of life). These attributes can be compared with other environments in which critical decisions are made (fighter pilots, emergency medicine, fire fighting). Many of these disciplines have also invested resources in technology and research, BUT have devoted entire divisions to the "human factors" involved in decision making. *Cont'd page 2*

### **\*\* IMPORTANT DATES \*\***

<u>1 June 2001</u>	<i>NWA Annual Meeting Abstracts due</i>
<u>15 June 2001</u>	<i>Meteorological Satellite Applications Award submissions due (see Feb. Newsletter)</i>
<u>30 June 2001</u>	<i>NWA Annual Award nominations due (see Feb. Newsletter)</i>
<u>1 August 2001</u>	<i>Sol Hirsch NWA Education Fund Grant applications due (see Feb. Newsletter)</i>
<u>13 - 19 Oct 2001</u>	<i>NWA 26th Annual Meeting (page 6)</i>
<i>Feature Inside: Thunderstorms &amp; Flying (page 3)</i>	

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As we move toward ever increasing use of technology and automation, the human (who is still ultimately responsible for the final weather warning decision) should always be considered and addressed every step of the way. The question should be asked, how does the technology help or hinder the decision maker? How does it improve their situation awareness? Is it helping them to apply years of experience in an effective way? Some of the answers may surprise you. For example, did you know that automation if misapplied can inhibit the use of expertise or its development? Yet it is that expertise needed to provide critical thinking skills in a dynamic environment.

The stated goal of these WDM workshops is: "Evoke a better understanding of the elements of the warning process, which leads to better decision making, which leads to better service." Those elements are many and varied and must all be addressed in order to train on the challenge of issuing warnings. The WDM instructors attempt to tie together many of these issues during each workshop by running participants through displaced real-time scenarios on equipment similar to what they use on site in their respective offices. These real-time scenarios are one of the best ways to improve decision-making skills in complex environments.

While some of you have had the privilege of attending these workshops, others of you are unaware of this truly exciting work. It was for that reason I wanted to share this with the organization as a whole. The NWS/WDTB staff continues to develop, augment, and further improve this essential work and related workshops. I congratulate these individuals and their support staff in Headquarters on a job well done! We all can be proud of them and we look forward to the continuation of this essential work.

I also thank them for leading workshops at many NWA meetings (most recently at the Central Iowa NWA Chapter sponsored Severe Storms and Doppler Radar Conference). These outreach workshops allow great interaction between the instructors, forecasters, broadcasters, researchers, college students and users for a terrific learning experience for all.

- Les Lemon

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Members receive the monthly NWA Newsletter and quarterly *National Weather Digest* as part of their regular, student or corporate membership privileges. Contact the NWA office or view the Internet Web site for membership information. Newsletter subscriptions are available at \$18.00 per year plus extra shipping costs outside USA. Single copies are \$1.50. Contact the NWA office with address changes.

## **NWA PUBLICATIONS' STATUS**

A primary NWA objective is to provide members with opportunities to publish research studies, analysis and forecasting techniques, literature reviews, product improvements and service initiatives, news items, and letters to the editors through a wide variety of media. Submissions are always welcome for the monthly Newsletter, quarterly *National Weather Digest*, the new *Electronic Journal of Operational Meteorology* on the NWA Web site (www.nwas.org), monographs, or other media as authors may suggest. The Editors also welcome comments from readers expanding on the discussions, results and conclusions of the materials published. They also accept comments regarding the validity of any article or the point of view of any author and can provide a forum for professional counterpoint. Indecorous criticism of authors or organizations for their points of view will not be accepted.

The volunteer editors certainly welcome and appreciate all submissions. Without member and guest submissions the publications are delayed. This combined (Mar-Apr) issue is shortening the Newsletter delay. The *Digest* recently mailed out had a cover date of June 2000 even though it was completed in early 2001. The recent increase in submissions to the *Digest* will allow us to publish the September and December 2000 issues within the next few months. And, hopefully submissions will continue to increase to allow the printing of March and June 2001 issues before the end of the year.

Frank Brody has signed on as a part-time managing editor for the Newsletter to help obtain articles and correspondence and to assist in technical editing and publishing tasks. This should help the Newsletter to be printed on a more routine schedule.

If members or guests have material to submit, but have trouble discerning which publication or editor to submit to, please send the material to the NWA office. THANKS to those who have submitted items to share through this newsletter and all NWA publications. Please continue to share and excite others to do the same.

- Exec. Dir.

## **ANNUAL SKY AWARENESS WEEK**

The 11th Annual Sky Awareness Week will be celebrated during **22-28 April 2001**. It falls during the same period as National Science and Technology Week, National Mathematics Awareness Week, Earth Day, Astronomy Day and National Parks Day. See Mike Mogil's Web site (www.weatherworks.com) for more information and ideas for special activities.

**National Volunteer Week is also 22-28 April.** The NWA has succeeded for over 25 years thanks to numerous volunteers. Your NWA still has only one full-time paid employee with a few part-timers. **THANKS to all NWA volunteers for work exceedingly well done!**

## AVIATION WEATHER NEWS

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**THUNDERSTORMS AND FLYING** — The NWA Aviation Meteorology Committee is elated to announce the implementation of an outreach training initiative. “An Internet course is now available to learn more about THUNDERSTORMS, THUNDERSTORM HAZARDS TO AVIATION and FLYING SAFETY.”

At the end of March, the NWA Aviation Meteorology Committee began taking registrations for a FREE INTERNET COURSE for pilots, other aircrew members, dispatchers, air traffic controllers, aviation meteorologists and any others interested in learning more about "Thunderstorms and Flying." This course, offered in the public domain, will take students through readings and interactive tutorials for six lessons. Unique to this Internet course is the students' ability to ask questions directly to specialists in aviation weather from the Department of Commerce, the Department of Transportation, the Department of Defense, industry, research and academia — using the wide diversity in NWA membership. Spread over a six-week period, the lessons cover basic thunderstorm meteorology, aviation hazards, strategies to avoid thunderstorms in the airport and enroute flying regimes, avoiding wind shear and microburst hazards, and a review of studies of aircraft accidents where thunderstorms played a significant role.

Tim Miner and other members of the Aviation Meteorology Committee developed this unique outreach education program for the continuing education of pilots and aviation operations specialists at all levels. Material comes not only from specialists in aviation weather, but also from members of the Allied Pilots Association, the Air Line Pilots Association, the United States Air Force, and the National Air Traffic Controllers Association.

The course has three main goals:

- to increase knowledge and awareness of thunderstorms as a major hazard to aviation,
- to provide an insider's view of the aviation weather support system, and
- to provide students an opportunity to interact directly with the weather providers.

The lessons begin 2 April 2001, although students can sign up and begin the course anytime from now until the interactive links are turned off at the end of May 2001. Thereafter, the course will be left on the NWA Web site as a tutorial. Students do not have to be members of the NWA and may take the entire course or any portions desired.

Thanks to Tim Oram, the Webmaster for the Aviation Meteorology Committee, the course is on the NWA Web site: [www.nwas.org](http://www.nwas.org). Select the Hot NWA Topic: NWA Aviation Weather Committee's Course on Thunderstorms and Flying. **All members should check it out!**

- Carolyn Kloth and Terry Lankford, co-chairs,  
Aviation Meteorology Committee

## REMOTE SENSING NEWS

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The **Cloud Top Pressure (CTP) product** derived from GOES Sounder data has been undergoing improvements to show more realistic cloud top heights for marine stratus along the Pacific Coast of the United States. The improvements were developed and implemented at the NESDIS Cooperative Institute for Meteorological Satellite Studies (CIMSS) at the University of Wisconsin ([cimss.ssec.wisc.edu/goes/realtime/grtmain.html#ctop](http://cimss.ssec.wisc.edu/goes/realtime/grtmain.html#ctop)).

The revised method tests for the presence of marine inversions using several GOES Sounder Infrared channels. It then compares brightness temperatures from the satellite with temperatures from the NWS National Centers for Environmental Prediction (NCEP) Aviation model first-guess profiles using either a bottom-up or top-down approach. These changes will be implemented operationally early in 2001, and will soon allow the assimilation of low-level (>650 hPa), as well as mid- and high-level derived GOES Sounder CTP's into NOAA Forecast Systems Laboratory's Rapid Update Cycle (RUC) model to provide more accurate short range prediction of clouds and precipitation.

A more detailed description of the technique, its impact to GOES Sounder derived cloud products, and forecasts from a Numerical Weather Prediction model utilizing the cloud products will be submitted to the *National Weather Digest* in the spring of 2001.

**NOAA-16 replaced NOAA-14 on 20 March.** NOAA-16, which successfully completed engineering and instrument calibration, is a Polar-orbiting Operational Environmental Satellite (POES). The second in a series of five POES satellites, it was launched 21 September 2000, and should operate over the next 10 years. The satellite it replaces, NOAA-14, was launched in December 1994. The POES satellites orbit the Earth from pole to pole, providing images of cloud cover, vertical temperature and humidity profiles, surface parameters such as sea surface temperature, snow, ice, and vegetation, and space environment parameters. The satellite also carries search and rescue instruments used internationally in locating ships and aircraft in distress. The use of satellites in search and rescue has helped save more than 11,000 lives since the Search and Rescue Satellite-aided Tracking (SARSAT), system began in 1982. The satellites are operated by NOAA's National Environmental Satellite, Data, and Information Service (NESDIS) in Suitland, MD. Currently, NOAA-15 and NOAA-16 are the two active polar-orbiting satellites; and GOES-8 and -10 are the two active geostationary satellites. NOAA also operates satellites in the Defense Meteorological Satellite Program. Information on polar satellites is on the Internet at: [poes2.gsfc.nasa.gov](http://poes2.gsfc.nasa.gov); [www.osd.noaa.gov/sats/poes.htm](http://www.osd.noaa.gov/sats/poes.htm) and [www2.ncdc.noaa.gov/docs/intro.htm](http://www2.ncdc.noaa.gov/docs/intro.htm)

- Fran Holt, Remote Sensing Committee Chair

## LOCAL CHAPTER NEWS

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**North Florida Weather Association** (formerly the First Coast NWA Chapter) met on 18 January 2001. President Pat Welsh called the meeting to order at 6:30 p.m. The meeting was held at the Jacksonville Public Library, in order to support a public program on "Deadly Florida Weather." Pat Welsh gave a brief introduction and overview of the meeting program, the mission of the North Florida Weather Association and a synopsis of the chapter's goals for the year. Then the following program ensued: *Florida Thunderstorms*, presented by Pat Welsh (NWS); *Lightning*, presented by Frank Andrews (USN); *Flooding*, presented by Bob Mobbs and Bob Kerns (NWS); *Navy Tropical Overview* (How Hurricanes Affect the Navy), presented by Bill Schulz (USN); and, *Rip Currents*, presented by Tim Deegan (WTLV/WJXX-TV). The program was very well received. The next regular meeting will feature a program on "Third World Meteorology: Bangladesh," featuring a presentation by Ed Rich. Mr. Rich has worked on and designed ground station elements for weather centers in some twenty countries. - Susan Shaw Keegan, Corresponding Secretary

**The Arkansas Chapter of the NWA** met at the NWS Warning & Forecast Office in North Little Rock on 15 February. The meeting was convened by Chapter President George Wilken at 7:05 PM with 16 members and guests present. Chapter member Scott Blair presented a program on his storm chasing experiences during the 2000 storm season. Scott gave a brief overview of storm chasing, then reviewed the severe weather season in Arkansas during 2000. He brought along two videos to show the group. The first was a brief look at highlights of his storm chases on three different days: Oklahoma and Texas on 15 April, Wyoming on 16 May, and Louisiana on 8 November 2000. The second video was a detailed look at storm chasing on 29 May 2000 in Nebraska. This video combined pictures shot by Scott and Chapter member Jason Politte. A question and answer period followed the presentation. A drawing was held for some door prizes and light refreshments were served.

The March 2001 meeting of the Arkansas Chapter of the NWA was convened at 7 PM 15 March, by President George Wilken, at the NWS office in North Little Rock. George introduced John David McFarland, geologist from the Arkansas Geological Commission. Although the University of Arkansas was involved in an NCAA basketball game, starting on television about the same time as the meeting, fifteen individuals were present to listen as John provided the presentation, "Earthquakes in Arkansas". John described the different types of movement that occur with an earthquake. Seismograph data further illustrated the different types of waves generated by an earthquake. He detailed the types of buildings most affected by earthquakes and offered some

safety tips to chapter members should an earthquake occur. John stated that the State of Arkansas had adopted an "earthquake building code" which provided for more substantially resistant structures. Arkansas is overdue for an earthquake of magnitude 6 or greater, and John stated that all of the audience would likely see it occur within their lifetime. He reviewed some of the effects of the earthquakes along the New Madrid fault back in the 1800s. Between 1811 and 1812, three catastrophic earthquakes of magnitude 7.0 or greater occurred in the area. Although most of the focus of future quakes would be in northeast Arkansas, the stronger quakes would be felt down into the central section of the state, as well as adjacent states. The larger metropolitan areas would see the greatest destruction. John used graphical illustration to show that although the greatest number of quakes in the New Madrid fault zone occur in Missouri and Illinois, by far the strongest quakes have occurred in Arkansas. Some photos illustrated the types of damage that would occur with various types of building structures. John also stated that not only building structure, but also the type and structure of the land that the buildings were built on, were important elements during an earthquake. The softer soils tend to "liquefy" and cause buildings to collapse, regardless of how earthquake resistant the building was by itself. Chapter members were very impressed with John's presentation. - Newton Skiles, Corresponding Secretary

For more information and links to Local Chapters, please check out the NWA Web site ([www.nwas.org](http://www.nwas.org)) and click on the Local Chapter block. If you are interested in starting a NWA Local Chapter contact Gary Petti, the committee chairperson, at [Gary.Petti@noaa.gov](mailto:Gary.Petti@noaa.gov).

## LETTER TO THE EDITOR

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Welcome to our new NWA President, Les Lemon. I agree with his incoming 'President's Message' in the January 2001 NWA Newsletter. But, I would like to amplify a point. He discussed a goal to encourage outdoor activity managers to adopt plans to protect life in case of severe weather -- hear, hear! I respectfully suggest including lightning, which isn't always considered severe weather. **Lightning is the #2 storm killer in the U.S.**, killing more than tornadoes and hurricanes combined, and inflicts life-long severe injuries on ten times more than it kills. The vast majority of these casualties are easily prevented, through increased public awareness, education, and action, including plans by outdoor activity managers. **The National Weather Service is sponsoring a National Lightning Safety Awareness Week 18-22 June 2001.** This would be good activity for our president's second goal of increased cooperation between NWS, the media and others -- what a good opportunity to cooperatively save lives and avoid heart-wrenching injuries! For those interested in learning about lightning safety, or finding materials to support lightning safety training, please visit the 45 WS Web site at: [www.patrick.af.mil/45og/45ws/LightningSafety/index.htm](http://www.patrick.af.mil/45og/45ws/LightningSafety/index.htm).

Also, I'm considering organizing a lightning/lightning safety workshop at the 2002 NWA Annual Meeting, if there's enough interest -- let me know. - William Roeder

## *NCEP History*

The National Centers for Environmental Prediction (NCEP) can trace its roots back to 1954 and an organization called the Joint Numerical Weather Prediction Unit, which was formed from elements of the Air Force, Navy and the U.S. Weather Bureau (as the NWS was known then). This unit was put together so all of these organizations could share their resources in order to exploit the (at that time) new computer technology for weather forecasting. In 1958, this unit was combined with the National Weather Analysis Center and an extended weather forecasting branch and the resulting organization was called the National Meteorological Center (NMC). In 1961, the Weather Bureau assumed full funding of the center, making it a wholly civilian organization. Over the next 30 years or so, NMC acquired functions in climate monitoring and forecasting, severe storm and tornado forecasting, tropical cyclone forecasting, and marine and aviation weather forecasting. Because of the great variety of these additional tasks, NMC was reorganized in 1995 into the nine NCEP centers. NCEP Central Operations, the Environmental Modeling Center, the Climate Prediction Center, the Hydrometeorological Prediction Center and the Marine Prediction Center are located in the World Weather Building in Camp Springs, Maryland. The Aviation Weather Center is located in Kansas City, Missouri; the Storm Prediction Center is located in Norman, Oklahoma; the Tropical Prediction Center is in Miami, Florida; and the Space Environment Center is in Boulder, Colorado. In later articles, each center's activities will be highlighted.

The following paragraphs describe NCEP's operational climate and ocean models. The global and regional prediction models were discussed in the last Newsletter.

## *Climate Models*

Seasonal ensemble climate forecast run: consists of a 20-member ensemble of an atmospheric general circulation model (AGCM). The forecasts are run once per month with 28 levels and a horizontal resolution of approximately 300 km (T42). It produces seasonally averaged forecasts out to 7 months. The horizontal resolution of this model will be increased to T62 (approximately 210 km) by October 2001.

Coupled general circulation model (CGCM): run four times each week out to 11 months to produce monthly averaged ensemble sea-surface temperature forecasts. It consists of a Pacific basin ocean model coupled to a global spectral atmospheric model. The ocean model has a horizontal resolution of approximately 150 km and 28 vertical levels and the atmospheric model has a horizontal resolution of about 300 km (T42) with 28 vertical levels. Forecasts are issued once per month using the 16-member ensemble of runs produced during the previous 4 weeks.

## *Ocean Models*

Global ocean wave forecast model (NOAA WAVEWATCH III, NWW3): run twice daily on a 1.25 x 1.00 degree latitude/longitude grid from 78N to 78S, producing wave directions, frequencies and heights out to 126 hours. In addition, several regional ocean wave models are run (nested in the global model). An Alaskan Waters model (AKW) produces similar output on a regional 0.50 x 0.25 degree longitude/latitude grid ranging from 160E to 123W and from 45N-75N. A Western North Atlantic model produces output on a regional 0.25 x 0.25 degree longitude/latitude grid ranging from 98W to 30W and from the Equator to 50N. During the 2001 Hurricane season, a version of the Western North Atlantic model will be run to 78 hours using winds from the GFDL Hurricane model.

For further information and updates, please see Web site: [www.emc.ncep.noaa.gov/modelinfo/index.html](http://www.emc.ncep.noaa.gov/modelinfo/index.html)

- Lauren Morone, NWS/NCEP

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## MEETING NEWS

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- **5th Annual Ohio Severe Weather Symposium** sponsored by the Ohio State University Meteorology Club will be held on Friday, **27 April 2001** at The Fawcett Center, 2400 Olentangy River Road, Columbus, Ohio. Information is at Web site: [twister.sbs.ohio-state.edu/](http://twister.sbs.ohio-state.edu/) NWA members Greg Elsaesser and Eric Wilhelm are Co-Head Coordinators. E-mail your name and affiliation to [elsaesser.2@osu.edu](mailto:elsaesser.2@osu.edu) or [wilhelm.51@osu.edu](mailto:wilhelm.51@osu.edu) to let them know you will be attending. Symposium is open to all.
- **GOES Users Conference** will be held **22-24 May 2001** in the NIST Auditorium in Boulder, Colorado. The goals are: 1) to inform GOES users of plans for next generation capabilities; 2) to provide information on potential applications; 3) to determine user needs for products, data distribution, and data archiving; 4) to assess potential user and societal benefits of GOES capabilities; and 5) to develop methods to improve communication between NESDIS and the GOES user community, including a formal process for receiving input. The Conference is being organized by NOAA with cooperation of NASA, the AMS, the NWA, the National Institute of Standards and Technology (NIST), and WMO. A partial list of speakers includes: Dr. Elbert W. (Joe) Friday, Director, Board of Atmospheric Sciences and Climate, National Research Council; Mr. Ray Ban, Senior Vice President of The Weather Channel; Dr. James Purdom, Director, NESDIS Office of Research and Applications (ORA); Dr. W. Paul Menzel, Senior Scientist, NESDIS/ORA; Dr. Louis Uccellini, Director NWS National Centers for Environmental Prediction (NCEP); Mr. Gregory Mandt, Director, NWS Office of Climate, Water, and Weather Services (OCWWS); and Mr. Greg Withee, Director of NESDIS. For more information please visit Web site: [www.osd.noaa.gov/conference](http://www.osd.noaa.gov/conference). Online registration will be at: [www.boulder.nist.gov/blconf.htm](http://www.boulder.nist.gov/blconf.htm). Hotel accommodations are available at the Millennium Hotel Boulder (formerly the Regal Harvest House): 303-443-3850. When calling for reservations, mention the GOES Users' Conference for the rates of \$90 per night or \$120 per night. For additional information, please contact: Wendy Ortega Henderson at [ortegaw@boulder.nist.gov](mailto:ortegaw@boulder.nist.gov) or phone: 303-497-3693.

• **NWA 26th Annual Meeting, 13-19 October 2001**

The National Weather Association's 26th Annual Meeting will be held at the **WestCoast Ridpath Hotel**, 515 W. Sprague Avenue, **Spokane, Washington** 99201 from Saturday, 13 Oct 2001 through Friday noon, 19 Oct 2001.

The Annual Meeting will include:

*13-14 Oct: BROADCASTER WORKSHOPS* beginning late Saturday and continuing all-day Sunday will include special presentations, exhibits and hands-on workshops appropriate to continuing education for weathercasters, but open to all interested. The annual TAPE SWAP will be on Sunday evening. A separate TAPE SWAP for mentoring students is being considered.

The Aviation Meteorology Committee is also planning a training outreach workshop for 14 October 2001.

*15-19 Oct: ANNUAL MEETING GENERAL SESSIONS* from Monday morning through noon on Friday will include a mix of formal presentations, poster sessions, training workshops, and exhibits on a wide variety of topics relating to OPERATIONAL meteorology, hydrology, weather broadcasting, new research applications, and related activities. A special workshop on Downbursts is being planned by William Roeder of the Weather Analysis & Forecasting Committee. The Annual Awards Banquet will be on Wednesday evening.

The Annual Meeting Program Chairperson is John Livingston, National Weather Service Forecast Office, Spokane, WA, (509) 244-0110x222, E-mail: John.Livingston@noaa.gov.

The Broadcaster Workshop Chairperson is Kristine Kahaneck of Dallas, TX, (972) 304-4229; NatWeaAsoc@aol.com

**ABSTRACT SUBMISSION: The deadline for submission of abstracts is 1 June 2001.** Abstracts can be sent via e-mail to the Program Chairperson at John.Livingston@noaa.gov. Please write "NWA Abstract" in the subject box. The abstract may be included within the body of the e-mail or as an attachment. Please include the following information in the e-mail message: full abstract title, author(s) name(s) and affiliation(s)/address(es) [designate which author(s) will be giving the presentation and whether poster or oral presentation is preferred], audio/visual requirements including software (e.g., PowerPoint, Corel, Internet access) and equipment (e.g., laptop PC, overhead projector), and list the primary contact with their phone number and e-mail address.

**ABSTRACTS can be sent online via the NWA Web site: [www.nwas.org/2001abstracts.html](http://www.nwas.org/2001abstracts.html).** Simply fill out the form (you may cut-and-paste your abstract from your word processor into the form), and click on the "Submit Query" button.

If you are unable to submit your abstract electronically please contact John Livingston or the NWA office.

For information on exhibits, accommodations, registration and the overall meeting program, please contact the NWA office at Tel/FAX: (334) 213-0388 or e-mail: NatWeaAsoc@aol.com. Meeting registration fees will be similar to last year and will be published by June 2001 in the Newsletter and on the NWA Web site ([www.nwas.org](http://www.nwas.org)). The meeting agenda will be posted on the Web site and Newsletter in August 2001.

**ANNUAL MEETING HOTEL INFORMATION:** The WestCoast Ridpath Hotel is in downtown Spokane, Washington. The NWA discount hotel rates are: \$63 for single and \$73 for double/triple/quad. Please call 1-800-325-4000 for reservations and request National Weather Association's special conference rates.

• **SHORT COURSE: Studies in Weather Analysis and Forecasting**, 18-28 June 2001. The Science center for Teaching, Outreach, and Research on Meteorology (the STORM Project) at the University of Northern Iowa (UNI) is sponsoring an applied weather analysis and forecasting course for undergraduate atmospheric science students and pre-college science teachers. STORM is a cooperative program between NOAA and UNI. The STORM Project will provide housing, meals, course materials, and 3 hours of academic credit (undergraduate or graduate) at no charge. To apply, see Web site: [www.uni.edu/storm/swaf1.htm](http://www.uni.edu/storm/swaf1.htm). **Apply by 30 April 2001.**

• **International Conference on Disaster Management** will be held 6-10 August 2001 at the Rosen Centre Hotel in Orlando, Florida. For more information call: (850) 906-9221 or visit Web site: [www.DisasterMeeting.com](http://www.DisasterMeeting.com)

• **Weather Analysis and Forecasting Issues in the Central United States.** The NWA Weather Analysis and Forecasting Committee, the Department of Soil and Atmospheric Sciences at the University of Missouri-Columbia, and the Missouri Climate Center announce their first conference on Weather Analysis and Forecasting Issues in the Central United States. The conference will be held at the University of Missouri-Columbia, **30 November - 2 December 2001** to address all topics relating to operational meteorology in the Midwest (emphasis on heavy precipitation forecasting, winter weather phenomena, and interannual variations in Midwestern climate); oral presentations are encouraged, although space will be allotted for poster exhibitions. Registration information is at Web site: [solberg.snd.missouri.edu/WAFICUS/](http://solberg.snd.missouri.edu/WAFICUS/). Abstracts are due by 31 July 2001 to: Sharon Burnham, University of Missouri-Columbia, Department of Soil and Atmospheric Sciences, 116 Gentry Hall, Columbia, MO 65211 (with abstract, please provide contact information and specify oral or poster presentation). Conference organizers are: Drs. Anthony R. Lupo and Patrick S. Market, Assistant Professors of Atmospheric Science at University of Missouri - Columbia.

• **Interactive Symposium on the Advanced Weather Interactive Processing System (AWIPS), 13-18 January 2002.** As part of the 82nd AMS Annual Meeting, in Orlando, Florida, the AMS Board for Operational Government Meteorologists, AMS Committee on Interactive Information and Processing Systems, the AMS Committee on Weather Analysis and Forecasting, the National Weather Association and the National Weather Service are co-sponsoring an AWIPS interactive symposium. The theme of the 2002 symposium is "Leveraging AWIPS to Maximize Our Nation's Forecast and Warning Support". The primary purposes of this symposium are three-fold: to provide a forum for the exchange of status, plans, and concepts for AWIPS in operational use; to increase communication and collaboration among operational users of AWIPS and the hydrometeorological community; and an opportunity to demonstrate AWIPS capabilities. Presentations and papers are solicited in the following areas: Overview of AWIPS; Visualization; Data Handling; Local Modeling; Internet/Web Opportunities and Challenges; Operational Meteorological and Hydrological Applications; Specialized Uses; Interactive Forecast Preparation System; Locally Written Applications, and Education and Training. **The deadline for abstracts is 6 July 2001.** Submit abstracts electronically via Web site (<http://www.ametsoc.org/AMS>). AMS will provide instructions to authors of accepted papers. Camera-ready

manuscripts (page length to be determined), including photos and diagrams, must be submitted by **1 OCTOBER 2001** to AMS Headquarters. Page charges will be assessed to defray printing costs. Registrants will receive a preprint volume at the conference. For further information or suggestions to enhance the symposium, please contact: Major Ken Carey, Air Force Studies and Analyses Agency, tel: 703-588-8626; e-mail: kenneth.carey@pentagon.af.mil or contact the NWA office.

## **JOB CORNER**

*(Ed: The NWA lists job openings free from equal opportunity employers for the benefit of members. See the Job section on the NWA Web site: [www.nwas.org](http://www.nwas.org) for more complete details on the following jobs, short notice listings and job links.)*

**UNIVERSITY OF HAWAII** RESEARCH ASSOCIATE IV (RESEARCH FORECASTER), 81218T; UH-Manoa, Institute for Astronomy; full time; federal funds; to begin on mutually agreed date; for one year, annually renewable pending availability of funds. Duties: In close collaboration with the lead forecaster, issue custom forecasts for Mauna Kea Observatories for weather conditions to ensure observations can be performed at optimum conditions. Monitor the status of numerical modeling runs and graphical output. Maintain data feeds, Web site, data archive, and retrieve archived data as needed. Conduct forecast verifications. Support and conduct case study investigations aimed at improving Mauna Kea weather forecasts. Minimum Qualifications: Completion of college level work equivalent to Bachelor's degree in meteorology or closely related field; and two years of progressively responsible experience in weather forecasting as it relates to the Unix environment. Desirable Qualifications: Experience in programming with Perl, creating Web pages using HTML and CGI, and have a working knowledge in Gempak. Pay range: P07, \$34,920. To apply: Send cover letter, APT Application (UH Form 64, [www.hawaii.edu/ohr/employ.htm](http://www.hawaii.edu/ohr/employ.htm)), resume and the names and contact information of three professional references to Personnel Officer, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822. Closing date: 4/27/01. Inquiries: Michele Tom, (808) 956-7593. For technical inquiries: Dr. Steven Businger, (808) 956-2569 or [businger@soest.hawaii.edu](mailto:businger@soest.hawaii.edu).

**EXECUTIVE JET AVIATION**, the leading purchaser of business jets in the world, has an immediate opening for an aviation meteorologist. The Meteorology department is located at Executive Jet's operations center in Columbus, Ohio. Minimum requirements are: a B.S. in Meteorology from an accredited university or military trained; Excellent communication skills with ability to convey pertinent weather information; Ability to work quickly and efficiently under deadline pressures; Ability to work rotating shifts with rotating days off; Candidates with aviation forecasting experience preferred. Responsibilities include forecasting hazardous aviation weather conditions; monitoring areas of the world for pre-determined weather minimums as well as checking flight schedule for conflicts with forecast weather conditions, airport weather minimums, and aircraft performance. Also will be responsible for briefing flight crews and customers on weather conditions; preparing specified cities forecasts; confirming and forecasting runway conditions during inclement weather. The positions include competitive salary and benefits package including our own company flight school where you too can learn to fly. Qualified candidates may send a resume and cover letter to: E-Mail: [bbennett@netjets.com](mailto:bbennett@netjets.com) or fax: 614 239-2084 or via US mail: Executive Jet, 4111 Bridgeway Ave, Columbus, OH 43219. Resumes will be accepted until the position is filled. To find out more about Executive Jet, visit us on the web at: [www.netjets.com](http://www.netjets.com). Executive Jet is a Berkshire-Hathaway Inc. Co. and an Equal Opportunity Employer.

**WEATHER RESEARCH CENTER** seeks an individual with experience in forecasting and administration. The selected individual will work with a team of forecasters and operate Weather Research Center's world-wide forecast operations center. Position available immediately. Major Duties: Assist the Director/President of Weather Research Center; Hire and manage forecasters; Forecast Operations: Marine Weather Forecast, Radio Forecast, Long Range Forecasts, Tropical meteorology; Supervise the monitoring of weather for severe and tropical events; Monitor and verify forecasts; Communicate with Forecast Clients and Employees; Prepare Forecast Schedule and deal with employee issues; Provide technical support to other WRC projects; Perform other duties as necessary to support WRC; Help with marketing of services; Perform public relation duties through center tours, talks, weather classes and weather camp. Basis for Evaluating Candidates: A bachelors degree in meteorology. The individual should be familiar with DOS/Windows platforms, and with weather model data sources, analytical tools and methodologies. Applicants who meet the minimum qualification requirements will be further evaluated and ranked on the basis of their experience. Salary, life-insurance, paid medical benefits. Interested candidates please mail or fax a cover letter, resume, and transcript (if recent graduate) to: Jill F. Hasling, CCM Director, Weather Research Center 3227 Audley Houston, Texas 77098 Fax: 713-528-3538. Weather Research Center is an Equal Opportunity Employer. E-mail: [jhasling@worldnet.att.net](mailto:jhasling@worldnet.att.net).

**PELMOREX, INC. CANADA** Each week more than eight million Canadians rely on The Weather Network and MétéoMédia, 24-hour national specialty television networks, broadcasting coast to coast in English and French, for up-to-the-minute accurate forecasts. The Weather Network, MétéoMédia and their respective Web sites, <http://www.theweathernetwork.com/> & <http://www.meteomedia.com/>, are wholly owned and operated by Pelmorex Inc. Through its television, newspapers, telephone and Internet services, Pelmorex is Canada's leading private sector weather information provider. We are seeking experienced Meteorologists to join our team in Mississauga, Ontario. You will be working in a progressive environment that includes a state of the art forecasting center, creating forecasts for all regions of Canada. Come and join our expanding and dynamic team! This position is based in Mississauga, which is located 20 minutes west of Toronto, Ontario. Qualifications: A University degree/diploma in Meteorology; Minimum 2 years of operational forecast experience; Must have good interpersonal skills and be committed to working in a team environment; The positions are full-time. Shift work will be required. Only those candidates selected for an interview will be contacted. Qualified applicants should submit their resume and salary expectations to: Human Resources, Fax: 905-566-9696, e-mail: [hr@on.pelmorex.com](mailto:hr@on.pelmorex.com). We ask all candidates to please indicate where they saw our job advertised. Only those candidates selected for an interview will be contacted.

**NOAA/OCEANIC & ATMOSPHERIC RESEARCH** is seeking applicants for METEOROLOGIST, for grades ZP-3/4 (equivalent to GS-11 through 14, with starting salaries from \$44,352 to \$97,108), to coordinate OAR research and service contributions to mesoscale and regional scale meteorology. This position is located at NOAA/Office of Oceanic and Atmospheric Research Headquarters in Silver Spring, Maryland. For further information, please see Web site: <http://www.usajobs.opm.gov/wfjic/jobs/BW2965.HTM>

The NOAA Office of Oceanic and Atmospheric Research is also seeking applicants for METEOROLOGIST, for grades ZP-2/3 (equivalent to GS-7 through 12, with starting salaries from \$29,996 to \$69,099), to coordinate OAR research and service contributions to mesoscale and regional scale meteorology. This position is located at NOAA/Office of Oceanic and Atmospheric Research Headquarters in Silver Spring, Maryland. For further information, please consult the vacancy announcement provided at Web site: <http://www.usajobs.opm.gov/wfjic/jobs/BW2963.HTM>



**BARON SERVICES, INC.** Baron Services, Inc. is a multi-million dollar company supplying Doppler radar and sophisticated weather displays to a client base that includes nearly 400 television, radio, emergency management and governmental units. Our continued growth has led to the need for programmers (C/C++ in Windows environment), meteorological research and modeling professionals, Doppler radar managers and technicians, and sales professionals. Confidential resumes and salary history should be addressed to: Rose Marie Phillips, Human Resources, Baron Services, Inc., 4930 Research Drive, Huntsville, AL 35805 or by e-mail to [rmphillips@baronservices.com](mailto:rmphillips@baronservices.com).

**ACCU WEATHER, INC.** offers career opportunities with the world's leading and most diversified commercial weather service. **You will have exciting opportunities to handle all types of weather forecasting for major business, media and government organizations.** These include on-air broadcasting for radio stations; creative presentation of weather graphics; preparation of television and newspaper forecasts; snow and ice warning services; worldwide forecasting for agriculture; specialized forecasts for the transportation industry, utilities, businesses and resorts; computer applications and many others. You will work with some of the nation's leading forecast meteorologists in our new state-of-the-art Global Forecast Center, interacting with a staff of 350 employees. **Our facility provides our 93 forecast meteorologists with tools and computer technology unavailable elsewhere.** Applicants need to be articulate and productive with outstanding forecasting and communication skills. Through progressive advancement, forecasters can become on-air meteorologists in major radio and television markets, or become involved in computer operations, graphic design, new product development or customer relations. **AccuWeather also has positions available on their computer staff for meteorologists with programming experience.** AccuWeather offers competitive salaries and an extensive benefits package including health insurance, 401K and profit sharing plans, life insurance and disability income. If you are an enthusiastic, hard working forecaster interested in employment in a dynamic growing company, which offers superior opportunity for advancement, send a detailed resume to:  
David H. Dombek, Director of Forecaster Hiring, AccuWeather, Inc., 385 Science Park Road, State College PA 16803; FAX: (814) 231-0621; e-mail: [resume@accuwx.com](mailto:resume@accuwx.com).

**WEATHERBANK, INC.** has immediate openings for meteorologists at various levels. Successful candidates will be responsible for forecasting a variety of weather parameters and issuing alert statements for industrial and commercial clientele across North America. Each applicant should have at least a B.S. in Meteorology or a related field. Pending degrees are reviewed on an individual basis. Professional forecasting experience, a strong and positive work ethic, and working knowledge of Microsoft® dos, Windows® 98/2000/NT, and Microsoft Excel® are desirable. Most openings are full-time, salaried positions and include WeatherBank's full compliment of benefits including: life, disability, dental and health insurance packages; Cafeteria 125 and 401K plans; paid sick leave, vacations and holidays. Send your resume via fax or E-mail to the attention of: Mr. Steven Root, CCM, President & CEO WeatherBank, Inc., 1015 Waterwood Pkwy., Suite J, Edmond OK 73034; Fax: (405) 341-0115; E-mail: [sroot@weatherbank.com](mailto:sroot@weatherbank.com)

**WEATHERDATA, INCORPORATED** If you love weather and enjoy interacting with clients that take your work seriously, this is the opportunity for you. WeatherData, Incorporated, located in the center of "Tornado Alley", is interested in hiring Forecast Assistants. This is an entry-level position utilizing your graphic skills while sharpening your forecasting skills. You will work with experienced meteorologists, attend training seminars and map discussions while learning the requirements of WeatherData's clients. A degree in Meteorology or the equivalent is required. Attention to detail, flexibility, and the ability to focus on customer needs while meeting crucial deadlines are essential. Weekend, night and/or early morning work may be required to support this 24-hour a day, 7-day per week operation. WeatherData offers excellent salaries and benefits including, 401(k), profit sharing and relocation. If you like to be challenged, and enjoy communicating weather information to end-users, don't let this opportunity pass you by. Send cover letter and resume to: WeatherData, Inc., Attn: Sharol Youngers, Manager of Business Administration, 245 N. Waco, Ste. 310, Wichita, KS 67202.

**Please refer to the last Newsletter and the NWA Web site at [www.nwas.org](http://www.nwas.org) for many other jobs announced earlier that we did not have room for in this issue.**

**NATIONAL WEATHER ASSOCIATION  
6704 WOLKE COURT  
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