

Your Magazine for Air Force Weather

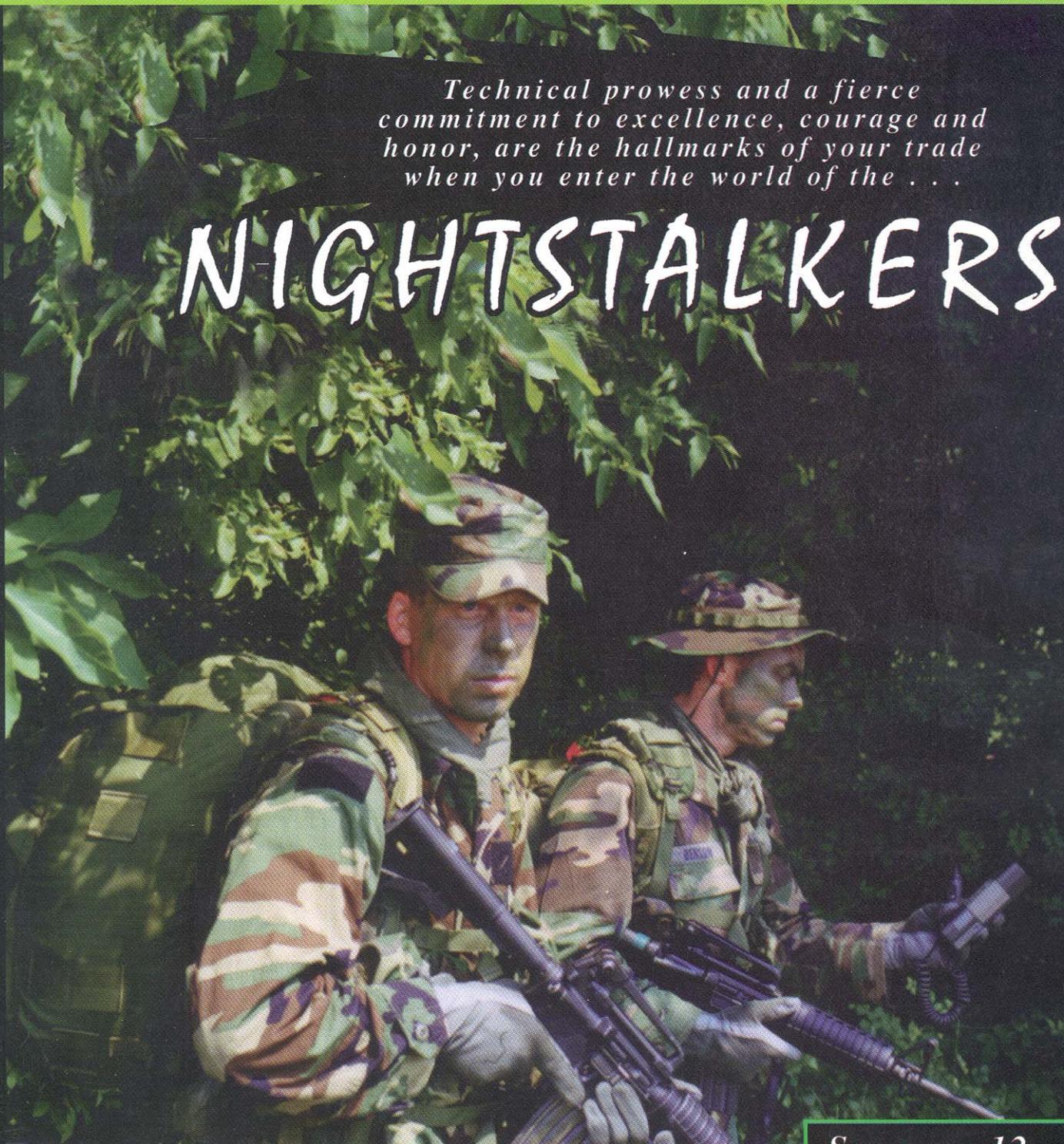
OBSERVER

April 1998

Vol. 45, No. 1

*Technical prowess and a fierce
commitment to excellence, courage and
honor, are the hallmarks of your trade
when you enter the world of the . . .*

NIGHTSTALKERS



See page 12 . . .

PERSPECTIVE FROM THE TOP – Air Force Director of Weather Brig. Gen. Fred Lewis talks about the celebration of the first tornado forecast at Tinker AFB, and the challenges that await weather personnel in the future...**PAGES 3-4.**

ENLISTED PERSPECTIVE FROM THE TOP – Chief of Enlisted Matters discusses the new weather Vision, and the technologies that will be used to achieve it...**PAGE 5.**

COMMAND LINE – AFSPC Chief of Force Enhancement, Col. Gerard Wittman, shares his philosophies on dealing with change, and how they can be applied to AFW's reengineering...**PAGE 6.**

ORDER OF THE SWORD – In a ceremony steeped in tradition and pride, Air Force Weather Agency Commander Col. John Hayes receives the highest honor the enlisted force can bestow...**PAGE 7.**

MAIS – Military Aircrew Information Service: "Helping aircrews navigate the MAIS of weather information" ...**PAGES 8-9.**

SDHSU – Cutting-edge satellite data handling system increases weather forecasters' abilities...**PAGE 10.**

ANATOMY OF A SPEC-OPS UNIT – Day-to-day life in a Special Operations Unit...**PAGE 11.**

THE WORLD OF THE NIGHTSTALKERS – One weatherman's account of six weeks of training with an elite Special Operations Unit...**PAGES 12-13.**

A TALE OF TWO TORNADOES – Fifty years ago, two Air Force weathermen made history by predicting and issuing the first-ever tornado warning at Tinker Air Force Base...**PAGES 14-17.**

MONUMENT – Tinker Air Force Base unveils a monument in honor of the 50th anniversary of the first tornado forecast...**PAGE 18.**

WEATHER NEWS – Weather news stories from around the globe...**PAGES 19-20.**

THE BEST OF CLIMES-THE WORST OF CLIMES – Exciting and humorous weather stories by the people who "lived" them...**PAGE 21.**

SALUTES – Air Force Weather's 1997 Best of the Best, and kudos to members around the world ...**PAGES 22-23.**

Editor's Note

The staff of the Observer Magazine has changed the dateline on this publication to bring it to a more current status. We apologize for any confusion caused by this decision. Please send any comments regarding the publication date to Ms. Paige D. Rowland, 106 Peacekeeper Dr., Suite 2N3, Offutt AFB, Neb., 68113-4039 or send an e-mail message to: "rowlandp@afwa.af.mil."

SPOTLIGHT

The special forces are generally regarded as shadowy groups of highly trained and elusive soldiers who operate autonomously, relying solely on their own knowledge and ingenuity.

In fact, many special forces units rely quite heavily on the knowledge and expertise of other highly trained professionals. In the case of weather, one group –NIGHTSTALKERS—is charged with the task of accompanying special forces units around the globe, providing them precise and timely weather data, which is vital to achieving mission accomplishment.

This month's issue focuses on the NIGHTSTALKERS: the unit, its training regimen and history, as well as the demands you will face should you decide to join them.



OBSERVER

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This funded Air Force Weather magazine is an authorized publication for members of the U.S. military services. Contents of the OBSERVER are not necessarily the official view of, or endorsed by, the U.S. Government, the Department of Defense or the Department of the Air Force. Editorial content is edited, prepared and provided by the public affairs office of Headquarters Air Force Weather Agency, Scott AFB, Ill. All photographs are Air Force photographs unless otherwise indicated. All written material and photos to be considered for publication must arrive at HQ AFWA/PA by the first week of the month prior to the month being published.

Photos must be mailed to:

HQ AFWA/PA
102 W. Losey St., Rm. 105
Scott AFB, IL 62225-5206

Call (618) 256-3350 ext. 334, or DSN 576-3350, ext 300, for more information about this publication. Send faxes to: DSN 576-5401 or CMCL (618) 256-5401. Electronic mail should be addressed to:

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The OBSERVER is printed by Western Press Inc., 79 Progress Parkway, Maryland Heights, Mo. 63043. Mailing list inquiries should be directed to (314) 878-5700, faxed to (314) 878-5796 or sent by E-Mail to "western@ix.netcom.com".



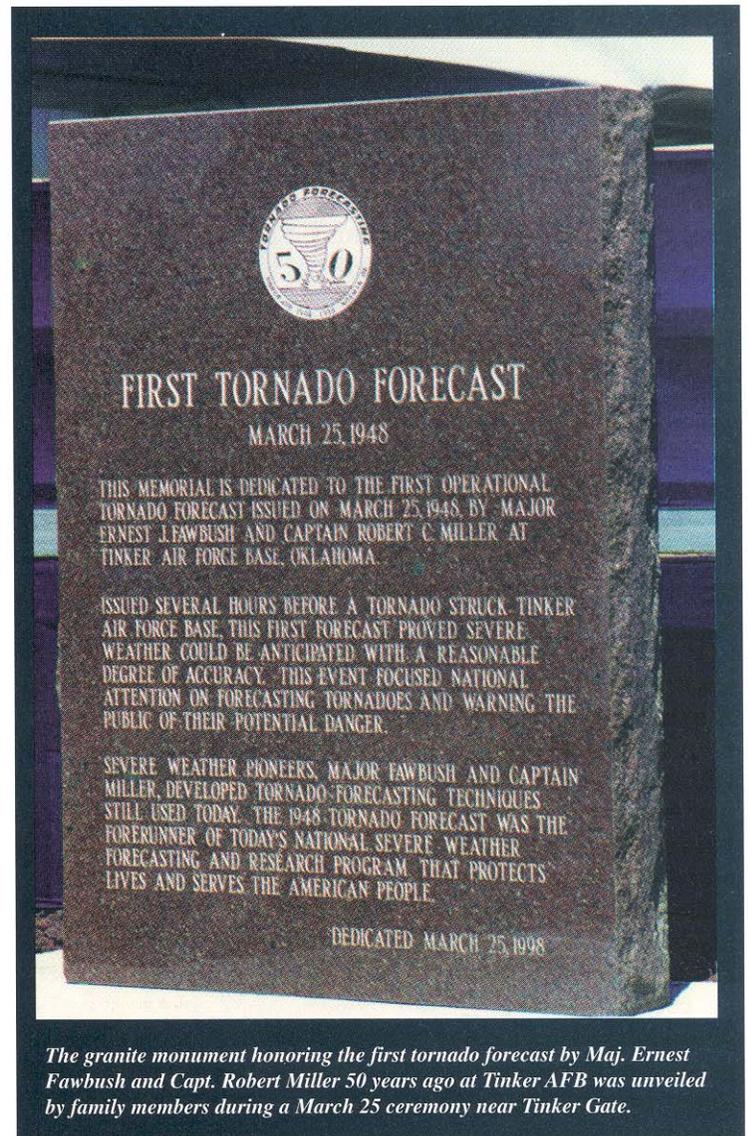
AIR FORCE WEATHER ISSUING A CHALLENGE

by Brig. Gen. Fred P. Lewis, Air Force Director of Weather

Tinker Air Force Base, Oklahoma, March 25, 1998. On a warm, clear, breezy spring morning at a sprawling central Oklahoma base, a granite monument was dedicated honoring the 50th anniversary of the first operational tornado forecast. This commemorative marker was placed next to a retired WB-29 near Tinker's main gate to honor the two Air Force weather officers who made history in 1948 by issuing the first operational tornado forecast. Chief Ramirez and I were able to attend this special event and we would like to recount some of the details, then issue a challenge to all of us in Air Force Weather.

It was March 25, 1948, when Maj. Ernest J. Fawbush and Capt. Robert C. Miller made their marks in the weather history books by issuing an accurate tornado forecast over three hours in advance. The tornado that occurred that day caused several million dollars in damage to Tinker's aircraft and buildings, yet no lives were lost due to the timely warning issued by Maj. E.J. Fawbush and Capt. Bob Miller and the precautions taken at Tinker based on their forecast. The true significance of this forecast was that, up until that time, weather forecasters had never dared to predict a tornado. Further, U.S. Weather Bureau (now National Weather Service) officials even felt that it would have been dangerous to let the public know of potential tornadic storms for fear of causing a panic. Just five days earlier, on March 20, 1948, a tornado ripped through Tinker causing severe damage to the base and its aircraft. As a result of that disaster (for which no forecast had been made), the commander at Tinker Field, Maj. Gen. Fred S. Borum, had charged the weather officers with determining a method for forecasting tornadoes. Maj. Fawbush and Capt. Miller spent those five days studying weather data from past severe weather occurrences trying to find a method of predicting tornadic thunderstorms. Gen. Borum's leadership served as a catalyst for understanding the conditions necessary for tornadic development and the work needed to translate this information into an operational forecast. These efforts paid big dividends with their successful tornado prediction on March 25, 1948.

The events, to celebrate this milestone in weather history, began on the 23rd of March 1998, in nearby Norman, Oklahoma, at an open house of the National Severe Storms Laboratory, Storm Prediction Center, NEXRAD Operational Support Facility, and Oklahoma



The granite monument honoring the first tornado forecast by Maj. Ernest Fawbush and Capt. Robert Miller 50 years ago at Tinker AFB was unveiled by family members during a March 25 ceremony near Tinker Gate.

City National Weather Service Forecast Office. Over 2,000 students and families from the area toured the facilities located at the University Research Park. On the 24th, the University of Oklahoma hosted a scientific symposium on tornado forecasting and research followed by a dinner at the Memorial Student Union.

The outdoor ceremony on the 25th was attended by about 150 people, including members of the Fawbush and Miller families and officials from the Navy, Air Force, National Oceanic and Atmospheric Administration, National Weather Service, University of Oklahoma, and the State of Oklahoma. A U.S. Army band from Fort Sill played patriotic music as the crowd assembled for this historic occasion.

I was asked to be the keynote speaker at the luncheon that followed the ceremony and recounted the events of the historic day, emphasizing the importance of the relationship between weather forecaster and operator. Maj. Fawbush and Capt. Miller worked closely with Maj. Gen. Borum during the entire day on the 25th, keeping him advised of the developing weather situation. The interchange between the weather officers and the general leading up to the actual tornado forecast being issued was critical in ensuring the base and its resources were protected. In fact, Maj. Gen. Borum –when briefed by Maj. Fawbush and Capt. Miller at 1430, on the afternoon of the 25th, that there could be a tornado at Tinker Field at 1800 that evening– asked, “Are you going to issue a tornado forecast?” When Maj. Fawbush said, “Sir, no one has ever issued an operational tornado forecast,” Maj. Gen. Borum replied, “You are about to set a precedent.” And with that classic exchange between operator and weather forecaster, history was made. This interchange and the events of the day emphasize how important it is for weather operators to be personally involved and committed to doing their very best and how they must be totally integrated into the missions and the operations they support. (Sounds like Air Force Weather reengineering, doesn't it?) In closing my speech, I challenged all weather people at the luncheon to have that same passion for meteorology and the desire to protect people and resources that Maj. Fawbush and Capt. Miller exemplified 50 years ago.

Now for my challenge to every person in Air Force Weather: Take the lesson of Fawbush and Miller to heart and don't be satisfied with 6, 10, or even 20 minutes of leadtime for a tornado warning or one hour for any other severe weather warning. Learn as much as you can about severe weather forecasting, using all the available tools –from large and fine-scale weather models to NEXRAD to other analysis and forecasting techniques –to make the best forecast you can. Then have the courage and conviction to issue your severe weather forecast (warning) with as much leadtime as possible. For everyone who has worked during stressful tornado/severe weather conditions, you know that if you wait until you're absolutely sure there's going to be severe

weather, it's often too late. “When in doubt, put it out” is a phrase that I have personally used for years when it comes to severe weather warnings.

Now, let me commend some of our weather people at Columbus AFB, Mississippi, who recently had 34 minutes (that's right, 34 minutes!) leadtime on a confirmed funnel cloud over the base and a tornado that touched down within a mile of the base. They went with the NEXRAD signature and got their warning out in time to help save lives and protect resources –a job well done! My challenge to each of you is to be like those folks at Columbus and Maj. Fawbush and Capt. Miller. Do your absolute best and help your customers by giving them the maximum amount of leadtime possible for any severe weather. This is a tough challenge and one that you may not be able to meet every time, but it is a fair challenge that each of us is up to. Remember that Maj. Fawbush and Capt. Miller had over three hours leadtime on the first operational tornado forecast and, by doing so, set the bar very high. Now it's up to each of us to live up to their example by doing our absolute best! I have the highest confidence that all of you can meet this challenge.

In closing, I would like to commend the people of Detachment 7, Air Force Weather Agency at Tinker AFB, for doing such an absolutely outstanding job hosting the events at Tinker. Special recognition goes to Staff Sgt. Cyndi Vice, who was presented an Air Force Achievement Medal for her work as the project officer. GREAT JOB DET 7!!!

AIR FORCE WEATHER TODAY

The “AIR FORCE WEATHER TODAY” homepage is now available at <http://afwtoday.abacusokc.com>. The newly-unveiled homepage provides information regarding reengineering Air Force Weather capabilities, products, and services.

The homepage includes links to all components that comprise the Air Force Weather functional area including the Air Force Weather Agency, Air Force major commands, and U.S. Army weather organizations. The site will eventually provide virtual tours and demonstrations of new weather technologies and capabilities as well as updates from fourteen teams supporting reengineering implementation efforts.

Upon entry of valid identification and password, Internet users gain access to a wide range of information, including the latest Air Force Weather capabilities. Also, plans for future services will be available, along with schedules and updates of the extensive agenda of reengineering actions.

Consisting of over 4,000 military (active, guard, and reserves) and civilian members, Air Force Weather specialists provide terrestrial and space weather information products and services for a wide range of national interests, including Air Force and Army operations around the globe. In August 1996, Air Force Weather was the first Air Force functional area to begin extensive reengineering efforts.

Comments on the new homepage are welcome. Please send ideas, suggestions or questions to the webmaster at the address listed above.

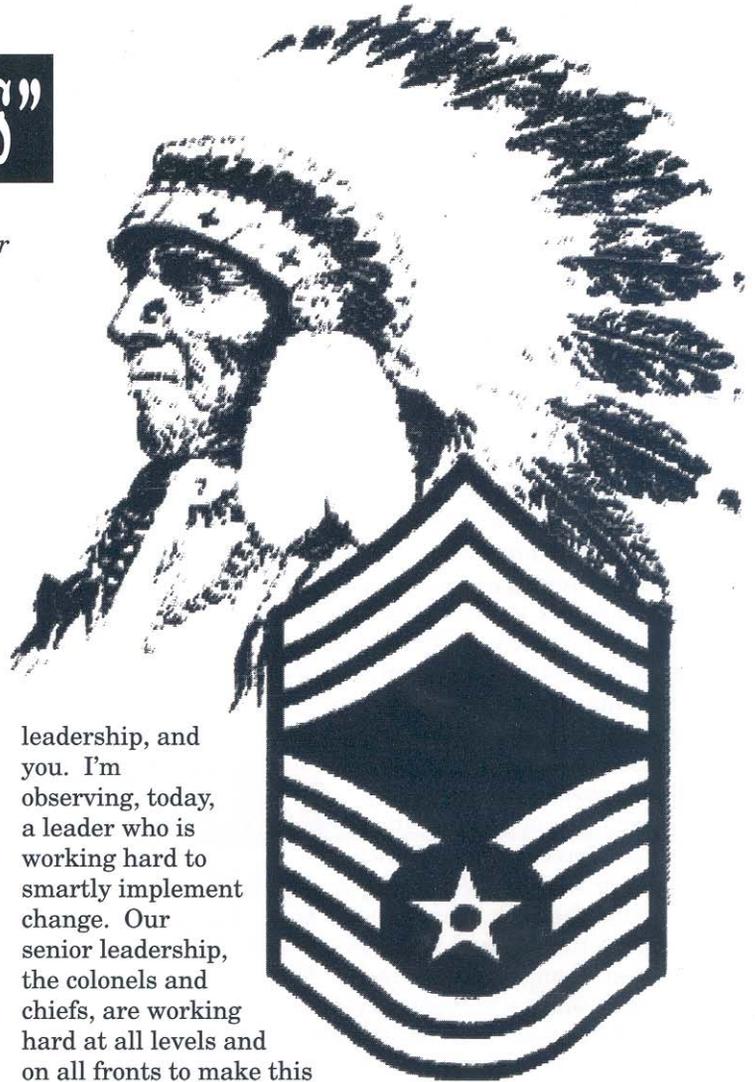
"SPECIAL OBSERVATIONS"

by Chief Master Sgt. Tony Ramirez,
Chief, Enlisted Matters, Air Force Directorate of Weather

I started out and continue to be an Observer. But these days, I observe in a different sense and from unique observation sites: in the Pentagon and on the road. My first boss here once said, "If seeing the Capitol dome and Washington Monument doesn't charge you up when you come in to work — nothing will" (they light up these buildings when it's dark). I'm proud to be here, especially now. On the road, I travel as Brig. Gen. Lewis' "wing man." We try to get out to see you as often as the general's busy schedule will allow. These days I'm observing our people, our career field, training, operations, how we contribute to the Air Force mission, how we're leveraging new technologies, and how we're reengineering. I really like where we're heading. And I like having the opportunity to be involved in rethinking and revamping some of our old ways of doing business; ways which (I think you'll agree) are in need of some fixing. OK, enough stage setting. Now let me tell you what I've been seeing.

We are reengineering. Weather units in PACAF and USAFE are setting the pace. The Strategic Center-Operational Weather Squadron-Combat Weather Team structure is right on target but it's hard to visualize how the new work centers, roles and responsibilities, and work processes will look. Sometimes the CONOPS discussions get pretty "lively," but that's the nature of change and the nature of being in Air Force Weather — being "engaged." If we understand the vision, believe in it, and move toward it, we'll build the processes right along the way. The further along this road we get, the more I'm convinced it's the right one. Old, inefficient paradigms are starting to crumble and new, more efficient ones are beginning to develop and take hold. Moreover, as the details unfold, our people are latching on to the new vision and ideas and are contributing their own. That's a good sign.

I know it's hard to look into the future when your mind is preoccupied with the problems of the day. The Ops tempo you're experiencing out there really is among the highest in the Air Force. Remembering my days in the base weather station, it seemed we were always too busy dealing with the "in our faces" observing, forecasting, and briefing challenges to step back, look at the overall picture, analyze our processes, and change to more efficient and effective ways of conducting day-to-day business. Change needed to be institutional. In a way, that's why it takes an effort such as the one being led by Brig. Gen. Lewis and involving all of our senior



leadership, and you. I'm observing, today, a leader who is working hard to smartly implement change. Our senior leadership, the colonels and chiefs, are working hard at all levels and on all fronts to make this change happen. But the most encouraging thing I see is that you, the men and women of AFW, using the example being set by our weather folks in PACAF and USAFE, are doing your best to make this vision become a reality. You really are the key to the success of this vision.

General Fogleman once commented to us that, in his opinion, "Global Reach — Global Power" really didn't take the speed and impact of new technologies enough into account. New technological capabilities are today enabling us to perform operational processes and procedures in ways we couldn't imagine just five years ago. And they will continue to evolve fast. The first 1000 MHz chip is now reality and (according to the news) is within two to three years of production. How will that change our processes? I am confident that the limitations of our foresight today will be overcome tomorrow by your creativity and imaginations!

On a really great day to be in Air Force Weather, my plain language Special Obs reads as follows: Winds of change increasing, visibility improving ALQDS, AFW rising rapidly. My forecast? I think you know what it is.

MANAGING CHANGE FOR SUCCESS: “Prepare Yourself for AFW Reengineering”

by Col. Gerard D. Wittman, Deputy Chief, Force Enhancement Division,
Directorate of Operations, Headquarters Air Force Space Command



I have often said, “the only thing constant about life is change.” As we are all aware, there is plenty of change in today’s Air Force. Chief Master Sgt. of the Air Force Eric W. Benken recently captured that change from an enlisted perspective and presented it to Chief of Staff of the Air Force, General Michael E. Ryan. Benken characterized the current Air Force situation as “a tale of two decades of the ‘Steady State ‘80s and the Challenging ‘90s.”

For example, There was robust manning in the ‘80s with the right balance of officers, NCOs, and airmen. With today’s force drawdown, VSI/SSB and early retirements carve out the middle of our force — targeting mid-level officers and NCOs — causing a dramatic reduction in experience levels.

In the ‘80s, we improved office environments, introduced computers as standard office equipment, and made numerous facility improvements. Today’s operations tempo is placing a significant strain on funding for day-to-day operations, and training has now become an issue for some weapon systems.

For those of us that entered the Air Force in the “Radical ‘70s,” we weathered the post-Vietnam changes, caught our breath in the ‘80s and survived the next changes in the early ‘90s. But, many who signed on in the ‘90s expected a “steady state” throughout their entire career. However, our military culture has changed from a “cold war” Air Force to an Air and Space Expeditionary Force with a Space and Air Force on the not too distant horizon.

Once we understand individual and organizational concerns, we need to assess the scope, magnitude and origin of the concern and develop a strategy to address it. There are several methods, each with its own advantages, to deal with this resistance and perhaps even prevent it.

Those methods are: education and communication, participation and involvement, facilitation and support, negotiation and agreement, manipulation and co-optation, explicit and implicit coercion.

Certainly, the former methods are much more appealing than the latter. And, the AFW Reengineering effort has taken full advantage of a strategy that employs education, communication, participation, facilitation, and when necessary, negotiation and agreement. It is that sound strategy, numerous dedicated individuals, and a total AF-wide commitment that produced the visionary, yet attainable, change to Air force weather operations that we are now implementing from Europe to Alaska.

To adapt to these operational, fiscal, and cultural changes, Air Force Weather is embarking on a full-scale reengineering effort that enables weather operations to keep

pace with expected needs of the rapidly changing military operations planned for the 21st Century. We cannot afford to hang on to the “Steady State ‘80s” weather operations any longer, but must fully embrace AFW Reengineering and the changes it will bring.

Richard Hooker, a 16th Century English theologian, said, “change is not made without inconvenience, even from worse to better.” This inconvenience often causes people to resist change, because the real problem is not technical change we have all reaped technological benefits. The real problem comes with human changes that must be made to fully exploit technological innovation. So, in today’s ever-changing military, we must develop managerial skills to diagnose individual and organizational resistance to change and the leadership to choose the appropriate methods to overcome it.

Everyone affected by change experiences some degree of emotional turmoil. No matter how “positive” or “rational” it appears, change will evoke feelings of loss and uncertainty. Nevertheless, for any number of reasons, individuals and groups react differently to change — from passively resisting it, to aggressively trying to undermine it, to sincerely embracing it.

To minimize the impact this resistance will have on the change, we must first understand the reason people are likely to resist change. Those include: a desire not to lose something of value, a misunderstanding of the change and its implication, a belief that the change does not make sense for the organization, a low tolerance for change.

To be successful, this implementation takes commitment from each of us — from airman to general. To be committed, we must first understand and embrace the change, then explain it to others to alleviate their concerns and eliminate any resistance to it. Lastly, we must fully participate in the planning and execution of the change implementation — to get it right and we need everyone’s expertise and insight.

While we will certainly derive significant benefits from this reengineering effort, it isn’t the “final frontier.” We must continue to seek out improvement opportunities. Perhaps Isaac Asimov, a Russian-born U.S. author, said it best: “It is change, continuing change, inevitable change, that is the dominant factor in society today. No sensible decision can be made any longer without taking into account not only the world as it is, but the world as it will be.”

Are you prepared for the next transition — from the “Challenging ‘90s” to the “Exciting 21st Century?”

**GET READY!
STAY READY!**

AFWA NCOs Honor Col. Hayes

by Paige Rowland, Office of Public Affairs,
Headquarters Air Force Weather Agency



The Commander of Air Force Weather Agency, Col. John L. Hayes, and his wife, Sharon, were escorted from their home on base to Offutt's Stripes Club by a bagpiper and sword-bearing honor guard. Enlisted members of AFWA fell in behind the procession as it passed.

Air Force Weather Agency Commander Col. John L. Hayes was honored by his enlisted members April 4 with the highest honor noncommissioned officers can bestow upon an individual, the Order of the Sword.

Hayes, the first AFWA inductee into the Order of the Sword, eminently accepted the prestigious honor. "Thank you for being such an incredibly hard-working, dedicated enlisted core. You truly bring out the best in me," he said.

According to members in his command, Hayes possesses all the essential qualities of leadership and tempers them with compassion, a sense of humor, a common-sense approach to any endeavor, and an extremely high regard for the value of his noncommissioned officers and airmen.

"Colonel Hayes inspires people to take pride in their individual duties and accomplishments," said Chief Master Sgt. George W. Darby, AFWA first sergeant. "He is a total leader and mentor."

According to the AFWA enlisted core, Hayes epitomizes the "can do" attitude that makes AFWA the respected, world-class center of expertise for which it is known. Hayes has been instrumental in the reengineering of the organization. AFWA was created when the Air Force Global Weather Center was inactivated and Air Weather Service, formerly at Scott Air Force Base, was redesignated. During the past two and a half years, Hayes had served as commander for both centers, first for AFGWC and then AWS.

"I can think of no other commander, throughout my 29-year enlisted career, who is more deserving or who better supports and advocates the enlisted force than the first commander of this agency, Col. Hayes," said Darby during the presentation.

The ceremony was filled with military etiquette and grace, from the arrival of the official party through a sword cordon to the retiring of the colors. Escorting the colonel and his wife, Sharon, from their home to the Stripes Club were four honor guard members bearing swords and a single bag pipe player leading the way. AFWA enlisted members lined the sidewalks falling in behind the official party as they passed by.

The Order of the Sword is patterned after two orders of chivalry founded during the Middle Ages, both of which are still in existence. The Air Force ceremony as we know it today was established in the early 12th century. In 1522, King Gustavus I of Sweden ordered the noblemen commissioned by him to appoint officers to serve him. Those appointed were the accountants, builders, craftspeople, teachers, scribes, and others responsible for conducting the ordinary daily affairs of the kingdom.

The sword, a symbol of truth and justice, served as a token for all to see and know that here was "a leader among leaders" and a "man among men." This ceremony became known as "the Royal Order of the Sword." It passed through the ages, coming to America about the time of the Revolutionary War.



From left to right: Members of the head table were, Chief Master Sgt. Teresa Lockner (not pictured), Chief Master Sgt. Tony Ramirez, Sharon Hayes, Col. John L. Hayes, Chief Master Sgt. George Darby, Chief Master Sgt. Steve Williamson, Chief Master Sgt. Ricky Vanhooser and Chief Master Sgt. Ronald Pagitt (not pictured).

The old "Royal Order of the Sword" ceremony has been revised, updated and adopted by the noncommissioned officers of the United States Air Force as their method of paying tribute to officers whom they hold in the highest esteem.

"It is a pleasure to get up in the morning knowing that I am working with the best enlisted core in the Air Force," concluded Hayes.

THE MILITARY AIRCREW INFORMATION SERVICE:

Helping Aircrews Navigate the Maze of Weather Information

by Maj. William Moak
Headquarters Air Force Weather Agency

Preparing for a cross-country training flight, an Air National Guard pilot needs flying weather. Instead of calling the nearest base weather station, he logs onto his PC and selects the Military Aircrew Information Service bookmark on his Web browser. Once in, MAIS walks him through a satellite image, radar composite, warfighter visualizations depicting flight level winds and weather hazards, and relevant observations, TAFs and Notice-To-Airmen. After reviewing the information, he prints copies of the satellite picture and NOTAMs and heads for the flight line.

This scenario will be repeated all over the country beginning this fall. MAIS will provide quick, world-wide access to weather information by aircrews and supervisors of flying. Initially available to Guard and Reserve units, MAIS will expand to serve active duty aircrews.

Following the base closings in the early 1990s, many Reserve Component units lost their active duty source of flying weather and turned to a wide array of sources including commercial systems, The Weather Channel, and even USA Today. In 1995, the HQ USAF Directorate of Weather (USAF/XOW) began working with the Air National Guard and the Air Force Reserve to develop an Air Force Weather solution: the MAIS concept was born. From the beginning, MAIS looked to the NIPRNet and World-Wide Web to serve as the communications backbone required to support customers from all over the

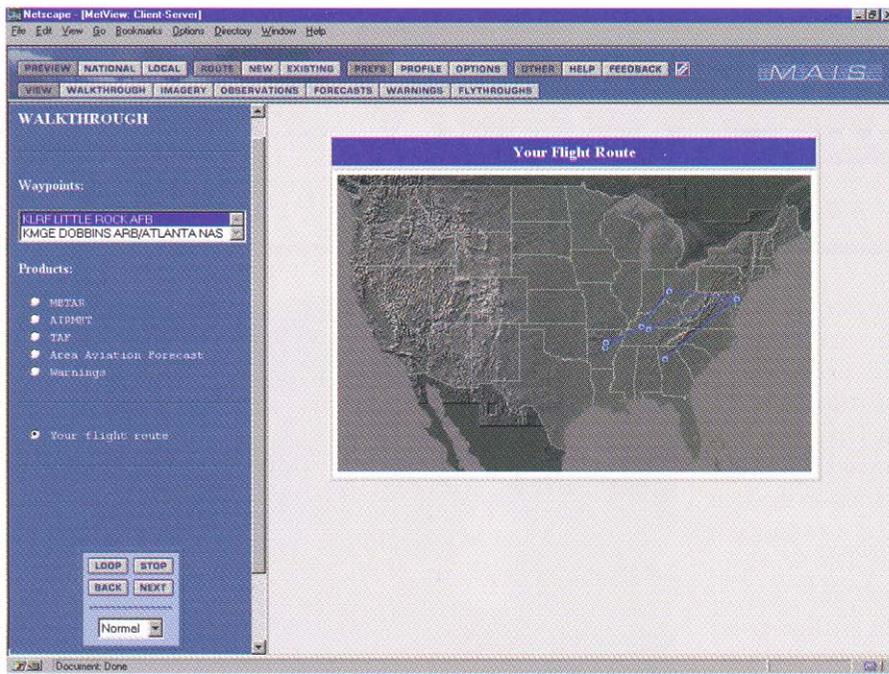
CONUS (and eventually the world). The initial concept called for a commercial vendor to build MAIS. However, as the system requirements were identified, it became evident that the basic server-client system required to support MAIS already existed in AFGWC's Air Force Weather Information Network (AFWIN). Therefore, in late 1996, the Program Manager decided to build MAIS as an extension of AFWIN. MAIS was developed by the Systems Acquisition Branch at AFGWC. The Air National Guard and the Air Force Reserve are funding continued MAIS development.

"A" is for aircrew, and MAIS is tailored to aircrew requirements. To ensure customer focus, the Aircrew Products Advisor (a rated officer at AFGWC) set up the MAIS Users Working Group to help refine product requirements and advise developers on the system-user interface. The working group is comprised of over 30 Reserve, Guard, and active duty flyers representing experience with several different airframes including A-10s, B-1s, B-52s, C-12s, C-26s, C-130s, F-15s, F-16s, KC-10s, KC-135s, T-38s, UH-1s, UH-60s, and others. AFGWC hosted a kick-off meeting in March 1997, during which group members discussed their requirements for weather information and provided valuable feedback during hands-on demonstrations of a MAIS prototype. One message the working group made loud and clear is that speed is a top priority. The MAIS development team took heed and is actively exploring several options to improve system speed including file compression and bypassing communication bottlenecks. However, communications are still a big concern, especially during

The screenshot shows the Netscape browser window displaying the MAIS website. The browser title is "Netscape [MetView: Client-Server]". The address bar shows "File Edit View Go Bookmarks Options Directory Window Help". The website has a navigation menu with tabs for "PREVIEW", "NATIONAL", "LOCAL", "ROUTE", "NEW", "EXISTING", "PREP", "PROFILE", "OPTIONS", "OTHER", "HELP", and "FEEDBACK". Below this is another set of tabs: "VIEW", "WALKTHROUGH", "IMAGERY", "OBSERVATIONS", "FORECASTS", "WARNINGS", and "FLYTHROUGHS". The main content area is titled "WALKTHROUGH" and includes a "Waypoints:" section with a list of airports: "KLRF LITTLE ROCK AFB" and "KMGE DOBBINS AFB/ATLANTA NAS". There is also a "Products:" section with radio buttons for "METAR", "AIRMET", "TAF", "Area Aviation Forecast", and "Warnings". At the bottom of the waypoints section are buttons for "LOOP", "STOP", "BACK", "NEXT", and a "Normal" dropdown menu. The right side of the page displays an "Aviation Weather Report" for "LITTLE ROCK AFB". The report includes a METAR string: "METAR KLRF 151555Z 25010KT 200V270 6SM HZ BKN050 BKN250 30/24 A3007 RMK SLP178 HDT CU OVRD 8/202 9/302". The report table is as follows:

LITTLE ROCK AFB		Aviation Weather Report	
METAR	KLRF 151555Z 25010KT 200V270 6SM HZ BKN050 BKN250 30/24 A3007 RMK SLP178 HDT CU OVRD 8/202 9/302	REPORT TYPE	Scheduled Report
		TIME	15:55Z
		STATION TYPE	Attended
		SKY CONDITION	Broken Clouds at 5000 feet Broken Clouds at 25000 feet
		VISIBILITY	6 statute miles
		PRESENT WEATHER	Haze
		OBSTRUCTIONS TO VISION	Haze
		SEA-LEVEL PRESSURE	1017.8 millibars
		TEMPERATURE	30 ° C / 86 ° F
		DEW POINT	24 ° C / 75 ° F
		WIND DIRECTION	250 ° true
		WIND SPEED	10 knots
		ALTIMETER SETTING	30.07 in/Hg

MAIS gives pilots preflight weather information, including weather at their destination and anywhere in between.



A pilot's route of flight is easily visualized on a topographical map.

periods of peak use on the NIPRNet and World-Wide Web. Therefore, the MAIS development team is working with the Defense Information Systems Agency to add a modem bank to provide an alternate means of connectivity during network slowdowns and provide access from locations that don't have network access. The Users Working Group has stayed engaged by evaluating modifications and new features on an on-line prototype.

MAIS' hardware framework consists of four Silicon Graphic Origin 200 workstations that function as Web servers, database and product servers, a development system, and testbed and backup. Per agreement with the Guard and Reserve, MAIS users should have at least a 100 MHz Pentium computer with Windows 95 and Netscape Navigator version 3.01. Directions for browser upgrades appear on the MAIS login page. New users will be given an initial password which they can then personalize. Once the aircrew member has gotten in, MAIS will walk him or her through a minimum set of MAJCOM-prescribed products. Users can't edit the minimum product suite but can select additional products and customize their interface to retrieve a specific product set. Information available on MAIS includes a mix of Air Force weather products and commercial products databased by the Air Force. Users will have access to static shots and loops of satellite imagery (visible and IR GOES East, GOES West, and composites), radar imagery (six regional sectors and a national composite), a satellite-radar composite, and warfighter visualizations of thunderstorms, icing, turbulence and upper level winds. MAIS will also provide access to alphanumeric data including Point Weather Warnings, NWS weather watches and warnings, observations, terminal aerodrome forecasts, pilot reports, aircraft reports, significant

meteorological information reports, lightning and NOTAMS. MAIS will allow users to retrieve information for specific points or within a corridor surrounding a user-defined flight path. The user can select points or define a route of flight by typing in the four-letter ICAO identifiers or by pointing and clicking on a graphic interface. MAIS will allow users to save flight plans for reuse at a later time.

At the June '97 CORONA TOP, the Air Force's senior leadership got a hands-on demonstration of MAIS. The Secretary, Chief of Staff, and MAJCOM commanders all got a preview of the tool that will be integral to the dissemination of weather information to aircrews in the future. The first version of MAIS was released to the Users Working Group in August 1997 for evaluation and feedback.

Initial release to the rest of the Guard and Reserve flying community is tentatively scheduled for 1998. The MAIS program doesn't end there, however. The MAIS development team already has a laundry list of enhancements and new features for MAIS. First and foremost is expansion to world-wide coverage. A close second is increased robustness to handle the tremendous additional load of active duty aircrews.

MAIS will help fill an expanding gap of weather support to Air Force and Army National Guard and Reserve aircrews. Not only will it provide access to timely and quality weather information, but MAIS will establish consistency across the Guard and Reserve and reinforce a "train as you fight" philosophy. MAIS will also relieve some of the briefing burden that's currently absorbed by active duty base weather stations. Whether assigned to a base weather station, a combat weather team, or an operational weather squadron, forecasters need to be familiar with this on-line service in order to assist aircrews when they require clarification or have follow-up questions. Weather personnel will have access to MAIS via a hot-link from AFWIN—watch the "News" feature on AFWIN for more information.

**AIR FORCE WEATHER
OPERATIONS EXPOSITION & WORKSHOP
27-31 JULY 1998**

The Operations Expo and Workshop has been scheduled. This year's conference will take place in the Heartland at Offutt AFB, Neb., hosted by the Air Force Weather Agency. Look for detailed information in an upcoming issue of the Observer magazine.

SATELLITE PRODUCTION SYSTEM

gets upgrade

by Capt. O. J. Dona, Satellite Communication Program Manager,
Headquarters Air Force Weather Agency

Air Force meteorologists and computer systems operators received a modern, state-of-the-art satellite data handling system Mar. 12 that will provide the weather forecaster with increased capabilities.

The Satellite Data Handling System Upgrade is a computer system facelift that has migrated Air Force Weather's mainframe-based weather production system to an open, modular client server-based production system. The upgrade has already made the work of meteorologists at AFWA quicker and easier.

"Forecasters now have the means to utilize their meteorology expertise," said Maj. Mark W. Seifert, SDSHU program manager for AFWA. "Prior to the upgrade, forecasters spent a great deal of time doing basic tasks," he added.

SDHSU increases the interactive imagery and graphic techniques, allowing quicker ingest, retrieval and display of weather and satellite data at workstations. Weather forecasters are now able to manipulate satellite imagery and conventional weather data to generate more products for various customers. SDHSU also allows forecasters to create products that consist of imagery data, graphic data, graphic data overlaid imagery, and text products.

According to Staff Sgt. Garth L. Getgen, a forecaster at AFWA, the new system has already made an impact on the men and women who use it daily. "It used to be that certain tools took fifteen minutes to display," explained Getgen, "Now, these tools are displayed in less than a minute, and in some instances, we've experienced an increase from five minutes to ten seconds."

In addition to the increased speed, SDHSU is capable of accepting and storing a large volume of conventional computer-based weather data, and disseminates weather products to external systems in the appropriate format and scale.

The upgrade is part three of a four-phase effort designed to improve weather operations worldwide. SDHSU phase one began with the introduction of a prototype satellite retrieval processor and phase two brought a number of these prototype processors into service. The final phase establishes classified capabilities for the SDHSU and is scheduled for completion in June of this year.



The ribbon cutting ceremony took place March 12 at Air Force Weather Agency's operation center. Cutting the ribbon from left to right are Col. Frank J. Misciasci (ret), Staff Sgt. Garth Getgen, Ray Marshall, Maj. Mark W. Seifert, AFWA Commander Col. Hayes, and Col. Joseph D. Duschan (ret). Photo by Capt. O.J. Dona



Ed Weniger, a meteorological applications manager for Sterling Corp., demonstrates a few of the capabilities of SDHSU to AFWA forecaster Senior Airman Wesley A. Freese. Photo by Capt. O.J. Dona

"Satellite Data Handling System Upgrade is fundamental to executing several of our key strategic goals," said Col. John L. Hayes, commander of AFWA. "Leveraging advanced technology like this one and modernizing our infrastructure are critical to the foundation of Air Force Weather."

Jumping out of airplanes; subduing the enemy by any means necessary; utilizing the latest in weapons technology; deploying to all parts of the world to crawl stealthily through steaming jungles or hack mightily through blocks of arctic ice. From the sound of it, these adventurous activities seem an unlikely pastime for an Air Force weatherman. But, at Fort Campbell, Ky., this is exactly what Detachment 2, 10th Combat Weather Squadron, trains its weather personnel to do.

Det. 2 are a dedicated group of weather professionals who rely heavily on focus and teamwork to ensure their warfighting capabilities are always sharply honed and standing at the ready. They accomplish this vital task by supporting two of the world's most elite special forces units: the 5th Special Forces Group (Airborne); and the 160th Special Operations Aviation Regiment (Airborne).

The 5th Special Forces Group is a Green Beret unit responsible for operations in Southwest Asia and Northwest Africa. They are a fiercely diligent, highly skilled group of soldiers who require absolute professionalism from those within the support structure.

The other customer Det. 2 supports is the 160th Special Operations Aviation Regiment. This unit is like no other in the world. Sticking fervently to their "anywhere, anytime, time over target plus or minus 30 seconds" motto, makes them the world's fastest deployable task force. Keeping on par with the 160th SOAR makes for a stringent mobility commitment which can keep Det. 2 personnel deployed for up to 180 days a year. Moreover, Det. 2 currently deploys annually to the National Training Center, Fort Irwin, Calif., and to the Joint Readiness Training Center, Fort Polk, La.

In addition to these exercises and operations, airmen in Det. 2 have participated in hundreds of deployments to countries all over the world. These countries include Panama, Cuba, Guyana, Belize, Oman, Pakistan, Djibouti, Italy, Haiti, Somalia, and many others. Experiences gained on these deployments are invaluable in both their operational and professional aspects. The nature of the job also provides an opportunity to earn jumpwings from other countries, a feat accomplished

by participating in airborne operations conducted in that respective country.

All personnel at Det. 2 are required to be airborne qualified and to have successfully completed either an Army or Air Force Survival Evasion Resistance and Escape course. Upon arrival at Fort Campbell, members must also attend the 160th SOAR Selection and Training course (popularly known as "Green Platoon"). The Selection and Training course is a four-week, physically and mentally demanding curriculum intended to teach advanced soldiering skills. However, this modest indoctrination is only the beginning.

Airmen in Det. 2 also have opportunities to attend a wide variety of training courses, including land navigation, airborne operations, small unit tactics, and advanced marksmanship training with weapons like the MP5 submachine gun and various foreign weapons.

Being stationed at Det. 2 also opens doors to valuable Army training available to very few other Air Force personnel and allows members to attend supplemental training courses, such as: U.S. Army Assault school, Combat Diver (SCUBA), sniper school, and other courses unique to the Special Operations community. When not deployed or involved in formal training, members of Det. 2 hone their manifold skills on the latest deployable weather equipment and techniques, or attend seminars covering all aspects of tactical weather operations.

To take full advantage of all opportunities, personnel at Det. 2 are required to meet rigid physical fitness standards, designed to keep unit personnel in top physical condition and to minimize their risk of physical injury during training exercises and real-world operations. Mandatory physical training is conducted five days a week.

Constant physical, mental and technical training, gives customers the assurance that Det. 2 can be counted on to hold their own, in any environment and in any situation.

The Special Operations Weather Teams stationed at Fort Campbell's Det. 2 serve some of the most demanding military customers in the world. Members of Det. 2 maintain the outstanding tradition of support to the most elite and distinctive Special Forces units serving at the tip of the spear. They have stepped up where others would not; have accomplished a job others could not; and have pushed their respective abilities to the breaking point, forcing themselves to meet any challenges posed to them by either the Air Force or the Army elite.

Anatomy of a SPECS-OPS Unit

TAKE THE CHALLENGE!
For information contact
10th Combat Weather Squadron
Hurlburt Field, Fla.
DSN: 579-6359
or **Detachment 2**
Fort Campbell, Ky.
DSN: 635-0479/4079

Think you have what it takes?

by Senior Airman James Harding, Special Operations Weather Forecaster, Det. 2, 10th CWS, Fort Campbell, Ky.

Becoming a NIGHTSTALKER

The quiet of the morning air is whipped to an icy chill by a steady northerly breeze. A fine mist rises from the open field. All is not quiet.

The dew from the grass between my fingers, drips across my trembling hands and soaks my physical training clothes, magnifying the cold, and still I sweat. My heart races until I can feel it pounding in my ears. With each gasp for breath, my lungs feel as though they are filled with ice water. Beads of sweat roll down my face and burn my eyes. Every muscle in my body aches from fatigue and I feel as though they've ceased to function ten minutes ago. My body hovers over the ground in a stalemate of will power and total exhaustion, seemingly incapable of completing another full push-up, yet unwilling to quit.

A gruff voice rings out clear as a bell in the frigid air: "Roll over, everybody on your backs, flutterkicks! If you can't push, you'll kick!"

I glance up to see one of the five ominous figures who circle around us. They are dressed in spit-shined boots, pressed BDU pants, and thick black sweatshirts embossed with an emblem and a few words. Only one of the words stands out: NIGHTSTALKERS.

Welcome to the first day of grueling tryouts for "Green Platoon," the 160th Special Operations Aviation Regiment's (Airborne) Selection and Training Assessment Course, conducted at Fort Campbell, Ky. The object of this initial test is to see how well an individual performs under

extreme physical exertion in a stressful environment. The cadre (instructors) inform us that the NIGHTSTALKERS are a completely voluntary unit, and that we may quit at any time without threat of reprisal or reprimand. "If you don't want to be here, we don't want you," is their unambiguous proclamation. Thus, only a burning desire to be a member of this proud organization gives us the will to withstand its rigorous demands.

The 160th SOAR(A) is a unique and elite helicopter unit, the only one in the world supporting special operations missions requiring direct, aggressive, and on time (plus or minus 30 seconds) helicopter support. Detachment 2, of the 10th Combat Weather Squadron, is tasked with providing weather support for the 160th, anytime, anywhere. In order to accomplish this task, members of Det. 2 must first undergo special operations training and maintain the demanding standards of the 160th.

Green Platoon was 30 days of intense physical exertion and tactical training divided into four one-week sections: land navigation, weapons training, basic combat life saving steps and pool training, and close quarters countermeasures.

During land navigation, the class was divided into individual four-man teams. Each team worked independently, and communication between separate teams was forbidden. Violation of this rule was grounds for immediate removal from the course. Twenty hours of classroom

instruction (with a test) was conducted, followed by a two-day, two-night field training exercise (FTX). Classroom instruction covered map reading and recognition of features, compass training, terrain recognition and association, point plotting on a map, dead reckoning procedures with a compass, and directional finding without a compass using the sun, shadows, stars, etc. In the FTX, we were given the opportunity to apply classroom techniques, and worked together as a cohesive team to accomplish mission objectives.

In week two we received training on the M-9 (Barretta 92SF 9mm pistol), the M-16 rifle, and the M-4 collapsible assault rifle. During this time, we fired approximately 1500 rounds of ammunition in three days. Prior to actually firing, we spent two days in the classroom familiarizing ourselves with the mechanics of the weapons. We were instructed on how to break them down, conduct minor repairs, clean, re-assemble, sight in, load and eventually fire them. Moreover, we were required to assemble our weapons blindfolded, which instilled in us an intimate knowledge and understanding of them.

The next three days were spent on the firing range. First we qualified on the M-16, then fired the M-4, and finally moved on to the highlight of the week: the M-9 shoot-off. This event consisted of a quick draw from the holster (in which we were required to take down two steel targets from distances of 25 and 35 meters), a

field expedient reload, and finally the take down of a third target at 50 meters.

Week three was a basic combat lifesaver course. This block of instruction taught us the basic skills required to save lives in a combat situation. The training included self-aid and buddy care, how to administer certain medications, treatment of minor and life-threatening injuries, and intravenous infusion skills. We were required to pass two 50-question tests before our newly acquired skills were assessed in a mass casualty exercise.

During this exercise, our respective team task was to drop into the exercise site, assess the safety of the situation, prioritize the casualties, and treat and evacuate them. Moreover, the physical and mental stress of this situation was enhanced by simulated gunfire and mortar

attacks. We were also given training on how to insert an I.V. with a positive flow; this required us to stick our partner with a 12 gauge needle attached to a lactated ringer I.V. bag, and to get the liquid to circulate effectively.

Week four was dedicated to close-quarters countermeasures, known as CQC. This phase of training gave us the skills necessary to survive in combat without the use of our firearm. The techniques in this block were taught and rehearsed with as much realism as possible, and included sentry removal and submission moves, as well as hand to hand, hand to knife, and knife to knife

combat. A great deal of time was spent on full speed (actual physical contact) drills. The climax of this training was the "knife-off," where classmates competed

against each other in full speed, full contact, one-on-one plastic-knife fights. Not surprisingly, few of us escaped this week without sustaining numerous bumps, bruises, gouges, cuts and some scars.

The NIGHTSTALKER training we received, while difficult, molded us into the kind of weather warriors capable of doing what it takes to accomplish the mission. We are now more confident in our abilities to move, shoot and communicate with our special forces brethren out in the field. Perhaps most importantly, it is an accomplishment we can look back on during the course of our lives and be proud of.



A TALE OF TWO

by James L. Crowder, OC-ALC Office of History, Tinker Air Force Base

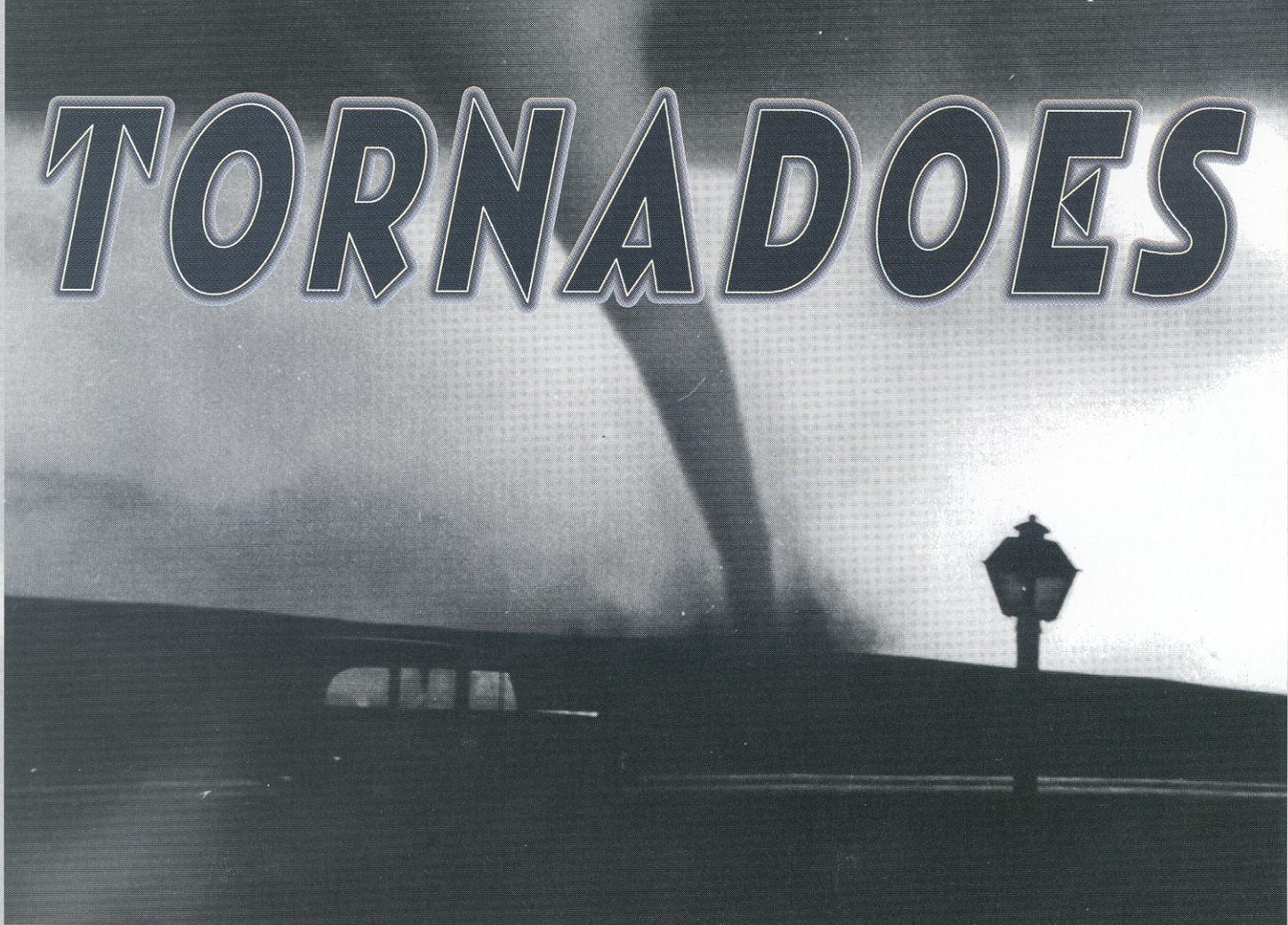
Breaking glass, splintering wood and wrenching metal all engulfed in a deafening roar. The debris and wreckage left in the wake of the two tornadoes made the airfield look as if the enemy's aerial bombardment had been right on target both times. Witnesses remembered the shocking sight long after the final cleanup.

The only softening blow was the realization that the second tornado could have caused much more damage had not the interaction of a few key men changed the course of events. March 20 and 25, 1948, stand as monumental dates in the history of Tinker Air Force Base, the state of Oklahoma, the National Weather Service's Severe Storm Forecasting program, and Air Force weather program.

The thrust of the first Tinker tornado was so tremendous, it made the front page of most newspapers in America. The cutline of The New York Times read: "Twister Tosses Giant Planes About Like Toys in Oklahoma." According to this report, the tornado lasted only seven minutes but caused nearly \$11 million in damage, primarily to aircraft parked on the runway. Clearly, anything of such magnitude was national news.

The tornadic activity came in from the southwest, touching down after bouncing over a lot of barren territory. Hail and heavy rain accompanied the swirling winds, clocked at 78 miles per hour before the airfield instruments broke. Local weathermen later estimated the winds reached at least 100 miles per hour as the

TORNADOES



installation felt the brunt of the blast. The next week, Tinker's in-house newspaper inflated the sensational story even more and claimed the winds hit 250 miles per hour.

Ralph Pursifull, the aircraft dispatcher on duty that Saturday night, said, "I knew right away it was a tornado. First thing I did was duck under my desk." He took a peek and saw a P-47 being blown about by the window while several other planes were being lifted into the air and tossed hundreds of feet away. "Then I stuck my face as far down on the floor as I could get," he said.

Testifying to their structural soundness, all the major concrete, brick and steel buildings erected quickly in the early days of World War II, stood firm under the storm's attack. Seven small storage buildings were destroyed and several others damaged. Plus, almost 100 special purpose military vehicles were wrecked.

The weather forecaster on duty that evening had been assigned to Tinker less than three weeks. His backup, a staff sergeant, was also new to the Great Plains. After analyzing the latest surface weather maps and upper level charts, they arrived at the same prediction, effective 9 p.m. — gusty surface winds up to 35 miles per hour, without thunderstorms. But only 30 minutes later, a vicious storm appeared on their AN-PQ-13 radar scope. The scope, widely used by the Air Weather Service for storm detection, was designed for use as B-29 bombing radar during World War II.

The storm that struck Tinker at 10:22 p.m. apparently touched down at Will Rogers Field municipal airport twelve minutes earlier. The weather bureau station at the airport reported a 98 mile-per-hour wind and its barograph recorded a vertical line, indicating pressure range between 28.22 and 28.53 inches in a few minutes.

The tornado then traveled 10 miles to Tinker, leaving a path of shattered signs, uprooted trees and damaged buildings. For those who dared look, it was clearly visible due to the near-continuous lightning. Two funnels actually followed parallel paths within the storm. One crossed over the southwest perimeter of the base and touched down just east of the disposal plant. It continued on a line perpendicular to the diagonal runway and, with sinister aim, scored a direct hit on Base Operations and the facilities around it. The funnel remained on the ground until it reached the area immediately northeast of the base.



A tornado similar to the one that struck Tinker AFB, rips through the city of Dallas, Texas, in 1957.

The next funnel first hit the airfield in the vicinity of the southeast side of the north-south runway and traveled northeasterly. The tornado finally cut across the top of the base property line and stayed on the ground to northeast 23rd Street. The width of the more destructive funnel was estimated at 880 yards.

Maj. Gen. Fred S. "Fritz" Borum had been commander of Tinker AFB and the Oklahoma City Air Materiel Area since July of 1945 and would serve in that capacity until his retirement in 1954.

The general's organizational skill and scientific savvy probably motivated his questioning of Tinker meteorologists the morning of March 21. He wanted to know first, who was in charge of the installation's weather operations, and second, if they could forecast rain, could they forecast tornadoes? When told that no one could tell if a tornado was coming until they saw it, the general ignored the answer. He wasn't satisfied with just writing off a \$10 million loss as an act of God and waiting for the next one to happen. While he pushed his staff to devise a disaster preparedness plan for the airfield, he also used the judgmental prerogative of a general and ordered the head of the base weather unit and his deputy to do what no one else had ever accomplished.

Maj. Ernest J. Fawbush and Capt. Robert C. Miller were youthful, yet seasoned weathermen of World War II. Fawbush, 33, was an expert on the frigid weather of Alaska; Miller, 28, was versed in the volatility of the South Pacific warm weather patterns. In just a few days, Oklahoma weather would change their lives forever.



Photo courtesy of OC-ALC Office of History
No match for a monster tornado: One of five L-4 liaison planes smashed by the devastating blast that rocked Tinker and the surrounding area.

From the moment they left the commander's conference room, the two weathermen began what became almost an around-the-clock historical analysis of tornadic activity. They gathered every ream of information they could from existing Air Force files and relied heavily on descriptions of the great Woodward, Okla. tornado of the previous year. Their goal was to formulate a model or profile of a thunderstorm that would spawn Mother Nature's most destructive force. They set up shop in a nondescript, 25' x 70' frame building near Tinker Gate. Tinker's Bldg. C-534 became the first severe weather warning research center in the United States.

Although most methods of forecasting severe weather in 1948 were no more reliable than a farmer's nose or a rancher's eye, Fawbush and Miller noted similarities in the moisture distribution and the flow of surface winds compared with wind patterns in the lower atmosphere. While updating the weather situation after lunch on Mar. 25, the two men were stunned to see virtually the same weather pattern developing that had occurred on Mar. 20. Of course, they knew that thunderstorms could pop up almost daily in America's heartland, but the similarities they now saw were just eerie. They notified the command section of the approaching squall line and within minutes Borum's staff car pulled up in front of Base Operations. The general marched into the Weather Station and for the next 10 minutes watched the radar scope while the weathermen commented on the rapid development and increasing intensity of the storm.

Normally brash and confident, Fawbush and Miller were reluctant to tell Borum another tornado was coming. As Miller subsequently stated, "The chances of a tornado hitting the same spot five days later must have been astronomical. It must have been billions to one." Like all good weathermen, they presented the situation to the commander with a lot of possibilities, ifs, coulds, and mights. Borum was not in a timid mood and yelled with a few expletives, "Are we going to have another tornado or not? Yes or no?" Pressed into a corner with their weather maps and radar scope, the meteorologists committed to a gamble and possible humiliation and responded, "Yes; yes, sir. We are." The general told them to get the word out; Fawbush composed the notice, Miller

typed it and carried it across the foyer to Base Operations for dissemination, and the nation's first, operational tornado forecast was issued at 2:50 p.m. Borum's unrelenting pressure did not end there as he swiftly ordered implementation of the new Tornado Safety Plan and as many planes as could be pushed into the hangars were moved; then doors were closed and windows shut. The rows and rows of aircraft cocooned for storage across the diagonal runway were tied as securely as possible.

In surprising retrospect, Miller went home to next-door Midwest City when his duty-day ended at 4:45 p.m. He later classified it as "abandoning ship" since both he and Fawbush were bemoaning the fact that if their prediction proved false, they would have to go back in front of the general and his staff the next day and explain their mistake.

Miller was so sure his career was about to go down the drain for predicting a tornado would hit a specific location, that he wondered if he could make a living as an elevator operator. Thus, in a macabre fashion, both forecasters were praying for another twister. Meanwhile, all swing-shift workers were evacuated to basement shelters and the interiors of thick, solid buildings. And this time, everyone was told to get out of the control tower on Bldg. 240.

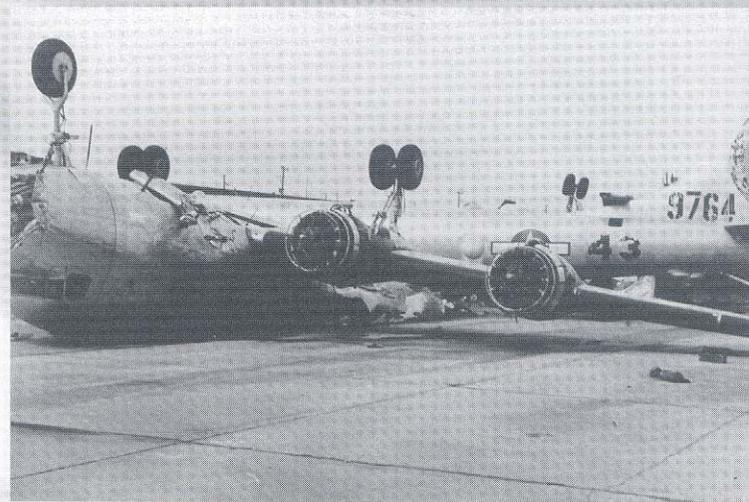


Photo courtesy of OC-ALC Office of History
Aircraft were scattered helter-skelter following the storms. Seventeen C-54's were victims of the first tornado. This one was picked up and slammed on its back for a two-point take down.

The tornado struck near the disposal plant at 5:58 p.m., almost exactly at the same spot as the tornado five days earlier. In its northeasterly mile-and-a-half path, the tornado damaged 84 B-29s and P-47s, 35 beyond repair. Several hundred yards of steel planking, used as the planes' parking surface, were ripped up and crinkled. Bldgs. 240, 95 and 106 suffered additional damage. One person was slightly injured. Apparently, the funnel formed when two thunderstorms converged about three miles southwest of the base. Winds at the edge of the

storm were just under 80 miles per hour; they were accompanied by moderate hail, one-half to three-quarters inch in diameter.

"The cloud formed right over the field," Borum reported. "I was watching that cloud and it just formed and zipped right down." The commander, who stood in the back doorway of his quarters on Staff Drive, watched it and heard the crash of airplanes as they were tossed around the airfield. He said the cloud was yellowish in color and radish shaped as it rumbled through the parked aircraft, picked up a load of muddy water, and swirled across the north boundary.

The tornado of Mar. 20 was unusual for striking on the last day of winter, (as most tornadoes hit in May), and for working its destruction after 10 p.m., when they generally stir in the late afternoon and move into the darkening hours. No one was expecting another devastating tornado just five days after the first, but the storm of Mar. 25 did fit the norm of building in the afternoon and exploding in the early evening.

Now carried aloft by their prophetic breakthrough, Fawbush and Miller earned the support and cooperation of every weatherman who learned of their forecast. W.E. Maugham, head of the Oklahoma City Weather Bureau, gave the two researchers complete access to his office's 40 years of weather data. Later, when their reputation rippled nationwide, they gained an open door to the regional weather records unit in New Orleans, the records center for the National Weather Bureau, plus the archives of both the Air Force's Air Weather Service and the Navy's weather organizations.

In February 1951, they went national and established the Air Force's official Severe Weather Warning Center at Tinker. They described their relationship to the base weather station as "analogous to that of the medical specialist to the general medical practitioner." By then, they had their basic theory formulated and had made numerous, astute predictions by recognizing a clashing of moist and dry air flowing into a low-pressure area covered with an overhead jet stream.



Photo courtesy of OC-ALC Office of History
Air Force weather pioneers: Tinker weathermen, Capt. Robert C. Miller (left) and Lt. Col. E.J. Fawbush, discuss their original method of forecasting tornadoes.

Although 67 of their 75 tornado forecasts proved accurate, they always stressed that their system was not perfect, noting that tornadoes were formed so suddenly and dissipated so quickly that no more than a few minutes warning could be expected.

"Only the probability of severe thunderstorms, tornadoes, and hail can be predicted, and that only by forecasting the weather conditions in which storms developed," Fawbush wrote in the *Air University Review*. However, their statistics boasted that out of more than 200 predictions, Tinker's forecasters had been correct more than 90 percent of the time.

It was not until January 1953, that Fawbush and Miller received department level recognition for their unique act of patriotism. Commendation medals and citations signed by Secretary of the Air Force Thomas K. Finletter were presented to the Tinker officers by Col. Andrew L. Haig, base executive officer, during a Saturday review of troops at Tinker.

Interestingly, Miller always believed Borum was the one who should have received the credit for the historic warning since he was the one that pushed them into it.

Fawbush continued weather research for the Air Force and departed Tinker in early October 1955 for an assignment with a weather squadron stationed in Libya. He later worked for the Department of Defense in New Mexico and Arizona, then retired to Sierra Vista, Ariz. where he later died.

Miller served at Tinker until 1955 when he became chief forecaster at the Air Force's Weather Central at High Wycombe Air Base, United Kingdom. He completed his military career and became the chief civilian scientist for analysis and forecasting with the Air Force's Global Weather Center, now Air Force Weather Agency at Offutt AFB, Neb. He later moved to Laurel, Md. to operate a military memorabilia store in the Washington D.C. area.



Photo courtesy of OC-ALC Office of History
The scene on Sunday morning. Part of the wreckage left by the tornado which struck Tinker Air Force Base on March 20, 1948. The Saturday night funnel destroyed 52 aircraft and damaged another 50.

EDITOR'S NOTE:

Photographs of tornadoes used in the story are not of the actual tornadoes which struck Tinker AFB in 1949. They are used for illustrative purposes only.

Tornado Forecast Dedication

Tornado prediction at Tinker still makes history

by Ronea Alger, Office of Public Affairs, Tinker Air Force Base

On March 25, 1948 Air Force meteorologists Maj. Ernest J. Fawbush and Capt. Robert C. Miller predicted a tornado would hit Tinker Air Force Base. Three hours after their prediction, a tornado swept through the base causing \$6 million in damage to Tinker's aircraft and buildings. This was the country's first tornado forecast.

A ceremony to commemorate this event was held on March 25, 1998 at Tinker Air Force Base. Members of the National Weather Service, National Severe Storms Laboratory, and the University of Oklahoma were present to highlight the significant advances science has made over the last 50 years. They also stressed the importance of safety and preparedness during severe weather situations.

More than 100 people attended the ceremony, including Fawbush and Miller family members. Oklahoma Lt. Gov. Mary Fallin said during the ceremony that, "not only did the gentlemen's prediction save lives and money on that very important day, but because of the prediction, tornado warnings are now broadcast which have saved many lives in the past 50 years."

"General Borum was an active participant in the first tornado forecast," said Brig. Gen. (select) Donald J. Wetekam, Oklahoma City Air Logistics Center vice commander. "According to Colonel Miller, General Borum was the catalyst who tied together the meteorological knowledge of Fawbush and Miller with the operational needs of the base. He provided the subtle nudge to disseminate that first tornado forecast."

In addition to the ceremony, an extended celebration in Norman, Oklahoma was held on March 23 and 24. On March 23, an open house was held at the Storm Prediction Center, the National Severe Storms Laboratory, the Operational Support Facility and the Weather Forecast Office in Norman. Students and families from the area toured the facilities located on the University Research Park.

Participants learned how severe weather and tornado watches and warnings are generated and issued each day at the Storm Prediction Center. They also had a chance to tour the Norman forecast office responsible for weather forecasts.



Family members of Miller and Fawbush read the granite monument, dedicated March 25, 1998.

Observant Weatherman Keeps Convoy out of Trouble

by Senior Master Sgt. David V. Jenkins, Operations Superintendent
7th Expeditionary Weather Squadron, Tuzla Air Base, Bosnia-Herzegovina

Having a weather observer around can sometimes be a lifesaver. That's what U.S. Army Staff Sgt. Charles D. Travers, NCOIC of the Russian Brigade Civil Affairs team, discovered during a Sep. 14, 1997 Stabilization Force mission in the former Yugoslavia.

Airman 1st Class Harold L. Williams joined Travers on the mission while on temporary duty assignment from Det. 10, 7th Weather Squadron, Giebelstadt Army Airfield, Germany. Williams, assigned to the 7th Expeditionary Weather Squadron, Tuzla Air Base, Bosnia-Herzegovina, and forward-deployed to Camp Uglivek to support the Russian Brigade, offered to spend his day off as a security rider on the CA convoy. He volunteered to operate a Global Positioning System receiver, similar to one that is included in the Mobile Observing System used by deployed weather observers.

The convoy started off uneventfully, but the situation became tense when the convoy commander was forced to detour from the approved convoy route. "We asked for directions from the locals," said Travers, "and were directed down a road that was thought to have been swept for mines and was considered to be safe." But, Spc. Devon Schuster was a little uneasy. "The person we talked to wasn't

really sure about the route; however, we decided to proceed cautiously," Schuster said.

The convoy commander followed the directions he had been given, but soon began to have misgivings as the road narrowed and visibility dropped in rain and fog. Meanwhile, Williams was using his GPS receiver and a 1:50,000 scale map to check the convoy's position. Williams quickly realized that the convoy was approaching a mined area. He told Travers to stop the convoy, then together they verified the position of the vehicles. Sure enough, only a few hundred meters ahead was an area designated as mined by the Task Force Eagle Mine Action Center. The trick now was to turn the convoy around without allowing the wheels of any vehicle to leave the paved surface and possibly roll onto a mine. Again Williams proved his worth by assisting the convoy commander in maneuvering the vehicles out of the area.

Travers praised Williams after the experience. "He displayed skills and decisiveness well above his grade level, and prevented the convoy from traveling into a known mined area. If not for his initiative, and abilities using the GPS receiver and reading a map, we may well have taken casualties that day."

"AWDS Latest Software Programs Now Available"

by Senior Master Sgt. Bob Haines, Air Force Weather Agency Systems Management Branch

The latest upgrades to the Automated Weather Distribution System, software version 3.4 and Product Viewer version 1.2, are on their way to the field. OCONUS installations began Feb. 98 with all AWDS upgrades completing by late June 98. Each MAJCOM AWDS point of contact has a copy of the installation schedule.

AWDS 3.4 brings many new capabilities to the weather station. Perhaps the most eagerly awaited capability is ingest and display of Meteorological Satellite and CONUS Next Generation Weather Radar imagery. This data is transmitted from the hub at Offutt AFB, Neb., to the Very Small Aperture Terminal hardware at each AWDS location. The VSAT hardware will be installed at each location in conjunction with the installation of AWDS software. Other key improvements in AWDS 3.4 include increased upper air and surface formatted binary data retention from 100/500 stations to 500/2000 stations, respectively; standard (NOAA) and locally developed METSAT enhancement curves, the ability to run command sequences on both graphics monitors simultaneously, and wildcarding for product retention and routing. AWDS 3.4 also brings enhanced warning/watch/advisory/message dissemination by allowing for predefined routing along with the capability to METWATCH sites based on a wide range of weather coded phenomena. Along with the AWDS 3.4 software, GTE will install on all AWDS the latest Product Viewer

software, version 1.2. As with the previous version of Product Viewer, only those units with base LAN connectivity to their MP will be able to fully utilize this web server capability. Product Viewer 1.2 offers many improvements over the previous version. First, the user will have the option of viewing the Product Viewer web pages in either a Frames or Non-Frames format. Authorized users will also be able to retrieve, under the General Interest Weather Information section, the local base observation and forecast in a plain language format. One new capability all units will be able to use is the Terminal Aerodrome Forecast Verification data download capability. HQ AFWA/DN is developing a TAFVER program that will utilize this text file, allowing weather units to perform their own TAF verification. Other changes to Product Viewer include improved observation and forecast product listings under the Information for the Meteorologist section and corrections to minor problems identified in version 1.0.

In order to prepare for the installation, units are encouraged to review the Operational Impact Statement provided by GTE. Another good source of information about the software upgrade is the AWDS 3.4 Crossfeed, prepared by AWDS Tech Support, which is available for download from the AFWA bulletin board. If you have any questions about AWDS 3.4 or Product Viewer 1.2, please feel free to contact us at HQ AFWA/XPPM, DSN 576-3268, ext. 310.

Communications Lines Need to Keep Pace with New Weather Systems

by Maj. Linda McMillan, Chief, Mission Systems Branch
Directorate of Communications and Information

In previous *Observer* issues, you've read about the rapid changes in communication venues, such as Global Broadcast System, Non-classified Internet Protocol Router Network, and direct Very Small Aperture Terminal to receive your weather data requirements from. As the Air Force and Department of Defense move towards the PC platform to receive products, the communications backbone will remain the heart of weather data production cycle.

The Circuit Actions branch at Air Force Weather Agency, (Scott), remains the central repository for communications requirements worldwide. As rapid changes are made with the installation of the Meteorological Information Standard Terminal, you, the customer need to make sure you have complete information on the circuit that comes into your location, and which piece of equipment it hooks in to. Very soon, you will receive a survey from the Circuit Actions branch requesting complete information on your circuit ID, and equipment inventory supporting your weather mission.

When you receive your survey, it needs to be filled out in a timely and accurate manner. This information will be used to audit the current circuit database here at AFWA, (Scott). The new database will become the baseline, and this is the information that will transition up to AFWA, (Offutt), when the move is complete. As new equipment is installed, it may be in a different location than old equipment, and the base communications personnel may need to move the circuit to support it. This information becomes critical if there is ever a communications outage at your location. It helps communications personnel pinpoint the root of the outage in an expeditious manner, allowing you to return to normal operations much faster.

Weather Services

Weather services provided by the Air Force supply timely and accurate environment information, including both space environment and atmospheric weather, to commanders for their objectives and plans at the strategic, operational, and tactical levels. It gathers, analyzes, and provides meteorological data for mission planning and execution. Environmental information is integral to the decision process and timing for employing forces and planning and conducting air, ground, and space launch operations. Weather services also influence the selection of targets, routes, weapon systems, and delivery tactics, and are a key element of information superiority.

-- *Air Force Basic Doctrine, Sept. 97*

There may be more than one communications circuit coming into your location. If you currently have an eight letter circuit identifier for your AWDS loop, we need that information. If you have a NIPRNet drop you receive data on from the base local area network, the Internet Protocol address needs to be included on the survey as well. The difference in communications transmission means there are different help desks or troubleshooting procedures to follow to get your circuit up and running again, if it ever goes down.

The Circuit Actions branch is committed to providing customers timely communications access based on user requirements. So, please, when you receive your survey, take the time to fill it out accurately. If you need to, contact the Circuit Actions branch at Air Force Weather Agency, (Scott), at DSN 576-4732, ext. 700 or commercial 618-256-4731, ext. 700 if you have any questions about the survey, or need help identifying what is currently on record.

THE EYE OF THE STORM

by Capt. Andy White, Public Affairs Officer, Davis-Monthan Air Force Base, Ariz.

Capt. Derek West was moving almost as fast as Hurricane Linda when the call came asking if he could get to Tuscon to study the unique storm.



Capt. West in front of the aircraft in which he pursued and studied Hurricane Linda.

As a weather officer specializing in the study of hurricanes, this was the opportunity of a lifetime. West was working on a doctorate at Ohio State University in an Air Force Institute of Technology program when the Air Force asked him to go hunting, but he made it happen. For West, this mission was as important as the launch of any combat aircraft. The lessons he would learn chasing Hurricane Linda would play a key role in making such combat sorties possible in the future.

Military organizations have to be able to predict what weather systems will do well in advance of when they do it, West explained. "First, we have to accurately forecast weather at deployment sites so tasked units will be able to execute their tasking. Second, we have to accurately predict weather in the area of responsibility so we can employ the right weapons systems.

"We have to understand and anticipate global atmospheric conditions if we are going to globally project power," the captain said.

The Best of CLIMES... the Worst of CLIMES...

FIERCE INDOCTRINATION

by (ret.) Lt. Col. Roger H. Olson

In February 1943, a bunch of us second lieutenants, fresh faced and a few months out of MIT, arrived at Presque Isle Air Base, in Northern Maine, to receive training and indoctrination for later assignments to weather stations in Labrador, Newfoundland, Baffin Island, Greenland, Iceland, etc. The detachment commander at Presque was one Capt. Lynn T. Irish. He was known as one of the top forecasters in the North Atlantic area, and we stood in awe of him. But even he couldn't prevent us from the many and varied mistakes we were bound to make as we learned the intricacies of our craft; and the one I'm about to relay, in particular, was a doozy!

Several of us were on duty issuing routine forecasts. A typical east coast storm had just moved through; the winds were westerly; the skies were clearing; the barometer was rising; and we were fat, dumb, and happy.

When a cirrus cloud deck appeared out of the northwest, we didn't think much about it. We were calling for very good flying weather, so a little cirrus wasn't much of a problem. However, we became a bit concerned when the cirrus lowered and thickened into a heavy altostratus deck, which indicated an approaching warm front. When the first snow started falling, we knew something had gone seriously wrong, though I don't recall at what point we had gone astray in our forecast. The low had stopped east of us, but the fronts kept wrapping around. Soon the main front, which by this time was pretty well occluded, was bearing down on us from the northwest with the usual cloud and snow pattern of a pre-frontal situation. We didn't have the accompanying wind shift and pressure signature of a frontal passage, but all the bad stuff we hadn't anticipated did occur.

Luckily, I never saw quite this dramatic an event again in my three years of forecasting in the North Atlantic. However, there were plenty of other pitfalls we blossoming forecasters were destined to fall into, and I'm sure we all used these slips and blunders to sharpen the blades of our knowledge of the forecasting craft.

1200 FEET ABOVE GROUND ZERO

by (ret.) 1st Lt. Donald C. Schertz

In early November 1952, we were flying weather support out of the Kwajalein atoll for atomic testing. On one mission, our job was to fly over ground zero at 1200 feet and visually locate the three cameras being used to photograph the event, then verbally report our findings

over the radio. If we could not see all three cameras, the experiment was to be postponed. To our delight, on the very first attempt, we flew over the assigned location and could visually locate the three cameras. This condition was reported and the official go-ahead for the test was given.

We continued on course for approximately a minute before the explosion occurred. Being in the nose of the aircraft, and flying directly away from the blast, I don't remember seeing or hearing anything unusual; but shortly thereafter a large force accelerated the aircraft rapidly forward. I remember being thrust backward in my seat for several seconds. We continued flying away from the blast and landed without further incident.

I have flown in a B-17 Flying Fortress many times during bomb runs over Nazi Germany, and heard and felt 88 and 105 mortar shells exploding under our formations. Therefore, I have never understood why I didn't hear anything that day from this much more powerful atomic explosion. Nevertheless, it is a day and a flight I'll never forget.

Old Techniques Refuse to Die

by (ret.) Lt. Col. Roger H. Olson

Our meteorology war-time class at MIT graduated in 1942, and we started having reunions in 1989. At our Washington D.C. reunion, in 1994, we were invited to visit the National Weather Service Forecast Center. During a briefing given by a top administrator, we were told that we would see all the latest computerized technologies. To be sure, we were duly impressed by what we saw as we toured through the complexities of the center. The administrator warned us that those who had been forecasters back during WWII would find that some of our "old techniques," such as grease pencils on acetates, were as dead as doornails.

As we continued on from position to position, I noted that several tables were occupied by people feverishly drawing lines. On closer inspection, I discovered that all three tables were full of people drawing on acetate with grease pencils!

COMING SOON- **OBSERVER Almanac Issue**

SALUTES from Around the World

- AFW'S 1997 BEST OF THE BEST -

Outstanding Air Force Weather Company Grade Officer of the Year

1st Lt. Darryl N. Leon, HQ AF/XOOO, Washington, D.C.

Outstanding Air Force Weather Senior NCO of the Year

Master Sgt. James C. Minyon, 7th OSS/OSW, Dyess AFB, Texas

Outstanding Air Force Weather NCO of the Year

Tech. Sgt. Dennis P. Davis, AFCWC, Hurlburt Field, Fla.

Outstanding Air Force Weather Airman of the Year

Senior Airman Lisa M. Blackerby, 100 OSS/DOW, RAF Mildenhall AB, UK

Outstanding Air Force Weather Civilian of the Year

Mr. James Wainwright, Jr., 9th OSS/OSW, Beale AFB, Calif.

Outstanding Staff Support-Best Award, Officer Category

Maj. Kenneth S. Smith, 7th WS, Heidelberg, Germany

Outstanding Staff Support-Best Award, Civilian Category

Mark T. Surmeier, AFWA/DNXT, Scott AFB, Ill.

Outstanding Air Force Weather Forecaster-Pierce Award

Staff Sgt. Kurt R. Rohlf
47th OSS/OSW, Laughlin AFB, Texas

Outstanding Air Force Weather Observer-Dobson Award

Senior Airman Stephen E. Kochel, 3rd WS, Fort Hood ANG, Texas

Most Significant Technical Contribution-Merewether Award

Capt. Billy R. Venable, Capt. Robert T. Williams, Capt. Jennifer C. Roman, Tayna L. Spero, George A. Gayno, AFWA/DNXM, Offutt AFB, Neb.

Best Application of Climatology-Zimmerman Award

Melody L. Higdon, AFCCC/DOJ, Scott AFB, AFCCC/DOJ, Scott AFB, Ill.

Most Outstanding AFW Individual Mobilization Augmentee (IMA)-Spengler Award

Capt. Warren J. Madden, 88th WS/WEA, Wright-Patterson AFB, Ohio

Outstanding Base/Post Weather Station-Williams Award

5th OSS/OSW, Minot AFB, N.D.

Outstanding Specialized Weather Unit-Moorman Award

45th WS, Patrick AFB, Fla.

Outstanding Tactical Weather Unit-Grimes Award

10th CWS, Hurlburt Field, Fla.

CHIEF MASTER SGT. SELECTEES

Steven R. Meyer, Kelly AFB, Texas
Steven W. Ruch, Langley AFB, Va.
Scott D. Weber, Heidelberg, Germany
Michael A. Zimmer, Yongsan, Korea

AIR FORCE MERITORIOUS SERVICE MEDAL

Master Sgt. Ronald S. Kommer, Jr., HQ ACC/DOW, Langley AFB, Va.
Lt. Col. Terry G. Lintz, HQ AFWA, Offutt AFB, Neb.
Maj. Michael McDonald, HQ AFWA, Offutt AFB, Neb.
2nd Lt. Steven E. Gifford, HQ AFWA, Offutt AFB, Neb.
Senior Master Sgt. Terry F. Harris, HQ AFWA, Offutt AFB, Neb.
Master Sgt. Paul A. Strickler, HQ AFWA, Offutt AFB, Neb.

Master Sgt. Israel Laracuent, Jr., HQ AFWA, Offutt AFB, Neb.
Master Sgt. Doug Rishel, HQ AFWA, Offutt AFB, Neb.
Maj. Jeff Bernard, Travis AFB, Calif.
Senior Master Sgt. Frank Hall (3rd OLC), 16th OSS/DOW, Hurlburt Field, Fla.
Master Sgt. Tony Humphrey (1st OLC), ACC AOS/AOW, Langley AFB, Va.

AIR FORCE COMMENDATION MEDAL

Capt. Scott A. Hausman, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. John M. Lamb, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Michael D. Buchanan, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Becky Jones, HQ AFWA, Offutt AFB, Neb.
Senior Airman Jeffrey R. Wells, HQ AFWA, Offutt AFB, Neb.
2nd Lt. Philip Poyner, ACC AOS/AOW, Langley AFB, Va.
Staff Sgt. Dorothy Posey, ACC AOS/AOW, Langley AFB, Va.

ARMY COMMENDATION MEDAL

Staff Sgt. Alexander Hubert (1st OLC), 16th OSS/DOW, Hurlburt Field, Fla.

AIR FORCE ACHIEVEMENT MEDAL

Senior Airman Richard M. Fletcher, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Thomas M. Toth, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. Todd C. Heath, HQ AFWA, Offutt AFB, Neb.
Tech Sgt. Robert J. Poulin, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Richard L. Edwards, HQ AFWA, Offutt AFB, Neb.
Senior Airman Henry Roberts, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Allen M. Souders, HQ AFWA, Offutt AFB, Neb.
Senior Airman Richard Fletcher, HQ AFWA, Offutt AFB, Neb.
Senior Airman Elliot Brothers, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Timothy E. Webb, HQ AFWA, Offutt AFB, Neb.
Lt. Ed Goetz, Dragon Flight, 18th WS, Fort Bragg, N.C.
Master Sgt. Mike Przybysz, Dragon Flight, 18th WS, Fort Bragg, N.C.
Tech. Sgt. Richard Compton, Dragon Flight, 18th WS, Fort Bragg, N.C.
Tech. Sgt. Randy Johnson, Dragon Flight, 18th WS, Fort Bragg, N.C.
Staff Sgt. Steve Straight, Dragon Flight, 18th WS, Fort Bragg, N.C.
Staff Sgt. Frank Accomando, OL-B, 18th WS, Fort Eustis, Vg.
Senior Airman Brenda Graves, OL-B, 18th WS, Fort Eustis, Vg.

ARMY ACHIEVEMENT MEDAL

Staff Sgt. Carlton W. Hatfield, OL-A, 18th WS, Fort Belvoir, Va.

AIR FORCE GOOD CONDUCT MEDAL

Staff Sgt. Michael Chavis, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Dory L. Hasson, HQ AFWA, Offutt AFB, Neb.
Master Sgt. Gary W. Moore, HQ AFWA, Offutt AFB, Neb.
Senior Airman Charles W. Perry, HQ AFWA, Offutt AFB, Neb.

NATO MEDAL

Tech. Sgt. Katherine A. Zupan, OL-A, 18th WS, Fort Belvoir, Va.

JOINT SERVICE ACHIEVEMENT MEDAL

Capt. Jeff Lorens, ACC AOS/AOW, Langley AFB, Va.

PROMOTIONS

Major
Lawrence S. Miller, 125th WF, Tulsa, Okla.
Jeffrey L. Peters, 165th WF, Louisville, Ky. (ANG)
Paul G. Witsaman, 165th WF, Louisville, Ky. (ANG)
Jeff Lorens, ACC AOS/AOW, Langley AFB, Va.

Captain

Jaelyn T. Patton, 16th OSS/DOW, Hurlburt Field, Fla.

Master Sergeant

Alan D. Free, HQ AFWA Operational Support Facility, Norman Okla.
Robert L. Hirl, HQ AFWA, Offutt AFB, Neb.
David S. Gogian, 127th WF, Forbes Field, Kan. (ANG)
David J. Oginski, 127th WF, Forbes Field, Kan. (ANG)
James Brock, 6th WF, Fort Rucker, Ala.

Technical Sergeant

Becky L. Jones, HQ AFWA, Offutt AFB, Neb.
Daniel W. Radebaugh, HQ AFWA, Offutt AFB, Neb.
John Leurek, ACC AOS/AOW, Langley AFB, Va.
Mitchell French, 305th OSS/OSW, McGuire AFB, N.J.

Staff Sergeant

M. Lynn Pettitt, 62nd OSS/OSW, McChord AFB, Wash.
David A. Gore, HQ AFWA, Offutt AFB, Neb.
Christopher E. Hahn, HQ AFWA, Offutt AFB, Neb.
John Zanfardino, HQ AFWA, Offutt AFB, Neb.
Roger Anderson, HQ AFWA, Offutt AFB, Neb.

Senior Airman

Rosswald Guevarra, 45th WS/CC (AFSPC), Patrick AFB, Fla.
Stacey Rawlinson, 42nd OSS/OSW, Maxwell AFB, Ala.
Erica English, 42nd OSS/OSW, Maxwell AFB, Ala.
Tashia Brandenburg, HQ AFWA, Offutt AFB, Neb.
Tiffany Y. Greene, 200th WF, Richmond, Va. (ANG)
Robert W. Vondohlen, 209th WF, Camp Mabry, Texas (ANG)
Cecil F. Kelly, OL-B, 18th WS, Fort Eustis, Va.
Donnetta B. Walker, OL-B, 18th WS, Fort Eustis, Va.
Terrence Smiley (BTZ), 52nd OSS/OSW, Spangdahlem AB, Germany
Sean Bryan (BTZ), 52nd OSS/OSW, Spangdahlem AB, Germany
Mare Hutcheson, 305th OSS/OSW, McGuire AFB, N.J.

HAILS AND FAREWELLS

1st Lt. Deann M. Emery - to Fort Stewart, Ga., from 62nd OSS/OSW, McChord AFB, Wash.
Capt. Thomas C. Moore - to 4th OSS/OSW, Seymour Johnson AFB, N.C., from Brooks AFB, Texas
Airman 1st Class Katrina Blanchard - to 4th OSS/OSW, Seymour Johnson AFB, N.C., from Keesler AFB, Miss.

Airman Joseph W. Casey - to 4th OSS/OSW, Seymour Johnson AFB, N.C., from Keesler AFB, Miss.

1st Lt. Brian A. Schnitker - to 1st WS, Fort Lewis, Wash., from 4th OSS/OSW, Seymour Johnson AFB, N.C.

Senior Airman June Ramsdell - to separation, from 45th WS/CC (AFSPC), Patrick AFB, Fla.

Airman Jewelette Frye - to 314th OSS/OSW, Little Rock AFB, Ark., from Keesler AFB, Miss.

Airman 1st Class Gerald T. McPherson - to Enrique Soto, Honduras, from 16th OSS/DOW, Hurlburt Field, Fla.

Airman 1st Class Nathan Bailie - to 42nd OSS/OSW, Maxwell AFB, Ala., from Keesler AFB, Miss.

Senior Airman Eric Jackson - to Howard AB, Panama, from Altus AFB, Okla.

Airman Johnny Flores - to 97th OSS/DOW, Altus AFB, Okla., from Keesler AFB, Miss.

Airman 1st Class Ashley Mahmood - to Camp Humphreys, Korea, from 97th OSS/DOW, Altus AFB, Okla.

Master Sgt. Harry Druckenmiller - to Charleston AFB, N.C., from HQ AFWA, Offutt AFB, Neb.

Senior Airman Andre Otte - to HQ AFWA, Offutt AFB, Neb., from McClellan AFB, Calif.

Capt. Paul K. Helmbrecht - to 126th WF, Milwaukee, Wis., from 121st WF, Andrews AFB, Md. (ANG)

Capt. Karen S. Norris - to 131st WF, Westfield, Mass., from 509th OSS/OSW, Whiteman AFB, Mont. (ANG)

Senior Airman Morris - to OL-C, 18th WS, Fort Knox, Ky., from Keesler AFB, Miss.

Senior Airman Margit Carson - to 6th WS, Fort Rucker, Ala., from Keesler AFB, Miss.

Senior Airman Lori Evans - to OL-B, 18th WS, Fort Eustis, Va., from Kunsan AB, ROK

Senior Airman Brenda Graves - to 6th WS, Fort Rucker, Ala., from Keesler AFB, Miss.

Capt. Jaelyn Patton - to 16th SOW/CP, Hurlburt Field, Fla., from 16th OSS/DOW, Hurlburt Field, Fla.

Tech. Sgt. Carol Anderson - to Combat Weather Center, Hurlburt Field, Fla., from 16th OSS/DOW, Hurlburt Field, Fla.

Senior Airman Angela Zephier - to 334th TRS, Keesler AFB, Miss., from 16th OSS/DOW, Hurlburt Field, Fla.

Airman Teresa Pence - to 9th OSS/OSW, Beale AFB, Calif., from Keesler AFB, Miss.

Senior Airman Libby Hawes - to 305th OSS/OSW, McGuire AFB, N.J., from Japan

Master Sgt. Lewis Altman, to 18th WS, Fort Bragg, from Germany

Staff Sgt. Charles Monk, to Korea, from 6th WF, Fort Rucker, Ala.

Staff Sgt. Jason D. Macartney, to Patrick AFB, Fla., from OL-C, 18th WS, Fort Knox, Ken.

Senior Airman Valerie Wynn, to Keesler AFB, Miss., from OL-C, 18th WS, Fort Knox, Ken.

Senior Airman Jason Bradt, to Simmons Flight, 18th WS, Fort Bragg, N.C., from Keesler AFB, Miss.

Senior Airman Brian Burch, to 6th WF, Fort Rucker, Ala., from Keesler AFB, Miss.

EDUCATION

CCAF Degree with an AAS in Weather Technology

Tech. Sgt. Ernest J. Luoma, 12th OSS/OSW, Randolph AFB, Texas

Airman Leadership School

Senior Airman Emily J. Gleason, 12th OSS/OSW, Randolph AFB, Texas

Senior Airman Paul Walker, 97th OSS/DOW, Altus AFB, Okla.

Senior NCO Academy

Master Sgt. Timothy Kearns, ACC AOS/AOW, Langley AFB, Va.

NCO Academy

Tech. Sgt. Patrick Barcelona, 62 OSS/OSW, McChord AFB, Wash.

Tech. Sgt. Lance Halsey, ACC AOS/AOW, Langley AFB, Va. (Distinguished Graduate)

Tactical Forecast System Training

Staff Sgt. Alan Wortkoetter, 62nd OSS/OSW, McChord AFB, Wash.

AWDS System Manager School

Senior Airman Denzor Richberg, 62nd OSS/OSW, McChord AFB, Wash.

Senior Airman Michelle Alexander, 16th OSS/DOW, Hurlburt Field, Fla.

Senior Airman Eric Jackson, 97th OSS/DOW, Altus AFB, Okla.

Staff Sgt. Tony Savvedra, 97th OSS/DOW, Altus AFB, Okla.

Small Tactical Terminal Training

Master Sgt. John Galliano, 62nd OSS/OSW, McChord AFB, Wash.

Tech. Sgt. Gordon Girven, 62nd OSS/OSW, McChord AFB, Wash.

Tech. Sgt. Patrick Barcelona, 62nd OSS/OSW, McChord AFB, Wash.

Staff Sgt. Dan Nelson, 62nd OSS/OSW, McChord AFB, Wash.

Senior Airman Denzor Richberg, 62nd OSS/OSW, McChord AFB, Wash.

Airman 1st Class Lance Stringham, 62nd OSS/OSW, McChord AFB, Wash.

Weather Apprentice Course (Class 970805)

Staff Sgt. Gregg D. Humphries (Distinguished Graduate)

Senior Airman Craig S. Towison (Distinguished Graduate)

MSTI Richard S. Hooker (Coast Guard Petty Officer 1st Class)

Senior Airman Lara D. Owczarski

Senior Airman Erick A. Pedicone

Senior Airman Christopher D. Smith

Airman 1st Class Jody M. Ball

Airman Patrick J. Brennan

Airman Kristin A. Kenzler

Airman Basic Christopher P. Bertucci

Weather Apprentice Course (Class 970722)

Senior Airman Edward Puttbresce, Jr. (Distinguished Graduate)

Senior Airman Danny Lopez

Airman 1st Class Shaun Autrey

Airman 1st Class Andrew Hopkins

Airman Basic Michael Anderson

Weather Apprentice Course (Class 970715)

Staff Sgt. Daryl S. Gibson (Distinguished Graduate)

Senior Airman Justin Hinman (Distinguished Graduate)

Coast Guard Chief Petty Officer John Matheson

Staff Sgt. Byron Coulter

Staff Sgt. Ceason Webb

Senior Airman Charles Holloway

Airman Robert Copley

Airman Melanie Douglas

Airman Basic Brett Barton

Airman Basic Joseph Sigafos, Jr.

Weather Apprentice Course (Class 971118)

Senior Airman Terry M. Prime

Staff Sgt. Frederick G. Comstock

Senior Airman Jeremiah Beckmann

Airman 1st Class Burton C. Connor

Airman 1st Class Gerber L. Lopez

Airman 1st Class Tonya D. Underwood

Airman Frederick D. Demming

Airman Dulia M. Mora

Airman Angel R. Portocarrero

Airman Daniel E. Snyder

Forecaster Course (Class 970528)

Staff Sgt. David Cook, to Little Rock AFB, Ark.

Senior Airman Melvin Barnhill, to Fort Polk, La.

Senior Airman Scott Lorincez, to Shaw AFB, S.C.

Forecaster Course (Class 970514)

Senior Airman Lori Evans, to Fort Rucker, Ala.

Senior Airman Douglas Jennings, to Minot AFB, N.D.

Staff Sgt. Anthony Natale, McGuire AFB, N.J.

Senior Airman John Whitehead, Minot AFB, N.D.

WSR-88D (NEXRAD) School

Tech. Sgt. Bob Kane, 45th WS/CC (AFSPC), Patrick AFB, Fla.

Staff Sgt. Alexander Hubert, 16th OSS/DOW, Hurlburt Field, Fla.

Meteorological Satellite School

Staff Sgt. James Heinrich, 45th WS/CC (AFSPC), Patrick AFB, Fla.

Staff Sgt. Alexander Hubert, 16th OSS/DOW, Hurlburt Field, Fla.

Senior Airman Michelle Alexander, 16th OSS/DOW, Hurlburt Field, Fla.

Staff Sgt. Bob Chauvin, 97th OSS/DOW, Altus AFB, Okla.

Staff Sgt. Lyle Tayler, 305th OSS/OSW, McGuire AFB, N.J.

Self Aid and Buddy Care Instructor Course

Airman 1st Class Matthew Jones, 16th SOW, Hurlburt Field, Fla.

Weather Officer Course

2nd Lt. Ginger Pohlman, 305th OSS/OSW, McGuire AFB, N.J.

AWARDS

334th Weather Training Flight NCO of the Quarter (Oct.-Dec.)

Tech. Tsgt. David Johnson, 334th Training Flight, Keesler AFB, Miss.

334th Weather Training Flight Senior NCO of the Quarter (Oct.-Dec.)

Master Sgt. Jerry Farley, 334th Training Flight, Keesler AFB, Miss.

334th Weather Training Flight Civilian of the Quarter (Oct.-Dec.)

Michael Beeson, 334th Training Flight, Keesler AFB, Miss.

334th Weather Training Flight Jr. Enlisted Instructor of the Quarter (Oct.-Dec.)

Staff Sgt. Larry McCoy, 334th Training Flight, Keesler AFB, Miss.

334th Weather Training Flight CGO of the Quarter (Oct.-Dec.)

Capt. Christopher Donahoe, 334th Training Flight, Keesler AFB, Miss.

334th Weather Training Flight Sr. Enlisted Instructor of the Quarter (Oct.-Dec.)

Master Sgt. David Brann, 334th Training Flight, Keesler AFB, Miss.

12th Operations Group and 12th Operations Support Squadron Senior NCO of the Quarter (July-Sept. 97)

Master Sgt. Curtis P. Cote, 12th OSS/OSW, Randolph AFB, Texas

12th Operations Group and 12th Operations Support Squadron Senior NCO of the Quarter (July-Sept. 97)

Staff Sgt. Jimmy R. Odum, 12th OSS/OSW, Randolph AFB, Texas

45th Weather Squadron and 45th Operations Group CGO of the Quarter (Jul.- Sept. 97)

Capt. Julia Borowiak, 45th WS/CC (AFSPC), Patrick AFB, Fla.

45th Weather Squadron NCO of the Quarter (Jul. - Sept. 97)

Staff Sgt. Dean Harpster, 45th WS/CC (AFSPC), Patrick AFB, Fla.

45th Weather Squadron Airman of the Quarter (Jul. - Sept. 97)

Airman 1st Class Heather Petet, 45th WS/CC (AFSPC), Patrick AFB, Fla.

Senior Level Civilian of the Quarter (Jul. - Sept. 97)

Edward Priselac, 45th WS/CC (AFSPC), Patrick AFB, Fla.

45th Weather Squadron, 45th Operations Group, and 45th Space Wing Military Volunteer of the Quarter (Jul. - Sept. 97)

Senior Master Sgt. George Strohm, 45th WS/CC (AFSPC), Patrick AFB, Fla.

Air Force Outstanding Unit Award (1 July 95 - 31 March 97)

314th OSS/OSW, Little Rock AFB, Ark.

3rd ASOS Airman of the Quarter (July - Sept. 97)

Senior Airman Antonio Pressley, 3rd ASOS, Fort Wainwright, Alaska

US Army Forces Command DCSINT Soldier of the Quarter (April - June 97)

Major Mary Martino, 2nd Weather Flight, Fort McPherson, Ga.

US Army Forces Command DCSINT Soldier of the Quarter (July - Sept. 97)

Tech. Sgt. Rudy Tingelhoff, 2nd Weather Flight, Fort McPherson, Ga.

42nd OSS/OSW Airman of the Quarter

Senior Airman Ralph Parker, 42nd OSS/OSW, Maxwell AFB, Ala.

42nd OSS/OSW NCO of the Quarter

Tech. Sgt. Robert St. John, 42nd OSS/OSW, Maxwell AFB, Ala.

42nd OSS/OSW Forecaster of the Month

Senior Airman Alula Berhane, 42nd OSS/OSW, Maxwell AFB, Ala.

42nd OSS/OSW Observer of the Month

Airman Jerry Bingham, 42nd OSS/OSW, Maxwell AFB, Ala.

97th OSS/DOW Airman of the Quarter

Senior Airman Eric Jackson, 97th OSS/DOW, Altus AFB, Okla.

DEPLOYMENTS

Tech. Sgt. Ramon Salmon, 62nd OSS/OSW, McChord AFB, Wash., to Al Jaber, Kuwait, Operation Southern Watch (June 97 - Oct. 97)

Staff Sgt. Keith Campbell, 62d OSS/OSW, McChord AFB, Wash., to Italy, Operation Joint Guard (Sept. 97 - Dec. 97)

Staff Sgt. Karl Kolumban, 62nd OSS/OSW, McChord AFB, Wash., to Saudi Arabia, Operation Southern Watch (Oct. 97 - Feb. 98)

Senior Airman Lonnie Clute, 62nd OSS/OSW, McChord AFB, Wash., to Taszar, Hungary, Operation Joint Guard (Oct. 97 - Feb. 98)

Senior Airman Jamie Ridpath, 16th OSS/DOW, Hurlburt Field, Fla., to Brindisi, Italy

Staff Sgt. Dave Tyler, 3rd ASOS, Fort Wainwright, Alaska, to Al Jabber, Kuwait

Tech. Sgt. Keith Wagner, 2nd Weather Flight, Fort McPherson, Ga., to Operation Joint Guard

Staff Sgt. Frank Klein, 16th OSS/DOW, Hurlburt Field, Fla., to Brindisi, Italy

Tech. Sgt. William Andrus, 16th OSS/DOW, Hurlburt Field, Fla., to JRX 98-1

Senior Airman Marty Gameon, 16th OSS/DOW, Hurlburt Field, Fla., to JRX 98-1

Airman 1st Class Jason Beyer, 16th OSS/DOW, Hurlburt Field, Fla., to JRX 98-1

Airman Daniel Jones, 16th OSS/DOW, Hurlburt Field, Fla., to JRX 98-15

SEPARATIONS

Sgt. Steve R. Bell, 16th OSS/DOW, Hurlburt Field, Fla.

Airman Rhonda R. Adams-Caswell, 16th OSS/DOW, Hurlburt Field, Fla.

Staff Sgt. James D. Anderson, 2nd Weather Flight, Fort McPherson, Ga.

Staff Sgt. Kenneth P. Alarie, HQ AFWA, Offutt AFB, Neb.

RETIREMENTS

Lt. Col. Terry G. Lintz, HQ AFWA, Offutt AFB, Neb.

Senior Master Sgt. Terry F. Harris, HQ AFWA, Offutt AFB, Neb.

Tech. Sgt. Linda Lindsay, HQ AFWA, Offutt AFB, Neb.

Master Sgt. Israel Lar uente, HQ AFWA, Offutt AFB, Neb.

Maj. Jeff Bernard, 615th AMDG/DOMW, 5 Travis AFB, Calif.

Master Sgt. Toni Humphrey, ACC AOS/AOW, Langley AFB, Va.

Tech. Sgt. Dave Bessey, Dragon Flight, 18th WS, Fort Bragg, N.C.

MARRIAGES

Senior Airman Joanna Broadway, 4th OSS/OSW, Seymour Johnson AFB, N.C., to Terry Broadway

Capt. Julia Borowiak to **Capt. John Black**, 45th WS/CC (AFSPC), Patrick AFB, Fla.

Airman 1st Class Jerrod Webb, 314th OSS/OSW, Little Rock AFB, Ark., to Monica May

Senior Airman John D. Lee, 16th OSS/DOW, Hurlburt Field, Fla., to Janene Lee

Tech Sgt. Rudy Tingelhoff, 2nd Weather Flight, Fort McPherson, Ga., to Heidi Shanafelt

Staff Sgt. Colleen Haskell and **Staff Sgt. David S. Decker**, both of the 207th WF, Indianapolis, Ind.

BIRTHS

Sarah Michelle, to **Senior Airman Angela** and **Marty Zephier**, 16th OSS/DOW, Hurlburt Air Field, Fla.

