

PRESIDENT'S MESSAGE

By Les Lemon

As I write this month's letter, we are entering the climatic period of peak severe convective storms, at least in the Great Plains of the United States. However, no matter when or where the violence of severe thunderstorms and tornadoes occur, teamwork between the media and the National Weather Service (NWS) is vitally important.

I am proud of the fact that nearly 40% of our NWA membership are "media" weather broadcasters. In addition, we have a sizable number who, like myself, are in other aspects of the private sector. It is, however, the weather broadcasters who occupy one of the critical links in the warning process. In effect, they are the conduits for communicating NWS warnings to a diverse community. It is true that a small but growing portion of the population knows of the NOAA Weather Radio program and actually owns and uses the radios. However, the vast majority of our nation's population obtains weather warnings from the commercial media. As such, the relationship between these public and private sectors is crucial. As I said with my first message, a goal of mine is to encourage the private and public sectors to work together as a team in getting out accurate and timely information concerning life and property threatening storms.

Unfortunately, this important link is often underdeveloped, or in some cases, completely severed. For far too long, a few media outlets have criticized or even derided the NWS for its warnings. In addition, some NWS Forecast Office personnel have failed to recognize the importance of the weather broadcasters in the warning process and were possibly viewed as the "front persons who take all the credit when things go right", or who "have the luxury of second guessing when things don't". Neither of these attitudes is of benefit to the public. The situation is simply this. ***Studies show that if people are given confirming information from many sources, they are likely to take the proper action. However, when given conflicting information, they generally will do nothing.*** Thus presenting a united front becomes crucial in the warning environment. ***Weather broadcasters must never denigrate a NWS warning. To do so is professionally irresponsible in the least and fatal at worst.***

This is not to say that this process is without its challenges. Sometimes I hear weather broadcasters say, "But the NWS occasionally makes serious mistakes. They have failed to issue a warning; even a tornado warning, when it was very obvious that one was needed! What are we supposed to do?" The best action to take at that point is based on action that should have been taken *long before* that point: **Communication!** If a strong line of communication and cooperation exists between the media and the NWS, this kind of thing can usually be resolved by a phone call to discuss the concern. If after this discussion, the weather broadcaster remains convinced about the storm's severity and feels the NWS forecaster is in error, then other tactics can be employed. Weather broadcasters can still urge their viewers to be vigilant, can alert them to changes that they are seeing and can suggest viewers take protective action. All this and more can be done *without* actually issuing a "warning".

Far better are the benefits of this alliance when it is fostered. When there is a shared understanding of conceptual models and radar applications and limitations, the weather broadcaster can help convey uncertainty or even heighten awareness to the public. In one instance I am aware of, a low probability tornado warning associated with a comma-head feature was correctly presented by the broadcaster to the listeners as a case where the "weather service is erring on the side of caution". And, rightly so, and that while there was a risk and, therefore, tornado precautions were advised, it was not a monster tornado in the making.

continued on page 2

>> IMPORTANT DATES <<

- 1 June 2001..... NWA Annual Meeting abstracts due (pg 5)
- 15 June 2001..... Meteorological Satellite Applications Award submissions due (see Feb. Newsletter)
- 18-22 June 2001..National Lightning Safety Awareness Week
- 30 June 2001..... NWA Annual Award nominations due (see Feb. Newsletter)
- 1 August 2001.....Sol Hirsch NWA Education Fund Grant applications due (see Feb. Newsletter)
- 13-19 Oct 2001...NWA 26th Annual Meeting in Spokane (pg 5)

Please see Meeting News on pages 5 and 6 for more dates of importance

I would like to encourage both the local NWS Offices and the media to establish such relationships. Several parts of the country do this already by having shared seminars on radar and storm-scale meteorology on a regular basis. Understanding the needs and processes of each player is also of benefit. While it's never too late to begin this process, so much more can be gained once the season begins if the groundwork has already been laid. The public doesn't want to have to decide who's right once the event unfolds. The public wants us all to come to a consensus and then present them our best belief and their best course of action. Investments made in presenting a unified front can actually lead to many saved lives. How much better our users would be served and what great benefits would be realized if we all strived to form such relationships.

Let's purpose to do just that!

LOCAL CHAPTER NEWS

The North Florida Weather Association met for its regular meeting on 29 March 2001, in Jacksonville, Florida. The day had progressed from storm warnings to tornadoes. By meeting time, most surrounding counties had been victims of several tornadoes, wind damage, hail, high winds and rain. New Business included an announcement that the Intergovernmental Hurricane Conference will be held in Orlando in late summer. The hurricane experiment portion will be staged in Jacksonville, under the guidance of the U.S. Weather Research Program.

Member Ed Rich gave an excellent presentation entitled "Meteorology in Third World Countries." He focused on Bangladesh. Rich has great expertise in assisting developing countries in weather data acquisition and the construction of weather stations. He has been on 28 trips and around the world many times. He shared many interesting anecdotes of his experiences in Bangladesh and shared slides of the trip and weather station installations.

Noting that for developing countries, like Bangladesh, the interest in weather is for survival, Rich talked about how the citizens must raise crops within the appropriate seasons or they will perish. At some points during their year, 40-percent or more of their country can be under water and tides of nine feet are common. Or the country can be stuck in a drought. People must be on the move in such a country in order to survive. Rich briefed that, Bangladesh has quite a drastic and deadly tropical cyclone season in our Spring, followed by summer monsoon rains, followed by a second cyclone season, which is usually the bad one. Bangladesh is sub tropical with a climate similar to Central and Northern Florida. It differs in that it is one of the poorest, most densely populated and routinely devastated countries in the world. Rich also noted that equipment is stolen regularly in Bangladesh and it is common practice to have guards accompany workers to the weather stations to protect them from thieves. Rich was part of the US team that attempted to install satellite reporting automated weather stations at a dozen major junctions of critical river areas. Over two years, every one of them was lost either due to the environment, local thieves or accidents! A five-thousand-pound buoy was anchored to a six-thousand-pound anchor, some fifty miles off shore in

the Bay of Bengal. Within two weeks, it completely stopped transmitting, disappeared and was never seen or reported again.

The next meeting of the Association will be held on 22 May. The program, "Hurricane Preparedness," will feature presentations from the National Weather Service, US Navy, and local broadcast meteorologists.

- Susan Shaw Keegan, Corresponding Secretary

The Lyndon State College Joint AMS/NWA Chapter met on 25 April 2001 and held elections for 2001 – 2002 officers. Jason Furtado was elected President, Edward Argenta — Vice President, Cegeon Chan — Secretary, Matthew Carrier — Treasurer, and Mark Taylor was elected Public Relations Officer. Outgoing President Dina Freedman and faculty advisor Pamela Grube-Hogan (*congratulations on her marriage*) officiated.

Jason Furtado announced that planning is underway for the 27th Annual Northeastern Storm Conference to be held in Saratoga Springs, New York, 8-10 March 2002.

- Tracy McCormick, Secretary

The Heart of the Midlands NWA Chapter held a joint meeting with the Omaha-Offutt AMS Chapter on 15 March at Valentino's Pizza in Omaha, NE. Brian Smith, the Warning Coordination Meteorologist from the NWS Forecast Office in Valley, NE, presented an abbreviated version of the spotter training course entitled, "2001: A Spotter Odyssey." He also indicated that increased spotter training with photographs and video clips have improved spotter quality and, in turn, helped his office increase lead times, decrease the false alarm rate, and the probability of detection has gone up.

- Ralph Hanson, Treasurer

Central Gulf Coast NWA Chapter met on 24 April in the Mitchell Center Basketball Coliseum on the campus of the University of South Alabama (USA). Uniquely, the Mitchell Center contains both the USA Meteorology Department and the USA Coastal Weather Research Center. President Douglas Butts called the meeting to order with the adoption of the old minutes. New business included: 1) The planning of our Summer 2001 Meeting, 2) A challenge to the Local Chapter Executive Committee to find ways to increase the membership by reaching out to local citizens in the community who have general weather interests. Keith Williams who currently serves as the Hydrology Focal Point at the NWS Office in Mobile, AL was guest speaker. He gave a presentation on the extreme inland river flooding that occurred over portions of southwest Alabama and northwest Florida in association with Hurricane Georges of 1998. Some of the historic forecast points located along the rivers experienced 100-200 year return period floods, thus shattering past record high water marks. He also provided an excellent set of documentary photos of these high water marks. Before closing, Mr. Williams shared a film that depicted the capabilities of the National Weather Service's Advanced Hydrologic Prediction System (AHPS). The 24 April meeting is the last meeting of the academic year. Meteorology Students at the University of South Alabama account for a significant fraction of our membership and we are very, very proud and supportive of this fact. We salute the 2001 graduates and hope that you find a local NWA chapter in your new place of employment. Good Luck!

- Jeffrey M. Medlin, Corresponding Secretary

WEATHER ANALYSIS and FORECASTING COMMITTEE REPORT

The Weather Analysis and Forecasting (WAF) Committee has been busy with several projects. First, more articles have been published in the NWA's *Electronic Journal of Operational Meteorology* on www.nwas.org. They include:

A Comprehensive Heavy Precipitation Climatology for Middle Tennessee, by T. W. Troutman, M. A. Rose, L. M. Trapasso, and S. A. Foster

Model Comparison for 60 Hours to 6 Days, by J.A. Larue

Determining WSR-88D Precipitation Algorithm Performance Using the Stage III Precipitation Processing System, by G. J. Story

A Quick Reference Guide for Operational Forecasting Papers, by J.D. Gordon

Other papers are currently in the review process. The *e-journal* is now accepting submissions for both fully peer-reviewed papers as well as for a section entitled, "Forecasting Tools and Techniques." This section will be similar to "Technical Notes" in the *National Weather Digest*, offering a forum for topics not yet fully investigated, verified or perfected, but which hold promise for the future or for more widespread applications. These papers will be reviewed by one of the editors or a member of the WAF committee to ensure a sound concept and appropriate text and figures. We are excited about the new opportunities that Web publishing offers, including more rapid publication, publication of color and animated figures and the capability for rapid updates/revisions. If you have a paper that you would be interested in sharing with the operational community through the NWA *Electronic Journal of Operational Meteorology*, please see the NWA Web site (www.nwas.org) for the full information on how to submit a paper for review.

The WAF committee is also working hard on several meetings and conferences. Committee member Bill Roeder is organizing a **Downburst Prediction Symposium** for the NWA Annual Meeting in Spokane in October. More information on this meeting can be found on page 5. We recommend any interested party to submit an abstract for this important session by 1 June. The committee is cosponsoring the **Special Conference on Weather Analysis and Forecasting Issues in the Central United States**, which will be held at the University of Missouri in Columbia from 30 November through 2 December 2001. Abstracts for this conference are due 31 July. More information is available on page 5. In addition, Alan Gerard and Pat Welsh of the WAF committee are participating in planning for the **Interactive Symposium on the Advanced Weather Interactive Processing System (AWIPS)**. This conference will be held as part of the AMS Annual

Meeting in Orlando, FL, 13-18 January 2002. The NWA is a cosponsoring organization for this event. See page 5 for more information.

The WAF committee would also like to remind everyone of National Lightning Safety Awareness Week, which is coming up 18-22 June. Bill Roeder of the WAF committee has submitted more information below.

- Alan Gerard, Committee Chair

LIGHTNING SAFETY

The first National Lightning Safety Awareness Week will be 18-22 June 2001, sponsored by the National Weather Service. This is a joint project between the NWS, FEMA, American Red Cross, Institute for Business and Home Safety, National Lightning Safety Institute, The Weather Channel, and Global Atmospheric, Inc. This is a great opportunity for all NWA members to join with NWS Forecast Offices and media outlets to cooperate on educating the public on this severe weather hazard. Lightning is the #2 storm killer in the U.S., killing more than tornadoes and hurricanes combined. Lightning also inflicts life-long severe injuries on ten times more people than it kills. The vast majority of these casualties are easily prevented if people were more aware of the threat and learned how to protect themselves. **Public education is the key!** Each day of National Lightning Safety Awareness Week will have a separate theme: *Monday - Overview, Tuesday - Lightning Science, Wednesday - Outdoor Safety, Thursday - Indoor Safety, and Friday - Lightning Medicine*. A new Web site for National Lightning Safety Awareness Week is now open at: www.lightningsafety.noaa.gov and listed on the NWA Web site. More information on lightning safety, including downloadable materials for training, is available at:

www.patrick.af.mil/45og/45ws/LightningSafety/index.htm

- William Roeder

NASA LIGHTNING RESEARCH

NASA will use an Uninhabited Aerial Vehicle (UAV) for a research mission to better understand how lightning forms and dissipates during thunderstorms. The remotely piloted, high-flying UAV will fly above and around the dangerous disturbances, gauging the various elements that unleash the fury of storms.

Part of NASA's UAV-based science demonstration program, these flights will show the ability of this type of aircraft to carry Earth-viewing scientific payloads into environments where an onboard pilot would be exposed to life-threatening hazards. This capability will benefit both U.S. scientific and commercial objectives well into the new millennium.

The mission will utilize the ALTUS UAV, built by General Atomics, San Diego, CA, taking advantage of its remotely piloted capability, along with its high altitude capability (up to 55,000 feet) and slow speed. ✕

NCEP NOTES

Researchers from the University of Alabama at Huntsville, with colleagues from NASA's Goddard Space Flight Center, Greenbelt, MD, will chase down thunderstorms in Florida to better understand the relationship between storms and lightning. When a developing storm is spotted at NASA's Kennedy Space Center in Florida, researchers will send the ALTUS UAV above and around the storm, while the remote pilots remain safely on the ground.

"This mission combines the exciting use of UAV technology with sound science to unravel the mystery behind lightning and its relationship to violent storms -- information that will help those who predict these events as well as the public and infrastructure affected," said Dr. Ghassem Asrar, Associate Administrator for Earth Sciences at NASA Headquarters, Washington, DC.

Using precision instruments aboard the aircraft, researchers will take measurements to determine lightning potential of the storms in the hopes of better understanding how different physical characteristics in the atmosphere can contribute to development of lightning. These data will increase understanding of lightning and storms, while providing federal, state and local governments new disaster-management information for use in the areas of severe storms, floods and wild fires.

The mission is part of NASA's Earth Science Enterprise, a long-term research effort aimed at understanding how human-induced and natural changes affect our global environment, while providing practical societal benefits to America today. It provides the sound science needed by policy and economic decision-makers to assure responsible stewardship of the global environment.

- NASA Public Affairs

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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.

GOES-M LAUNCH is scheduled for **12 July**. It will carry a higher resolution water vapor imager (4 km) and a new 13.3 micron (8 km) channel replacing the 12.0 micron (4 km) split window channel. It will be stored in orbit as GOES-12 until needed. The science testing schedules and other details can be found at Web site: www.cira.colostate.edu/ramm/goesm/test_schedules.htm

NCEP's numerical weather prediction model backup system can trace its origins to 27 September 1999, when a simple device designed to regulate electric current overheated. The rheostat smoldered for a while and then the smoke and flames appeared. The result was a complete and permanent shutdown of NCEP's largest and most powerful computer at the time, the Cray C-90. At the time it was procured in 1994, the C-90 was state-of-the-art. Even in the fall of 1999, nearing the end of its lifetime, it was responsible for the bulk of the number crunching for NCEP's sophisticated prediction models. When NCEP staff received the first notification of the fire damage that September afternoon, they set in motion what was to become the most severe test of NCEP's ability to produce and deliver its model forecasts to users. At that time, NCEP's backup policy was to run reduced versions of its operational models on its supplementary computers (two smaller and slower Cray J-916's). That was still insufficient to produce a full suite of products. This had been acceptable because all the problems that had been experienced up to that point had been resolved quickly, so that at most one cycle was disrupted. The problems that developed due to this fire would result in the first long-term use of this system and the realization that a more robust backup system was needed. Immediately, NCEP staff reached out to other organizations and began laying the groundwork for NCEP's current and much more robust NWP model backup system. The backup scenario put in place for this emergency lasted until November 1999, when NCEP's new IBM-SP was installed at the Bowie Computer Center in Bowie, MD.

Currently, NCEP's backup configuration relies on output from partners to reproduce the operational suite as closely as possible. Output from the following locations is received continuously in real time at the NWS Office of Operational Systems where it can be distributed if necessary with the flip of a (software) switch. The backup system is detailed below and it is fully tested each quarter.

RUC2 output is backed up by RUC2 runs at the NOAA Office of Atmospheric Research's Forecast System Laboratory in Boulder, CO.

Eta output is backed up by MM5 model runs at the Air Force Weather Agency at Offutt AFB in Omaha, NE.

Aviation model output is backed up by the Navy's Fleet Numerical Meteorology and Oceanography Center's (FNMOC) NOGAPS model, run in Monterey, CA.

Wave Watch III global ocean wave model output is backed up currently by the FNMOC Wave Model (WAM). The Navy has plans to implement the Wave Watch III model this year at their facility. It will then replace the WAM as backup for NCEP's runs.

GFDL Hurricane model runs are backed up by FNMOC's GFDN Hurricane model runs.

- Lauren Morone, NWS/NCEP

MEETING NEWS

• **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. 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 symposium 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 Kahanek of Dallas, TX, E-mail: NatWeaAsoc@aol.com

ABSTRACT SUBMISSION: The deadline for submission of abstracts is 1 June 2001. ABSTRACTS can be sent online via the NWA Web site: 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. Abstracts can also 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. If you are unable to submit your abstract electronically please call 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 in the June Newsletter and on the NWA Web site (www.nwas.org). The meeting agenda will be posted on the NWA 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.

• **The Fifth Annual High Plains Conference** sponsored by the High Plains AMS and NWA Local Chapters will be held **3-5 October 2001** in North Platte, Nebraska. A preliminary program, and registration, hotel and general information will be posted at Web site: www.crh.noaa.gov/gld/hpams/main.htm. This year's theme focuses on "The Challenges of Weather Forecasting on the High Plains". Any topic is applicable, including winter and severe weather forecasting, and both research and operational aspects of forecasting High Plains weather are welcome. Sessions will begin with an invited speaker and the remaining speakers will be given 20 minutes including questions. The tone of this conference is less formal than at national conferences, and part of the purpose for this conference is to provide a forum and/or training platform for first time presenters, and for work that has not yet had a chance to go through the academic peer review process. Titles and one-page abstracts should include each author's name and affiliation, the corresponding author's complete address, telephone/fax number, and e-mail address. **Abstracts must be submitted no later than 27 July 2001 to: Fifth High Plains Conference Committee**, National Weather Service, 5250 E. Lee Bird Drive, North Platte, NE 69101; e-mail: john.stoppkotte@noaa.gov; Tel: (308) 532-0921; Fax: (308) 532-9557. In addition, this year the High Plains Chapters will hold a **Student Paper Competition** for the best student paper describing research on a topic related to Plains weather. For further information, see the Web Page or contact the Conference Committee.

• **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

• **Weather Analysis and Forecasting Issues in the Central United States** will be held at the University of Missouri-Columbia, Columbia, MO, **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.snr.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 cosponsoring 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.

MEMBER NEWS

Four members were recipients of *NOAA Administrator's Awards* in April 2001:

C. Larry Peabody...for leading a nationwide project to have NWS phone numbers, Internet addresses, and local NOAA Weather Radio Frequencies placed in the government listings of telephone directories.

Bart C. Hagemeyer...for leadership in scientific research and collaboration resulting in innovative techniques for improved forecasting of hazardous weather in Florida.

Solomon G. Summer...for leadership of the NWS Eastern Region's Hydrologic services program before, during, and after the NWS Modernization.

Armando L. Garza...for development and production of the dual language video "Flood Warning Systems – Saving Lives and Property" which strengthened the NWS partnership with the media and local County Flood Control Managers, and enhanced outreach to the citizens of the U.S. and Mexico.

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 for more complete details on the following jobs, short notice listings and job links.)

THE NATIONAL WEATHER STATION, INC., a commercial weather service has immediate openings available for meteorologists with expertise in radio broadcasting. Excellent voice/delivery of weather information is necessary along with excellent forecasting skills. Please rush your demo audio tape and resume to: The National Weather Station, Attn: Dan Ventola, PO Box 1063, Lodi, NJ 07644. Local residents of the NYC/NJ area preferred but will consider all resumes. See our Web site for more information on our company at www.nationalweatherstation.com

The National Weather Station, Inc. is also hiring full-time and part-time meteorologists. We are looking for talented, enthusiastic and dedicated professionals with excellent forecasting skills. You should have a degree or the equivalent in meteorology. You should also have experience in Web site development and also know how to use and interpret various forecasting models and radar and satellite imagery. Hours are flexible but you must be available on a rotating schedule to support our 24-hour-per-day operation. Experience in radio broadcasting is also a plus, but not mandatory. Local residents of the NYC/NJ area preferred but will consider all resumes. Please mail resume to: The National Weather Station, Attn: Dan Ventola, PO Box 1063, Lodi, NJ 07644

TRW, a technology industry leader, is seeking IT professionals to work on several Information Technology contracts to supply IT products and services in Omaha, Nebraska. To meet these challenges, TRW is introducing new, high-tech and innovative solutions, and is seeking dedicated, talented professionals. We are interested in talking to individuals who have experience and skills in the following software engineering areas: Web Development & Management, C/C++, PERL, Fortran, CORBA, Cold Fusion, Oracle, Windows/NT or Unix, Java & HTML Development, SQL, Configuration Management, Quality Assurance & Task Management, Hardware Prototyping, Systems/Software Engineering, Systems Administration, Logistics Support, Networking, Data/Documentation Management, Database Administration & Development, Web Site Performance Monitoring, Tracking & Tuning, Security & Accreditation, Software Testing, Meteorological Analysis & Modeling. A BS is preferred but not required; will trade 2 years experience for a BS degree. 3-8 years experience is required. Experience in Satellite Data Handling System (SDHS), Global Theater Weather Analysis and Prediction System (GTWAPS), general meteorology or weather forecasting is a plus. Candidates must be able to obtain Top Secret security clearance. Competitive salaries, excellent benefits, growth and challenge are just a few reasons why you should consider joining our team. If an exciting position with TRW is of interest to you, please submit your resume and salary requirements to: TRW Systems & Information Technology, ATTN: Human Resources Reference: SMS/BL/4-18-01, 1408 Fort Crook Road, South Bellevue, NE 68005; FAX: (402) 293-6048, or e-mail to: Stephen.Flamm@trw.com TRW is committed to equal opportunity. Diversity works @ TRW.

SGT Inc. is looking for 10 weather observers to fill positions for anticipated job openings in Florida. Applicants must be graduates of a military weather course, such as DoD Weather Specialist school, and have a minimum of 2 years of manual observing experience. Experience with AWDS/AMIS preferred, but not required. Rawinsonde training is a strong plus. All resumes must include details of observing experience and 2 personal references. Pay and allowances are based upon established Department of Labor regulations for various regions and counties. SGT Inc., provides a health benefits package, 401k opportunities, and relocation allowance, when applicable. The anticipated openings are in the July to August 2001 timeframe. People that have resumes on file with SGT Inc., should provide updates to reflect current status and availability. Send resumes via regular mail or e-mail to: SGT Inc. Attn: Rocco Calaci, 923 Holbrook Circle, Fort Walton Beach, FL 32547; e-mail: rjsm99@home.com

UNIVERSITY OF NORTHERN IOWA Department of Earth Science invites applications for a full-time, non-tenure-track appointment in meteorology for fall semester 2001 through spring semester 2002. The beginning date of the appointment is 27 August 2001. The successful candidate will teach 3-4 sections of the Department's very popular introductory course Elements of Weather, and one section of Elements of Weather Lab. A Master's degree in atmospheric science (or a closely related area) and previous successful teaching experience is required. A Ph.D. in atmospheric science or a related discipline is preferred. There is a possibility of renewal for fall semester 2002 and spring semester 2003. Salary is commensurate with qualifications and experience. To apply, send a letter of application, current resume, and the names, phone numbers, and e-mail addresses of three references to: Dr. James C. Walters Department of Earth Science, University of Northern Iowa, Cedar Falls, Iowa 50614-0335; Phone: (319) 273-2707; FAX: (319) 273-7124; e-mail: james.walters@uni.edu To receive full consideration, **applications should be received by 4 June 2001**. The University of Northern Iowa is a comprehensive public university with 13,000 students. The Department encourages applications from minority persons, women, persons with disabilities, and Vietnam era veterans. The University is an equal opportunity employer with a comprehensive plan for affirmative action. Further information is on Web site: www.earth.uni.edu.

DTN WEATHER SERVICES has immediate job openings for Operational Forecasters working in our Meteorological Operations Division both in our Burnsville, MN and Lexington, MA offices. Applicants should have a BS in Meteorology or Atmospheric Science and possess keen synoptic meteorology skills enabling the successful candidate to make time-critical, risk assessment judgments. Excellent computer skills are a plus. The Meteorological Operations Divisions are state-of-the-art (24/7) forecast operations located several miles south of Minneapolis, MN or several miles outside of Boston, MA. Benefits include health and dental coverage, paid time-off, flexible spending account, and an excellent 401(k) savings plan. If you are interested in joining one of the largest and fastest growing weather and climate forecast teams serving media, aviation, energy, and agriculture industries please send a resume to: DTN Weather Services Human Resources, 11400 Rupp Drive, Burnsville, MN 55337-1279; Fax: (952) 882-4500; e-mail: employee.recruiting@dtn.com

RELIANT ENERGY is an international energy services company based in Houston, TX. With more than 90,000 megawatts of capacity, the company is one of the largest unregulated generation owners in the U.S. It is also one of the country's leading gas and power traders and marketers. We have an immediate opening for a meteorologist to join our successful and growing team. The ideal candidate will possess a BS in Meteorology, 3 to 5 years of forecasting experience, strong communication skills, the ability to work in a team environment, AND a zest for weather! An in-depth knowledge of Texas weather and state-of-the-art meteorological models would be a strong plus. This is a full-time position, offering a highly competitive salary and benefits package. Please send cover letter and resume to: Mike Pass, Senior Meteorologist, Reliant Energy, PO Box 4567, Houston, TX 77210-4567 or by e-mail to: mpass@reliant.com

LITTON TASC a subsidiary of Northrop Grumman, is one of the world's premier providers of high-end information technology solutions. Founded in 1966, TASC has more than 3,000 employees in over 25 offices throughout the United States and in the United Kingdom. From design and development to implementation and support, TASC offers a wide range of professional services and technology products to meet the needs of large organizations. We serve clients in the US intelligence community, the military, federal and state government, and commercial sector. Our core technology strengths are in signals processing, information architectures, imagery and geospatial systems, visual computing, information assurance, C4ISR, lifecycle engineering, enterprise systems, and analytic sciences. We currently have an opening for a Senior Meteorologist/Scientific Programmer to develop global data assimilation and climate models. The successful applicant will work with state-of-the-science data assimilation models developed by NASA, NCEP and other organizations and will serve as lead on-site (at NASA, Goddard) scientist. Your responsibilities will include providing leadership for on-site scientists and scientific programmers for this project. As well as, assist with development of Hybrid Data Assimilation model using GEOS-DAS and NCEP's SSI analysis model and development of an Earth System Modeling Framework to facilitate integrating community climate modeling codes. The work location is at NASA Goddard located in Greenbelt, Maryland. Position requires strong meteorological expertise in NWP model application and data assimilation, strong FORTRAN skills and expertise in software development processes, excellent oral and written communications skills. Experience in High Performance Computing in mainframe environments and C programming is a strong plus. Candidate should have a Masters or Ph.D. degree in the environmental sciences with a minimum of 3 years experience. Litton TASC offers competitive benefit package including medical, dental, profit sharing, tuition reimbursement and more. See Web site: www.tasc.com. Interested candidates should forward resumes via e-mail to: resumes@tasc.com.

HESS ENERGY COMPANY has a position open for an enterprising scientist to build and maintain a numerical weather forecasting tool. Job requires strong analytical, programming and data assimilation skills. The successful applicant will develop operational software, and evaluate model output. Knowledge of NOAAPORT and NCEP weather products is essential. Perl and Matlab or IDL programming skills are necessary as well. Experience with neural networks and genetic algorithms is preferred. Job is located in New York City with excellent salary and benefits. Send CV to Scott Putnam at e-mail: sputnam@hess.com

MIDWEST WEATHER, INC. wants to fill the position of Weather Services Supervisor/Weather Observer in Alpena, MI. The qualified applicant will have a minimum of 2 years management and supervisory experience in DOD weather station operations as their primary job. Experience with ASOS is preferred, but not required. Regular hours are 8-4, Monday through Friday. Pay is in accordance with the applicable Department of Labor Wage Determination. Send Resumes detailing previous DOD experience via USPS, fax, or e-mail to: Midwest Weather, Inc., ATTN: Eric Livingston, PO Box 1418, Saint Peters, MO 63376; Fax: (636) 928-0055; e-mail: mwi@il.net.

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.

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.

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

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: Steve Easley, V. P. of Business Development, 245 N. Waco, Suite 310, Wichita, KS 67202.

Please refer to the last Newsletter and the NWA Web site at 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
MONTGOMERY AL 36116-2134**