Observer

The Magazine for Air Force Weather

Sep/Oct '03

18th WS, Det. 1

A Combat Weather Team
at home on land and at sea

Predator Weather

Weather as the new "Co-Pilot"

Observer

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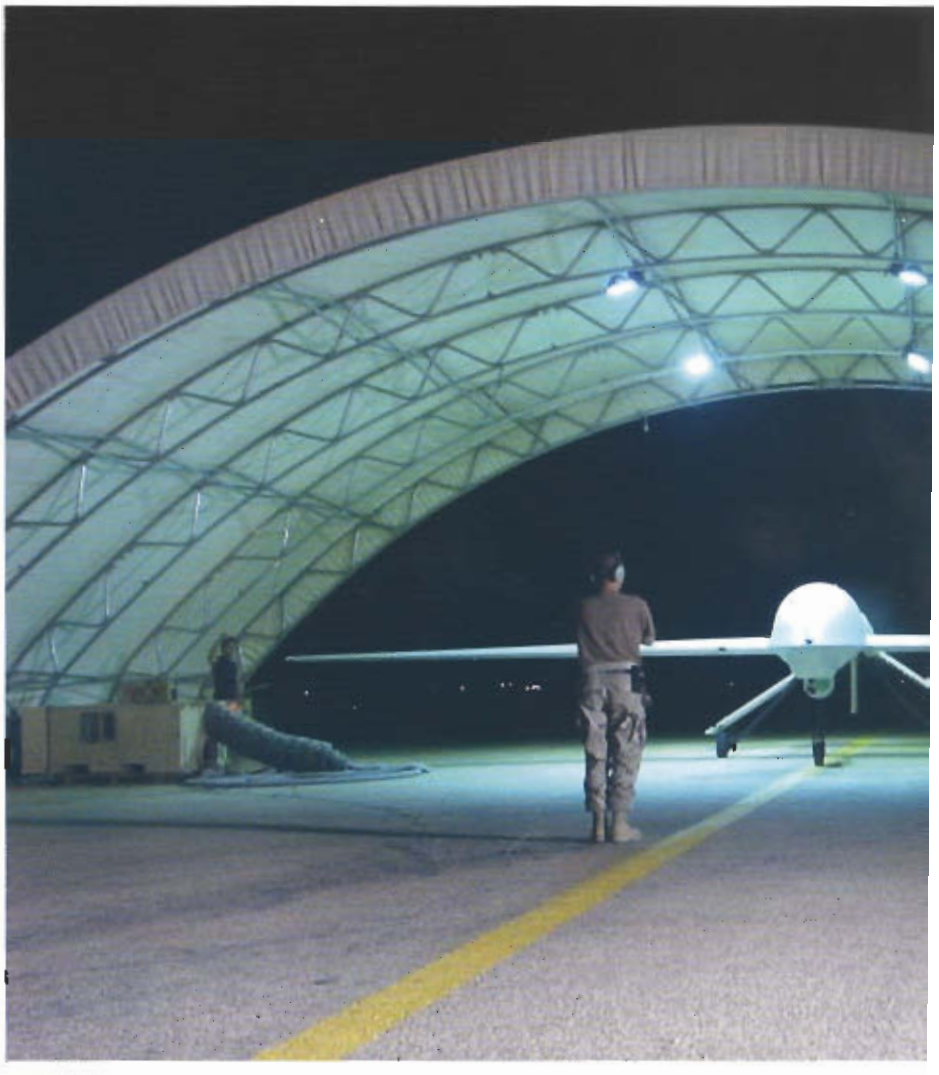
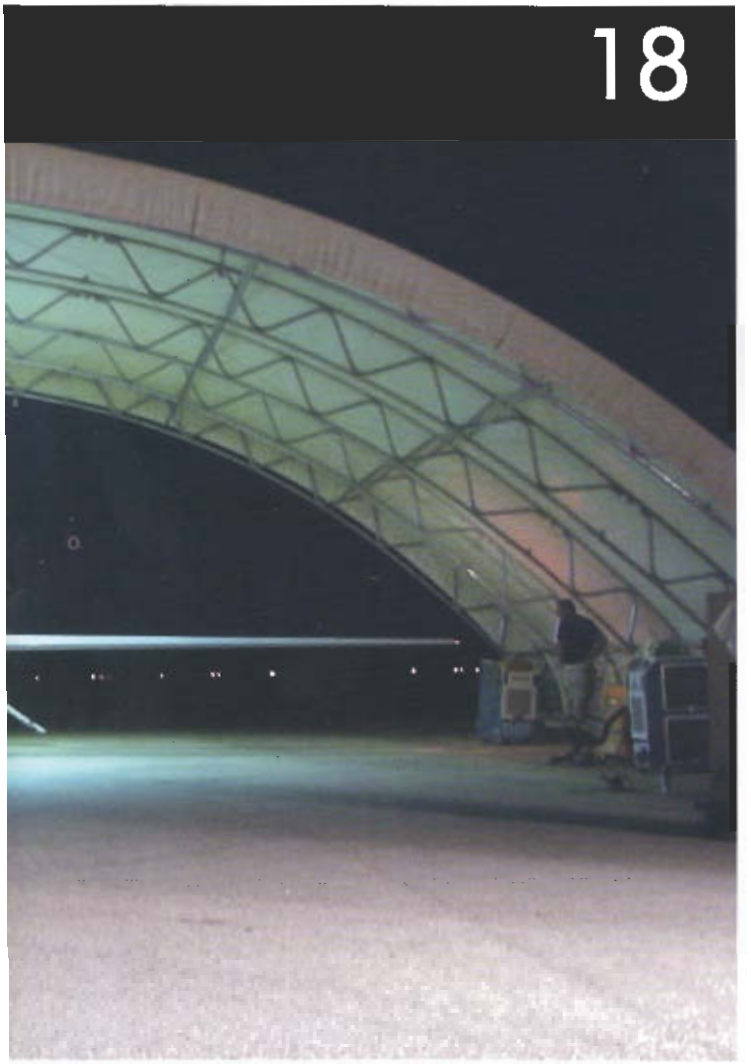
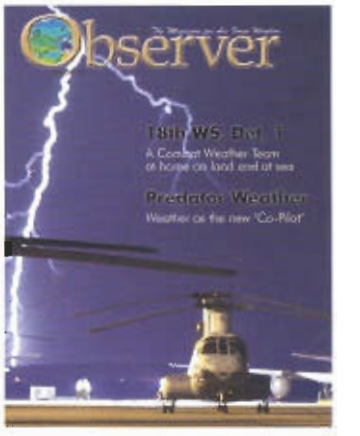




On the Cover

Lightning strikes on the ground behind the flightline at Edwards AFB, Calif., during a thunderstorm Sept. 3. During the storm, power in some areas of the base was interrupted for a few minutes. *Air Force photo by James Shryne.*



Chief's Mentoring:

Innovative solutions are the answer

By Chief Master Sgt. Jeff Fries
AFWA Field Operations Manager

When I was asked to write a "few words" for this edition of the Observer magazine, discussing the linkage of leadership to innovation and success came directly to mind. One of the most rewarding parts of my current Air Force job as a Field Operations Manager is having the opportunity to visit many units and spend time with folks facing the tough challenge of building successful organizations from the ground up.

I've seen many examples of fantastically successful practices and unfortunately some failures along the way; both ends of the spectrum have provided an opportunity to examine leadership styles that contributed to the success or failure of an endeavor.

Looking back over the last five years, it is pretty safe to say we have all been participants in a sweeping and fundamental change to the way we do our business. Some have gone along willingly while others dug in and left twin boot heel marks on the road of progress. Although we've accomplished many of things we set out to do in our reengineering effort, the upcoming transformation of the Defense Department is sure to provide another opportunity to build on our current foundation and move in new directions. I know that placing words like "change" and "opportunity" in the same sentence is guaranteed to make some folks uncomfortable. For many, change is viewed as painful, difficult, uncertain and therefore something to be avoided. Leaders are needed for what will be seen by many as difficult times to come.

The historian Toynbee noted that people fall into four general patterns of behavior under difficult circumstances:

1- Retreat into the past
2- Daydream about the future
3- Retreat within and wait for someone to rescue them
4- Face the crisis and transform it into something useful

There are plenty of examples of the first three patterns of behavior being institutionalized. Quiz time; answer these questions:

Are you in a CWT that still analyzes synoptic charts?
Does the forecast come from "those guys?" (Not MY forecast)
Do you have a forecast counter?
Does your duty schedule include an "observer?"
Have you heard someone in your unit say "...soon as someone shows us how to do this here MEF thing...we'll go right out and do it."

If you can answer "Yes" to most or all of these questions, it's safe to say that the work environment is ripe for a change. I encourage you to shift your perspective and overcome the first three behavior trends in Toynbee's list by adopting an enlightened leadership style that powers the shift from the "crisis phase" to the "something useful" state of being. How is this environment created? Promote risk taking, accept the potential for failure as the cost of tackling a situation, learn from mistakes, and most importantly, empower the people willing to accept the challenge.

Why be innovative?

I'm sure you've heard the term *resource constrained environment*. This is a seemingly harmless way to describe long to mid-term situations where demand exceeds supply. Shortages of any of the "big three" finite resources – people, money, and time – make life difficult. A chronic shortage in personnel and money is rarely accompanied by a corresponding decrease in mission requirements, so we all assume the warrior mentality and valiantly "do more with less."

Doing more with less is usually accomplished by working longer and harder, which chews into the last of the finite resources – time. Soon, we find ourselves "running out of time to train" and other destructive symptoms of the do more with less syndrome. The long-term implications of failing to train and sustain the force cannot be understated. Creative leadership is required to break the "more with less" cycle and adopt a "work smarter - not harder" attitude. This can be done by developing innovative and efficient processes or shedding legacy paradigms to focus on those things absolutely critical to the end user of the environmental information we provide.

Today's operational structure favors innovation and creative thinking, especially in the CWT. The Air Force guidance for the weather career field is structured to ensure a high degree of standardization at the strategic and operational level weather centers with a total focus on operator needs at the tactical level. A high degree of standardization is necessary at the top of the funnel to ensure field units operate with full understanding of

the products and there is no learning curve when moving from OWS region to region.

The CWTs need to know that all the products are of a uniform high quality; forecasts for CENTCOM have the same look, feel, specification, and amendment criteria as the products in PACOM or the CONUS. Here in the Field Support Division, we're often asked what a MEF looks like for a certain type of unit (fighter, tanker, armor, airborne...pick one). There is no set definition of the format for the product set for your operational end user, there are guidelines on process but the end user determines the look and feel. Building "flimsies" and putting them on the web for all to see is a first step because your customers grow accustomed to having weather products pushed at them, but this is far from the last word. The key to success is learning what constitutes "decision grade" information to your parent or host unit – the form and format will grow from there.

Here's an example: Air Mobility Command is home to two of the finest examples of combat weather teams developing innovative processes and products to meet mission needs. The Global Mobility Weather Flight attached to the Tanker Airlift Control Center at Scott AFB, Ill., and the 319th Operations Support Squadron Weather Flight at Grand Forks AFB, N.D., were both faced with significant challenges (on different scales) and achieved amazing results by having the courage to build from scratch, empower the individual, involve their customers in the development process, and make use of any technological advantage they could find.

The Grand Forks CWT got in on the ground floor of an initiative to shorten aircrew duty days and used successes in this project as a springboard to develop new processes, procedures and products to enable the 319th to fully exploit weather information for their flying and non-flying missions. They've developed a tool kit that focus technicians on successful product tailoring techniques based on regimes and mission criteria. They use their customer's flight planning system to input weather information into the decision making process. Interestingly, the form and function of the weather service ended up being quite different from what they envisioned when they first took on the project. They work smart by focusing their acrivities on those things of greatest interest to their parent unit.

The Global Mobility Weather Flight was faced with the challenge of providing integrated command, control, and execution weather for more than 700 daily missions in a *resource constrained environment*. They adopted a risk management strategy that ensures maximum emphasis on the missions where a weather input will increase the chances of mission success. They also identify missions in the planning phase for special attention and track the mission until it's no longer at risk to ensure weather information is maximized in executing the mission. They work smart by focusing activities, but they've also embraced technologies that let machine-to-machine interfaces with human oversight populate the aircrew's mission papers. There is no stand-alone weather box feeding data to someone stuffed in a corner. The weather flight is imbedded in the decision making processes and their tools are resident in the AMC command and control system for everyone to use.

These are just a couple examples of innovative solutions to our common problems and surely not the only ones. We're fortunate in the weather community to be loaded with talented, intelligent, and motivated people ready to take on difficult situations and turn them to advantage. I've learned a couple of things along the way that I'd like to share as you set up your path to operational success:

Do your homework. I think it was Thomas Edison who said that an afternoon at the library was worth more than a week in the lab. Take the time to conduct basic research, observe your customer in action and take notes.

Empower the people working the solutions – seek empowerment from above. Empowerment broadens the ownership base for the problem solving effort, increases self-esteem of the empowered individual, and develops the next generation of leaders. If you are not empowering the worthy people in your organization, you short- change both yourself and them as well.

Don't work in a vacuum. It's far too easy to focus on a subject and lose sight of the rest of the world. Be sure to maintain contact with customers and network with people in similar circumstances. I've learned an awful lot in life from the experiences of others; be sure to share both the successes and failures with your network.

Rapid prototype. Rapid prototyping works best with a willing audience, so select a change friendly group and work out the bugs before widening your audience. Rapid prototyping also works away from the bureaucratic minefield. Measure your performance while in the prototype phase and make decisions based on the data.

Don't be afraid to fail. Many a great idea dies a premature death for fear of the failures along the path from concept to reality. I was reminded one time by a really smart guy, whom I admire, not to lose sight that one of our core values is "excellence in all we do" and not "perfection in all we do." This shows a fundamental understanding that failure is at times the cost of making progress. When faced with a failure, what matters most is to maintain accountability, analyze the reason(s) for the failure, determine if the failure is total or can you apply corrective actions, and press on.

Don't Quit. This can be easier said than done. An important part of empowering others is keeping the faith and encouraging them to persevere through the rough spots. I've felt like throwing in the towel at least once during the course of just about any big project I've ever worked. Recognize when others may have reached that point and help them. Sometimes taking a day or two away from the project is all that is needed.

Reinforce the changes at the end of the prototyping phase. Once you've worked out the bugs, it's time to dust off the staff summary sheet, finalize the SOP and use a metric to track performance. Perform these necessary steps to harden in the change and make yesterday's radical prototype tomorrow's norm.

I'll close with a reminder that success is contagious. Bask in the warm glow of success long enough to prepare for the next challenge and then get back out there. Y

This Pilot's Serious about Weather

Master Sgt. Jorge Benavides Jr., USAFE Operational Weather Squadron, Sembach AB, Germany, records his television weather show for AFN in Europe. *Photo by 2nd Lt. Nicole Dubnicay.*

By 2nd Lt. Nicole Dubnicay
American Forces Network Public Affairs

Balancing work, family, volunteering, and extra-curricular activities, Master. Sgt. Jorge Benavides Jr., manages to get it all done. You may recognize him as the American Forces Network weatherman serving a Europe-wide audience of about 344,000 military and civilian members. What you may not realize is that Benavides started in Air Force Weather by chance, and he has worked his way to the top.

Benavides reports the weather in what some would assume is a Brooklyn accent, but he was actually born in Cardenas, Cuba. His family moved to the United States to escape the communist regime when he was three years old. After graduating high school Benavides started flying lessons at the local regional airport, and flew his first solo flight at age nineteen.

Born in Cuba, but raised in the Unites States, Benavides felt patriotism and the desire to serve his country. His love of airplanes and flying enticed him to join the Air Force. He enlisted in January of 1983 and earned his private pilot's license.

Finally flying on his own, Benavides was about to experience a life altering moment that would also lead to a major change in his career. It was a beautiful day, one especially perfect for flying. He called to consult the weather like all pilots should before taking flight, but the forecaster warned of poor weather conditions in the area. Benavides said, "It was such a nice day I didn't believe what the forecaster reported." As predicted, the weather took a turn and his plane ran into an area of severe turbulence, causing him to lose control of the plane for several minutes.

"It was so violent I just wanted to get out of the aircraft, you couldn't imagine how violent it was. I swear I saw my life flash before my eyes," said Benavides.

Fortunately he regained control of the aircraft and safely returned to base. Having earned a new respect for the elements and for weather forecasting, Benavides decided that meteorology was something he had to do. The next day he began inquiring about Air Force Weather positions and promptly cross-trained into the weather Air Force specialty.

Benavides began his involvement with military broadcasting as a television weather forecaster while assigned to Howard AFB, Panama, from 1995 to 1999. Southern Command Network, the military broadcast network in Panama, asked his unit if anyone wanted to volunteer to do television weather forecasting. Benavides said, "Nobody wanted to do it because it was an extra four hours some days." Before he was allowed to appear on-air, he was required to complete four months of training. Finally ready to hit the network, he provided military members and their families live weather reports for four years until changing duty stations in 1999.

Currently working for the USAFE Operational Weather Squadron at Sembach AB, Germany, it only took six months for Benavides to again hook up with AFN, volunteering for television weather forecasting at the Network Headquarters in Frankfurt Germany. He is now broadcasting for all military personnel stationed everywhere from England to the Middle East. What he enjoys most about television weather broadcasting is the ability to be creative. "It's very unpredictable and you constantly have to adjust to the situation," says Benavides.

According to AFN Programming Director, Ann Mulligan, "I think the stellar factor is that he is an AFN volunteer. This man isn't assigned to AFNE to do weather, he does his full job in Sembach and drives an hour or more to AFN to do the forecast."

No matter what he is involved with, you can always sense the energy and dedication put forth by Benavides. His career path was altered by chance, but his life-style has definitely been molded to fit his outgoing personality and dedication to the Air Force and his community. Though he's reaching the 20-year mark for the Air Force, retirement is not something Benavides is considering. When that day does come, he's hoping to continue television weather forecasting and certainly what brought him here in the first place – flying! When asked about retirement Benavides grinned and said, "Nah, I'm not ready yet." And you can bet AFN viewers aren't quite ready for a new weatherman.

The pieces of the puzzle

By Lt. Col. Frank L. Estis
Assistant Federal Coordinator for Air Force/Army Meteorological Affairs

Have you heard about the Office of the Federal Coordinator for Meteorological Services and Supporting Research, located in Silver Spring, Md.?

If not, you don't know the office responsible for helping to bring the Federal meteorological community the Improved Weather Reconnaissance System for the WC-130s, the National Space Weather Program, the National Aviation Weather Program, the Next Generation Weather Radar, the Automated Surface Observing System, and all of your Federal Meteorological Handbooks ... just to name a few things OFCM has done over the years.

OFCM is an interdepartmental office that was established in 1963 after Congress and the Executive Office of the President recognized the importance of full coordination of Federal meteorological activities. The office mission is to ensure the effective use of Federal meteorological resources by leading the systematic coordination of operational weather requirements and services, and assisting research among the Federal agencies.

There are 15 Federal departments and agencies engaged in meteorological activities that participate in the OFCM's coordination and cooperation infrastructure. They provide representatives who lead and serve on program councils, committees, working groups, and joint action groups.

These interagency groups coordinate activities and needs across a set of ten key focus areas targeted at 21st century priorities. These areas are environmental support for homeland security; aviation weather; space weather; weather information for surface transportation; climate analysis, monitoring and services; cooperative research; observing capabilities; modeling and prediction; information technology and communications; and environmental services.

As part of the OFCM senior staff, Air Force Weather provides one weather officer to act as the Assistant Federal Coordinator for U.S. Air Force and Army Meteorological Affairs. In this capacity, I work a host of issues affecting the broad Federal meteorological community, with an eye to ensuring both Air Force and Army weather interests are fairly considered as decisions are made concerning Federal meteorological policy and priorities.

The OFCM regularly reaches out to the Federal meteorological community to gather and compile agency requirements in numerous meteorological areas such as, but not limited to, observation capabilities, aviation services, space weather capabilities, homeland security operations, and cooperative research.

In addition, the coordinator may work with various agencies on documents such as:

- Annual Federal Plan for Meteorological Services and Supporting Research
- Federal Meteorological Handbook 1 (Surface Observations)
- Federal Meteorological Handbook 3 (Rawinsonde and Pibal Observations)
- Federal Meteorological Handbook 11 (Doppler Radar Observations)
- National Severe Local Storms Operations Plan
- National Hurricane Operations Plan
- National Winter Storms Operations Plan

In addition to providing a Federal meteorological coordinating infrastructure, the OFCM leads efforts to define multi-agency requirements for meteorological services and research, prepares operations plans, conducts studies, responds to special inquiries and investigations, and conducts forums to address national meteorological topics and further define Federal agency requirements.

The AFW position at the OFCM, working on national meteorological issues and priorities, can be an exciting and eye-opening assignment for an AFW officer. It's a great opportunity to see how the whole Federal meteorological community comes together to establish national requirements for meteorological services and research and then work together to provide the services and research required to facilitate our national objectives.

The OFCM has nearly 40 years of experience, using a proven interagency coordinating infrastructure and a continually evolving and responsive collaboration process. The OFCM continues to play a critical role in the overall Federal meteorological program.

For additional information, check out the OFCM website at www.ofcm.gov.

POTUS Weather Operations

By Master Sgt. Miles Brown
AFWA Public Affairs

Air Force One takes off from Mollett Field, Sunnyvale, Calif., following a visit to the Bay Area by the President of the United States. Photo by Dominic Hart.

It is "T-15" minutes and the President of the United States is leaving the White House aboard Marine One, headed for Andrews AFB, Md.

The Presidential Weather Team at Andrews is finishing their final weather briefing with the crew of the Boeing 747 that will be Air Force One in less than 15 minutes.

The President boards his next ride and it is "wheels up." He and his staff, the pool of reporters, and the aircrew are in the air. Their route carefully planned to avoid any serious weather problems and get the Commander in Chief to his destination as quickly, comfortably, and safely as possible.

To the President, this process may seem smooth and seamless, but to the flight crew and support teams, the behind the scene efforts can be quite hectic. As for the weather team, Alan Zahnle (know to his fellow weather specialists as Mr. Z) and Staff Sgt. Jana Brown, the planning and forecasting for the most powerful leader in the world has its highs and lows – mainly highs.

Mission planning can begin more than a month in advance. The team, along with the other weather specialists assigned to the 89th OSS/OSW, provide climatological data, long-range forecasts, sunrise-sunset data and any information that may be pertinent to mission planning and generation.

Generally 24 to 72 hours prior to actual departure, they begin monitoring weather conditions for all destinations and alternate destinations. The weather team provides the navigators and crew of AF-1 detailed weather outlooks including estimated ceiling heights, visibility, winds, temperatures and any mission limiting weather phenomenon.

On mission day, Presidential Weather provides the crew of AF-1 weather briefs specifically tailored for the individual mission including the actual routes of flight. In addition to forecasts for all destinations, and alternates if required, they also include detailed, hand-drawn charts depicting all en-route hazards, turbulence, thunderstorm/precipitation, and icing for the entire route of flight. They also provide a plain language forecast for the duration of stay at all destinations.

While AF-1 is in the air, the weather team provides 24-hour service from Andrews. They frequently communicate with the crew in flight via phone and datalink to provide updates as weather conditions change to ensure the President arrives safely, comfortably, on-time, and without the impact of unexpected weather.

To ensure the flight crews have the latest data, the weather specialists use a wide range of products including radar and satellite imagery from both military and civilian sources to meet the mission needs.

"What we find is there is so much information available today that you can get yourself

bogged down with too much to look at," said Brown. "Despite that, we are constantly testing new products that become available to see how we may use them to better the accuracy of our forecasts."

"Depending on what he is doing and how he is traveling, the President gets weather updates from multiple sources," said Maj. Travis Steen, 89th OSS/OSW Weather Flight commander. "However, when it comes to AF-1, we are his sole weather source. Mr. Z and Staff Sgt. Brown work every mission from start to finish and provide the quality of weather intelligence the crews have come to expect and rely upon."

Aside from their AF-1 responsibilities, the team also provides an 8-Day Weather outlook for Andrews AFB and the Washington D.C. metropolitan area. This product is provided to agencies throughout the area to include the Pentagon, the FBI, and the White House.

Though the Presidential Weather Team's duties are stressful and hectic at times, both members find the work rewarding and memorable.

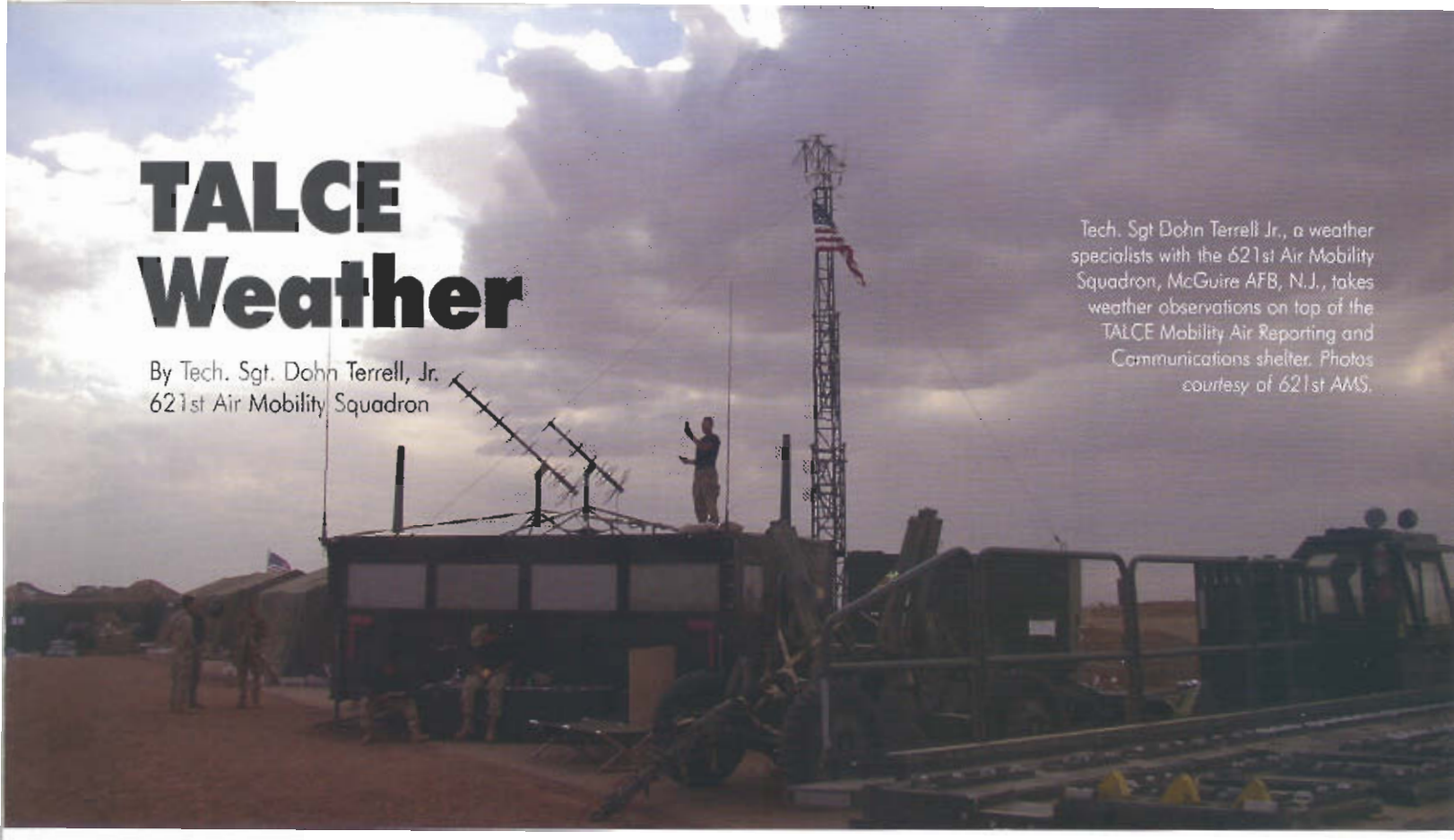
"I have worked in Presidential Weather for more than two years and my most memorable moments are every time I see AF-1 and the President arrive safely at home – Andrews AFB," said Brown. "What an honor it is to see the President so often, wave as he leaves and wave when he returns."

Rendering Respect

Senior Airmen Brittany Brodin (saluting) and Elissa Magee, weather specialists with the 208th Weather Flight, St. Paul, Minn., meet President George W. Bush on the tarmac at the Minneapolis International Airport after their return from Operation IRAQI FREEDOM. Their OIF deployment was supporting the 101st Airborne Division out of Ft. Campbell, Ky. Magee presented the President with a 208th Weather Flight coin during their meeting. *Photo courtesy of 208th Weather Flight.*

TALCE Weather

By Tech. Sgt. Dohn Terrell, Jr.
621st Air Mobility Squadron



Tech. Sgt Dohn Terrell Jr., a weather specialists with the 621st Air Mobility Squadron, McGuire AFB, N.J., takes weather observations on top of the TALCE Mobility Air Reporting and Communications shelter. *Photos courtesy of 621st AMS.*

Headquarters Air Mobility Command, Director of Weather, planned to add weather personnel in October 2003 to select Tanker Airlift Control Elements as a part of Global Mobility Task Force responsibilities. Six enlisted weather jobs were to exist in Air Mobility Squadrons – three jobs at McGuire AFB, N.J., and three at Travis AFB, Calif. Requirements for Operation IRAQI FREEDOM sped up the implementation. For the first time, ten AMC weather people deployed with TALCEs. One of their stories is below.

On a day in mid-December 2002 I was called into my station chief's office, Master Sgt. Paul Shelley, and when he closed the door behind me I knew something serious was up. He informed me there was a possible 45-day TDY coming up to the desert. He said the locations were to be determined at a later date and wanted to know if I was interested in volunteering. He explained to me that I would be deploying with a Tanker Airlift Control Element to run their weather operations. The TALCE I would be working with would be from the 621st Air Mobility Group located at my home station of McGuire AFB, N.J. Shelley had a grin on his face when I said, "What's a TALCE?" He explained to me how the mission of the TALCE was to go into an airfield and set up operations that can support an AMC mission.

The TALCE consists of about 65 people from several different Air Force specialties working as a team to maintain flying operations where no other infrastructure is available. Usually there is no power or communication in place during these deployments. They deploy as a self-sustainment package with their own equipment and supplies. Much of TALCE training is of the Special Forces type.

I volunteered after thinking about it for a day knowing the deployment was going to be something that might end up being something special and probably would be more than 45 days as stated on the orders. The HQ AMC/DOW's office called after New Year's day and told us it was a go and to be prepared for the deployment ASAP.

I arrived at a classified location in SWA in January. After I identified myself as the weather cell for the TALCE, I was told I would be working in the tent with Intel folks. It was obvious right away that I was really not considered part of the team. I took that as a challenge to prove to them that before the TDY was over they would be glad they had weather aboard.

I started taking observations using the Kestrel 4000 and MOS kit. I had a laser range finder to build my visibility charts, established my KQ identifier, and collaborated my first TAF with 28 OWS at Shaw AFB, S.C. The TALCE on this mission was to bring in a sustainment package to support a Search and Rescue mission as well as a squadron of F-16s.

Being a weather shop of one, I found myself working around the clock and focusing my duties on adverse weather conditions and times of flights. I accomplished the usual weather agenda and was always looking for various tasks to help with the others in TALCE. I changed oil filters (with supervision of course) on electric generators, shoveled rocks to create a sidewalk to and from different tents within the camp, and even helped to build an outhouse among other projects. The more I interacted with TALCE, the more I could see them starting to accept me as part of the team.

Later in the deployment, we moved to another classified location near Iraq. We spent the first few nights there sleeping in a hangar. Eventually, we set up our tents and remained there until our next move. Our mission was to bring in a sustainment package, basically a wing, for F-15s and C-130s. Once we were setup in our second location, TALCE leadership notified us there was a good chance we would be moving forward within days.

About this time the air strikes of "Shock and Awe" started, we knew it would not be long before we got the goahead to set up a base in Iraq.

On April 7, shortly after midnight, we flew out on C-130s on our way to H1 Airfield, Iraq. This is where the trip got interesting. U.S. and British Special Forces had secured the airfield and we were going in to assist AMC aircraft bringing in supplies and troops. To say the ride in was exciting would be an understatement. We were all very pumped as we went into full combat gear and issued seven clips of ammunition. I was thinking, where am I going to put all this ammo. I did not have the same Web gear as the rest of the TALCE. I ended up stuffing five of the clips into pockets of my computer case. One of the TALCE members commented jokingly, "Oh my, the weatherman with a locked and loaded weapon, we must be going to war."

Most of our cargo was filled with supplies and only five of us were on this particular sortie. We were in total blackout ops on our way in to the airfield. You could not see your hand in front of your face with all the lights out. To make it more interesting, we were flying in at 400 feet and definitely felt every bump. Shortly after crossing into Iraqi airspace our aircraft banked hard and detached flares as we had a missile lock detected. No missiles were ever seen being launched or in the air, but it did put things in perspective real quick. I will admit, I said a prayer.

Once we got on the ground they opened the back of the C-130 and we squeezed past the equipment to get out. The aircraft were doing engine-running stops so the blast of wind and heat from the propellers was enough to knock you down if you did not brace yourself. Keep in mind; all of this is in total darkness with no light anywhere on an overcast night. No cities were close enough to give that glow in the distance to use as a background reference, just total darkness. TALCE members who had arrived on an earlier flight took us to the camp where again everything was in total blackout; we slept on an asphalt pad that night.

TALCE folks working the aircraft used night vision goggles and worked in conjunction with Special Operations troops. The airfield was not located near any cities or villages and had no natural resources for us to use. All we had was what we brought with us to survive. We were in a football-field sized complex that the Army had built surrounded with an 8-foot-high berm for protection from sniper-fire. As it was with the first two locations, unless something special came up, we never left the compound except to work on the flightline.

After being on this deployment I have come to realize a few important things that are related to how Air Force Weather has changed and improved its capabilities as a warfighter over the last few years. The first deals with equipment. I was able to satisfy TALCE needs and aircraft needs with very little equipment. The days of having to tote around many boxes or palates of weather equipment are over. The Kestrel 4000 and MOS kit enabled me to deploy in a very lightweight mode, which is crucial when space and weight are prime concerns when a TALCE moves to a location.

The Shaw Hub performed forecasting and metwatching for my location and relieved my need to have access to charts, numerical models, and METSAT data. They were taking care of the forecast process for me, which enabled me to focus on taking observations and relaying information to the TALCE and aircrews. My communication equipment was an Iridium phone. I was able to call DSN or Commercial from anywhere on the globe. I used this to relay my observations, request updates for flight weather briefings, and also for planning weather for the daily battle staff briefings.

Another thing I realized is that the Hub concept worked very well in a time of war, something I had my doubts about until I saw it work. Shaw and other centralized agencies provided awesome top cover for our mission. I was their eyes forward and they were my eyes in the sky watching my back and graciously helping me whenever I requested it, no matter what kind of help I needed. I was on the phone with them sometimes 20-30 times a day or more during adverse weather days – it was without a doubt a team effort.

When I first arrived for deployment, I was a weatherman assigned to "support" the TALCE. By the time our mission was over, I was *totally integrated with the* TALCE team, and proud of it. I enjoyed it so much that I volunteered to move over to the 621st Air Mobility Operations Group as the NCOIC for a new weather shop as part of AMC's Global Mobility Task Force. I feel lucky and blessed to have been able to work with such great folks in a very challenging environment during an event as important as Operation IRAQI FREEDOM. As a career weather troop, I never imagined myself doing the type of things we accomplished with TALCE. It was hard work, but I have never had more job satisfaction than when I was with this group.

TALCE teams work through an out-flow boundary with 33 knot gusts causing a sandstorm at H1 airfield, Iraq.

Det. 1, 18th WS "On Board"

By Senior Airman Michael Farr
Det. 1, 18th Weather Squadron

On board the 7th Transportation Group's LCU Runnymeade, Tech. Sgt. Daniel Tucker, Staff Sgts. Joseph Taylor, and Robert Coe, Det. 1, 18th Weather Squadron, deploy a Wave Sentry Weather buoy. *U.S. Navy photos by Photographer's Mate 1st Class Arlo K. Abrahamson.*

Detachment 1, 18th Weather Squadron, Ft. Eustis, Va., provides continuous meteorological and oceanographic services to four battalions in the 7th Transportation Group. They include the 6th (Truck), 10th, 11th, and 24th (Terminal) Transportation Battalions.

These Battalions have similar missions and take care of everything from ensuring command and control of units engaged in strategic deployment, motor transport, cargo transfer, to direct and general support of marine maintenance, causeway operations and movement control support. Additionally, they provide command and control over units conducting tactical petroleum pipeline and water purification operations and the units conducting air, sea, rail and highway terminal and multi-modal transportation operations.

Det. 1 provides worldwide meteorological and oceanographic information to these battalions to enhance safety and operational effectiveness. We do this by predicting ocean wave heights and sea state conditions for the Logistics Over the Shore operations. LOTS operations usually consist mainly of various types of vessels which have Roll on/Roll off capabilities located one mile off shore, and an elevated causeway used to transport equipment and personnel onto the shore.

Sea conditions are crucial when operations are in progress. Waves over three feet can cause both the vessel and the causeway to move up and down and side to side making operations very difficult. Exact timing of wave heights, and sea conditions is crucial. Lives, equipment, and the overall success of the operation depend greatly on the accuracy of the forecast we provide.

In addition to providing assistance to these units in peacetime, we also contributed to the effort in the war against terrorism. Staff Sgt. Joseph Taylor and I deployed to Bagram AB, Afghanistan to support Operation ENDURING FREEDOM.

While deployed, we provided timely and accurate forecasts that contributed to resource protection and safety of more than

5,300 U.S. personnel, coalition forces and 70 aircraft located in theater. Their efforts aided the combat decision making process and directly impacted flight safety for world political VIP's and dignitaries to include: the Secretary of Defense, the Vice Chairman of the Joint Chiefs of Staff, the CENTCOM commander, the President of Afghanistan, and other high profile dignitaries.

Additionally, Air Force Weather and Staff Sgt. Taylor made history by providing forecast capability for the first-ever Italian air assault during the highly successful Operation UNIFIED VENTURE.

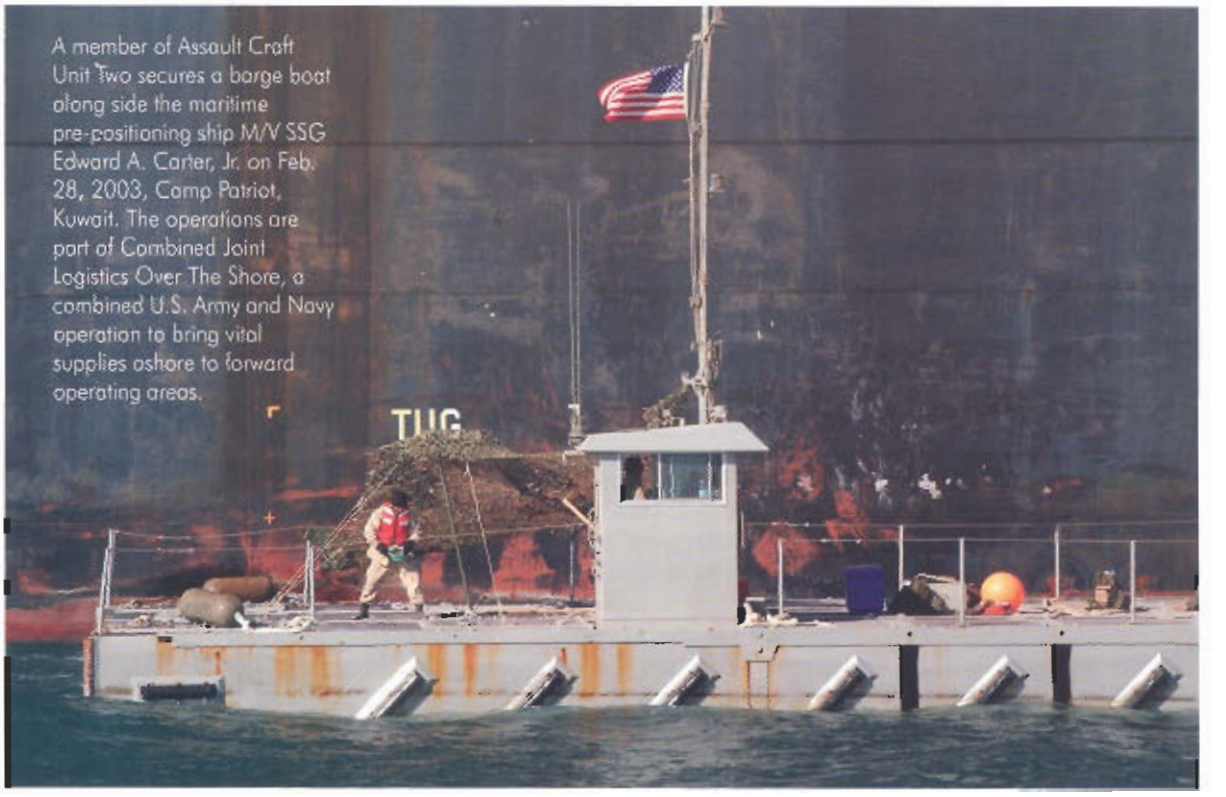
During Operation ENDURING FREEDOM, Capt. Ken Ferland, Det. 1 commander, Tech. Sgt. Dorothy Posey, and Staff Sgt. Bill Knight were deployed for Operation IRAQI FREEDOM at Kuwait Naval Base. They worked with a diverse group of forces and missions while in theater, to include providing weather intellegence to British re-supply ships.

Their primary mission was to provide weather for the 24th Battalion/7th performing the Joint LOTS mission at KNB. The mission involved moving cargo, troops, and equipment over a bare beach, or in this case a limited capability port, into the Area of Operations. This is usually accomplished by lowering the cargo over the side of the ship by crane onto a smaller craft below. The smaller boat then ferries the cargo to an open beach or port where it is offloaded onto waiting trucks.

Quality weather forecasts are critical to the mission from ship to shore. High winds can easily affect the crane operations. Poor visibility hampers navigation, and no one likes unloading explosives and ammunition during a thunderstorm. Sea states are probably the most critical parameter to forecast for this type of mission. The small boats that ferry the cargo from ship to shore are very susceptible to damage caused by seas of three feet or higher. Our unit is unique in AFW because of the time and focus we put on forecasting Sea States for our mission.

Upon arriving in theater and setting up operations, word got out quickly that the weather guys had arrived. The team provided coastal weather forecasts for the U.S. Coast guard and Navy small boat units that were providing port security. The Kuwaiti Navy also took full advantage of our products to brief their patrol boats moving through the Northern Arabian Gulf. They provided forecasts for the Army's High Speed Vessel, as well as the Joint Army-Navy Theatre Support Vessel as they moved up and down the Gulf, going as far south as Djibouti. Just prior to and during the war, we also provided forecasts to the special-forces teams and Navy special boat units that assaulted the oil platforms off the coast of Iraq. The unit even provided combat weather information for the Navy's mine hunting dolphins and their handlers.

The Southwest Asia theater wasn't the only active Area of Operations for 7th Group. Det. 1 simultaneously engaged in operations at four separate locations: Turkey, the port of Hythe in England, route forecasts for vessels transiting the Atlantic, and for ships moving through the Mediterranean Sea. All the 7th Group units in these areas had weather intellegence requirements. It was a very busy time, even more so during the first



A member of Assault Craft Unit Two secures a barge boat along side the maritime pre-positioning ship M/V SSG Edward A. Carter, Jr. on Feb. 28, 2003, Camp Patriot, Kuwait. The operations are part of Combined Joint Logistics Over The Shore, a combined U.S. Army and Navy operation to bring vital supplies ashore to forward operating areas.

week of the war when the inbound missile alerts were going off every hour. Re-supply missions to the front line war fighters proved critical, and the mission we aided at KNB was one of the primary discharge points into the theater.

Sergeant Knight recalls the most exciting part of the mission was when the briefing requirements moved to Tallil AB, Iraq. Early in the war, Ferland and Knight "jumped" North to Iraq with 7th Group. Along the way, they ended up escorting two Reserve ammo troops and several loads of munitions for the A-10 Thunderbolt Squadron in Tallil. They helped navigate the sometimes-convoluted transportation system, enabling them to deliver the ammo to the waiting A-10s. To date, the trip to Iraq has been the pinnacle of Knight's military career.

"It was unbelievable, to drive through that desolate land, knowing that our forces had swept through there only days before on their way to Baghdad," said Knight.

Det 1, 18th Weather Squadron has a very unique mission in the Air Force! We support the Army's Navy. We are the only AFW unit that deploys to a beachhead for oceanographic operations while simultaneously being tasked against Air Force taskings. We contribute immeasurably to the overall success of the world's best military and keeps us one-step ahead of the enemy. Y

Members of Assault Craft Unit Two stand by as a crane from the maritime pre-positioning ship M/V SSG Edward A. Carter Jr. lifts a shipping container onto their barge boat on Feb. 28, 2003, Camp Patriot, Kuwait. *U.S. Navy photo by Photographer's Mate 1st Class Arlo K. Abrahamson.*

30th Weather Squadron

By Staff Sgt. Patrick Brennan
30th Weather Squadron

When I arrived at Vandenberg AFB, Calif., nearly three years ago after finishing the Weather Forecaster's Course at Keesler, my mind was filled with images of sun, sand, crashing waves and beautiful beaches. I can't adequately express my surprise when during my first shift at the 30th Weather Squadron, one of my co-workers explained to me the wonders of marine layer fog and stratus and the huge impact it has on the approximately 100,000 acres of Vandenberg and its missions. Some might not find the forecast challenge of pinpointing fog and stratus burn-off five months out of the year to be a particularly exciting prospect. However, there is much more to the 30th Weather Squadron than the forecasting of low-level clouds.

The primary airfield mission of the 30th Weather Squadron is for the 76th Helicopter Flight, giving local area weather briefs to the helicopter pilots for their wide variety of Search and Rescue missions, Range Safety Operations and incentive flights. Since the 76th is the only flying unit we have, the daily production of Flight Weather Briefs, or Form 175-1's, is abnormally low for a weather station. However, we are sometimes called upon to brief transient aircrews passing through the area.

The heart of working at the 30th is, of course, for the long list of space launch operations at the range. We providing everything from forecasts for the delivery of launch vehicles to Vandenberg, through disseminating Toxic Hazard Zone forecasts for fueling of the rockets, to forecasts for the launches themselves, as well as many others. A launch operation transforms the Weather Operations Center from the fairly tranquil daily routine to a bustle of frenzied activity, as the launch weather team relays constant weather updates and forecasts to the other associated agencies on and off base.

Our launch teams are led by a launch weather officer and one deputy launch weather officer stationed at the Range Control Center to provide real-time briefs to mission control personnel. Other team members include a range weather forecaster and a balloon editor to oversee and quality control the many weather balloons and extensive amounts of rawinsonde data produced. A toxic forecaster predicts the local wind field and stability of the atmosphere in the event of a launch mishap. The rawinsonde balloon launch section, and the Weather Operations Center commander round out the team. It takes all of these individuals working in concert to provide effective weather support for each launch.

Over the past year, the 30th WS has worded 14 launches, one of which took six attempts to launch through various holds and delays – weather-related and otherwise. These missions ranged from the Missile Defense Agency test, during which a kill vehicle was launched from the Kwajelein Test Range in the Pacific Ocean to shoot down the target vehicle launched from Vandenberg, to the Titan II launch vehicle, which positioned a satellite into orbit around the earth. The combined cost of these 14 operations added up to a staggering $2.4 billion. One can easily imagine the dollar values involved should a weather forecast prove to be incorrect, not to mention the disastrous consequences that could result.

"It's definitely unique and extremely challenging, because of the valuable assets we have to protect and the broad scope of the weather that affects our operations. I deal a lot more with upper-atmospheric forecasting now than I thought I would at any point in my career," responded Senior Airman Adam Salter when asked how his assignment as a range weather forecaster at the 30th differed from his previous weather assignments.

Indeed, the weather forecasting at Vandenberg exists at each of the synoptic, mesoscale, and microscale levels. The weather at the base can be completely different from the weather at the Kwajelein Test Range in the Pacific Ocean, just as the weather can be completely different at two space launch complexes separated by a mere few miles.

"This is the most different and technically challenging job I've had in my career. Instead of forecasting for an aerodrome, you have to focus and forecast exactly for one specific point at one specific time," said Master Sergeant Stephen LeBrun, 30th WS superintendent.

The 30th Weather Squadron is a truly unique and diverse unit. Every single member has a crucial role to play in the success of our nation's aerospace program, and every individual is dedicated to ensuring our weather operations for each mission is as flawlessly tailored to customer specifications as it possibly can be.

Beale weather team and airborne ISR operations

By Capt. William Pryor
9th OSS/OSW

The high-altitude reconnaissance mission of the 9th Reconnaissance Wing's U-2 "Dragon Lady" is critical to almost all current military operations worldwide. A sampling of these contingencies includes Operations SOUTHERN WATCH, JOINT FORGE, and ENDURING FREEDOM – efforts vital to our national security.

The intelligence-gathering role of the U-2 is often the first enabling step of any combat operation. It may also be the last, as timely imagery is essential to conducting battle damage assessments after a strike or monitoring treaty and peace accord compliance. This reality is underscored by Col. Phillip Meilinger of the School of Advanced Airpower Studies at Maxwell AFB, Ala. In his essay, *Ten Propositions Regarding Airpower*, he states, "Intelligence is essential to targeting; moreover, intelligence specifically geared to airwar is required," and further, that "the key to all conflict is intelligence."

Successful execution of the U-2's key Intelligence, Surveillance, and Reconnaissance missions require the involvement and cooperation of personnel from many different disciplines, from the pilots to intelligence analysts, maintenance, and mission planning personnel on the ground (to name just a few).

One key contributor to the U-2 mission is the 9th Operations Support Squadron Weather Flight at Beale AFB, Calif. Weather information for U-2 operations is unique. The sorties are flown at altitudes exceeding 70,000 feet and may be over three thousand miles in length – halfway across the U.S. and back. Close attention must be paid to weather at the many divert airfields along and near the flight route, with special focus on wind speed with respect to active runway direction. Crosswinds of 15 knots or greater make landing the Dragon Lady impossible or, at best, tenuous.

At home or deployed, there's much more to providing world-class, mission-focused weather information for the U-2 than meets the eye.

"Every location offers its own set of challenges specific to this weather-sensitive aircraft," said Tech. Sgt. James Fashing, an experienced Beale weather specialist who has three Southwest Asia deployments working U-2 operations under his belt. "All weather team members, by necessity, work hard to develop local 'rules of thumb' for every location," added Fashing.

The weather specialists at Beale coordinate daily with meteorologists at the 25th Operational Weather Squadron, Davis-Monthan AFB, Ariz., on the local airfield forecast and any significant weather that might affect the airfield. However, this is only a small piece of the puzzle. To truly hit the mark as a ***combat weather team***, Beale's weather specialists, both officer and enlisted, must really dig in and be involved in all phases of the mission.

The weather flight's involvement begins well before the day of the sortie, as personnel review flying schedules and coordinate with mission planners to learn the details and unique requirements of each collection mission. Depending on the sensors being used, cloud cover over the collection area may be a primary planning consideration. Beale weather technicians issue a daily mission planning outlook containing the next day's forecast for cloud cover percentage, climb winds,

Staff Sgt. Jason Bazin, 9th OSS/OSW weather specialist, studies NEXRAD data in preparation for formulating a U-2 mission weather briefing. Photos by Senior Airman Timothy Jenkins.

and flight level winds, areas of turbulence and temperatures. These variables are initial criteria for route selection and computer flight plans for both training and actual missions. If a real-world imagery collection requirement exists, mission planners look to a specific cloud-free forecast percentage for that area as a critical go/no-go decision point.

On the day of the sortie, U-2 aircrews typically show up at the forecast counter two hours before takeoff to get a rundown of weather expected for the mission. A flight weather briefing consists of weather conditions expected at takeoff, enroute and target impacts, and finally, recovery (landing) weather. Doppler weather radar and satellite imagery, along with charts depicting significant or hazardous weather, serve as key visual aids for the pilot developing a mental picture of the mission ahead. Special attention is focused on conditions at alternate landing, or divert, bases. The Beale weather specialists on duty continuously monitor wind conditions at several alternate bases and advise U-2 crews and the supervisor of flying, or SOF, via hotline when crosswind conditions exceed the U-2's limits.

"We must often coordinate real-time with Weather during recovery ops in order to get a mission back on deck when crosswinds are right at the limit," explains Maj. Jeff Jungemann, a seasoned U-2 pilot. This direct link between the weather specialist and the SOF is essential for the situational awareness and overall success of the U-2 operations team.

One unique component of a U-2 mission weather briefing is forecast conditions in the stratosphere, the layer of the atmosphere above where most "weather" (as people generally know it) actually takes place. The U-2 flies at levels significantly higher than almost all other military or civilian aircraft, adding a new dimension to the weather forecasting mission. Typical weather and turbulence charts only extend up to about 50,000 feet above mean sea level, but the U-2 weather specialists must consider environmental impacts at much higher altitudes. The Beale team uses wind and temperature model charts from the Air Force Weather Agency located at Offutt AFB, Neb., and the National Oceanic and Atmospheric Administration. Satellite imagery is key in stratospheric turbulence forecasting, as dangerous mountain wave turbulence can usually be seen on satellite pictures and sometimes extends into the stratosphere. This threatens mission success and, more importantly, creates treacherous conditions for the U-2 pilot.

Joe Fabian, 9th OSS/OSW weather specialist, briefs an aircrew on weather impacts forecast to occur during mission execution.

U-2 weather technicians work hard to overcome the lack of data available at U-2 flight levels, to include studying stratospheric turbulence forecast charts developed at the Naval Research Laboratory in Washington, D.C. The NRL has posted stratospheric turbulence charts over the western CONUS at the Beale weather flight's request. They went one step further and posted products that can be used for high-altitude reconnaissance support in combat areas around the globe. This has been a great help to AFW specialists deployed with both the U-2 and RQ-4A Global Hawk during Operation ENDURING FREEDOM.

One additional environmental factor in U-2 operations concerns "space weather," a challenge very few might realize falls within Air Force Weather's responsibilities. In fact, space weather is a major area of emphasis within AFW, and many new capabilities and products are being developed for a variety of missions. The phenomenon most relevant to U-2 operations is solar proton activity. U-2 weather technicians at Beale monitor space products on the AFWA home page to advise the crews and the 9th Operations Group commander of solar impacts that could threaten aircrews. AFWA professionals assist greatly with courtesy calls and direct notifications to Beale as well as U-2 operating locations worldwide.

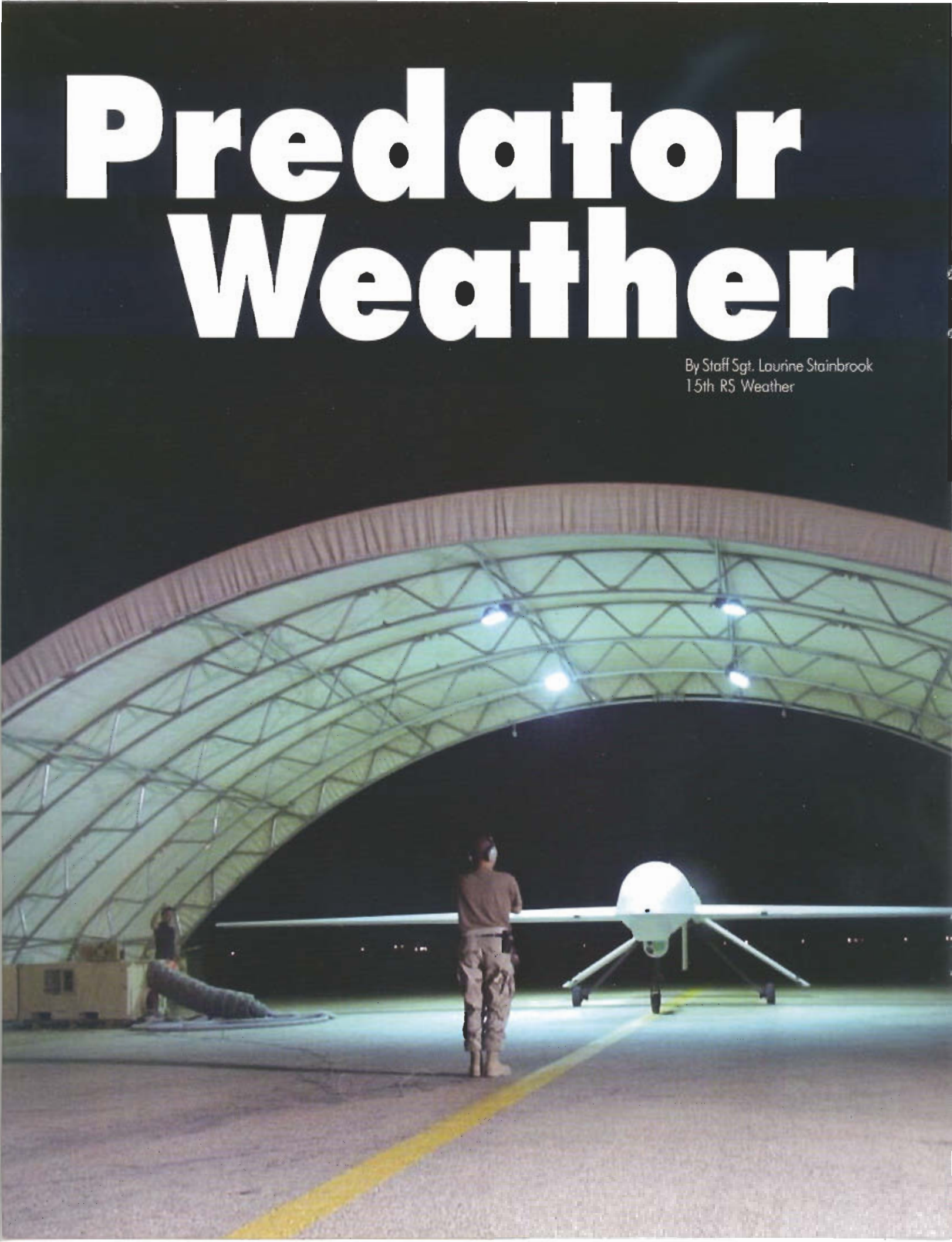
Clearly, a true combat weather team's mission extends beyond answering the ubiquitous question "Will it rain today?" Weather specialists at Beale perform analysis and deliver briefings not required of a typical weather flight, but little is typical about the U-2 ISR mission.

"There is no other combat aircraft which relies as heavily on a good weatherman as the U-2, as evidenced by the strict crosswind, target area weather, and high-altitude turbulence limits," said Capt. A. J. Werner, a recipient of the Distinguished Flying Cross for his reconnaissance missions over Afghanistan.

Flying the Dragon Lady is a source of great pride for the U-2 pilots. At home or while deployed, Beale's weather team is proud of its mission as ISR experts delivering the best high-altitude reconnaissance weather information in the world. Nobody does it better!

Predator Weather

By Staff Sgt. Lourine Stainbrook
15th RS Weather



I began my day by giving a detailed weather briefing to the first crew of what would be a 20-hour flight. I briefed that thunderstorm activity would develop by 1400L. I showed them on a map specifically where the activity would occur and where there would be no activity (in other words, where it would be safe and flyable). After my portion of the briefing the crew received an intelligence briefing and then conducted the rest of their mission planning.

Once they launched, I monitored the area of operation, watching specifically for any signs of early thunderstorm development. I also monitored the location of the aircraft and occasionally asked for pilot reports. As it drew closer to 1400L, I watched cumulus clouds develop and grow around the aircraft's mission area.

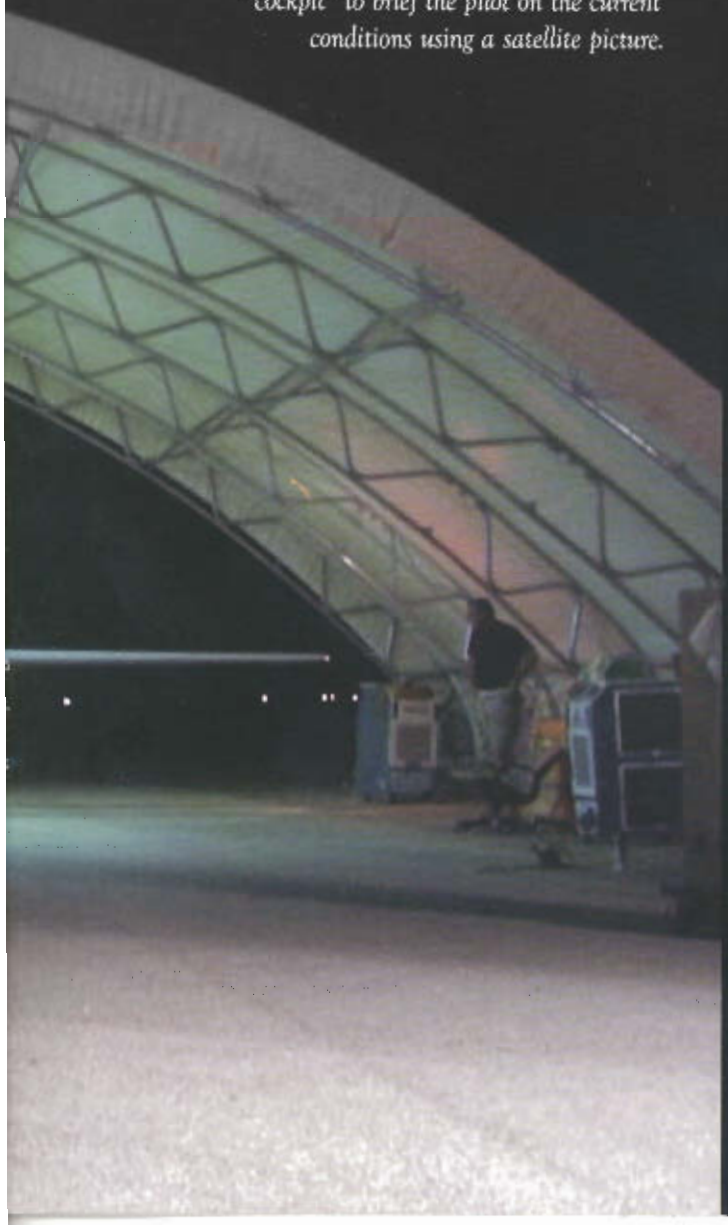
Of course, today's mission happens to be exactly where all the thunderstorms will be. Knowing the aircraft limitations as well as airspace limitations I decided to step out to the "cockpit" to brief the pilot on the current conditions using a satellite picture. I showed him that in fact things were developing and it was time to leave the area to avoid a danger to the aircraft and to avoid having to break airspace limitations in order to "escape." The pilot agreed and I went back into to the office to send an e-mail to the Combined Air Operations Center where decisions are made for these missions. The e-mail included a satellite picture as well as an explanation of current and forecasted conditions that would affect the mission, giving the decision makers at the CAOC all the weather information necessary to make an informed decision.

Shortly afterward we received a message from the CAOC informing us to stay on target despite the risk to the aircraft because of the importance of the mission. Hearing that, I know I am in for an interesting afternoon. It will now be my job to help the pilot keep the aircraft on target while avoiding as much danger as possible to prevent an aircraft loss, through constant communication with the pilot and continuous analysis of satellite and other available data.

This is what it is like to provide weather data and forecasts for the Predator Unmanned Aerial Vehicle. As you can see, this is not your average weather job. How many other weather jobs can you think of that allow you the ability to step into the "cockpit" at any time to update the pilot on changing conditions? Or to witness first hand how accurate your forecast is? Weather operations for the Predator is truly unique for a most unique mission!

The Predator mission is reconnaissance. The pilots fly the aircraft from a small trailer, known as the GCS, equipped with video screens and controls simulating the interior of an airplane. A sensor operator sits to the pilot's right with similar controls to operate the imagery sensors during flight. Some deployed locations are equipped with a laptop computer with Internet access in the GCS, and a monitor is mounted in the pilot's view so they view the most current satellite imagery. This is particularly handy when a route must be changed, ensuring there are no surprises when the weather specialist informs the crew of ensuing inclement weather that could affect the mission.

As a weather specialist performing Predator situational awareness, you are provided with more tools to aid in forecasting than with other aircraft support. The Operations Cell is where the imagery analysts and intelligence work and where overall Predator operations are conducted at the deployed location. This Ops Cell contains two TV monitors – one that displays live feed from the aircraft and another that displays a map with the current location of the aircraft overlaid on it. At any time, the weather specialist can ask for a "weather sweep." When re-



A 64th Expeditionary Reconnaissance Squadron airman guides a Predator unmanned aerial vehicle into its hangar at Tallil AB, Iraq, following a mission. The Predators roam the skies of Iraq providing real-time information to commanders around the world. *Photo by Staff Sgt. Robert Grande.*

The pilots fly the Predator from a small trailer, known as the GCS, equipped with video screens and controls simulating the interior of an airplane. A sensor operator also works in the GCS with similar controls to operate the imagery sensors during flight. *Photos courtesy of the 15th RS Weather.*

quested, the sensor operator will sweep the camera 360 degrees so that the forecaster has a current picture of actual conditions from the aircraft's perspective. The pilot will follow it up by informing you of the current wind and temperature as well as any hazards he or she is experiencing.

Essentially, it's a pilot report with a picture. This helps the weather technician see what is occurring in data sparse locations that may not disseminate observations, and/or when satellite imagery is not indicating everything, such as smoke or dust, or newly developing cumuliform clouds that are still too small to be recognized due to poor satellite resolution. Keeping informed with "weather sweeps" can help indicate declining conditions far in advance of other available data. Predator weather operations is a highly interactive weather forecasting experience.

The Operations Cell also has a computer used by the weather specialist to monitor satellite and radar data as well as other forecast products. Rather than stepping into the GCS every time, the forecaster can use a headset in the Ops Cell to speak with the pilot during flight. In circumstances that inclement weather has placed the aircraft in a danger, direct communication with the pilot is essential. For example, if the aircraft is accumulating ice the pilot depends on the weather technician to inform him on the best way to escape further icing.

Weather technicians work directly with the pilot and crew throughout the flight by keeping constant watch on the weather and the location of the aircraft. This ensures the pilot is 100 percent informed 100 percent of the time. The technician on duty provides weather information that will enable the aircraft to stay on its mission until the last possible minute before weather has forced a retreat. In some cases, like in the scenario above, the weather technician's job is to provide as much information as possible to keep the aircraft as safe as possible when conducting particularly risky operations. And since the "cockpit" never leaves the airfield, the technicians work with the same pilots and sensor operators day in and day out. Working so closely can enable a great opportunity to build good rapport and a good working environment.

As a Predator weather specialist, you provide weather intelligence solely to the Predator, so any other aircraft using the airfield receive weather from another location. Observations are taken by an automated observing system, so when not briefing, the forecaster can devote his or her time to metwatching and keeping the pilots informed. When not deployed, Predator is stationed at Indian Springs AAF, Nev. Indian Springs is a small town about an hour northwest of downtown Las Vegas. It's there where everyone works together to practice for deployed operations and where forecasters learn all of the specifications and limitations of the Predator. When it is most crucial, during deployment, weather operations specialists will get execute their mission flawlessly.

A Predator sits on the ramp at a deployed location waiting its turn for launch on another mission for Operation IRAQI FREEDOM.

First Hurricane Hunters Blazed Bright Path

1st Weather Reconnaissance Squadron modified B-25 on the ramp in Bermuda, 1945. *Photo courtesy of Air Force Weather History Office.*

By Jerry White
AFW History Office

With another hurricane "season" underway, it is a fitting time to look back on the origins of the "Hurricane Hunters" mission. This year is especially timely as 2003 is the 60th anniversary of the first documented successful penetration of a hurricane center, or "eye," by an aircraft.

Prior to World War II, pilots avoided hurricanes like any other severe storm, as their planes were fragile and underpowered. However, with advances in aircraft design, engine performance, and materials technology, this was changing by the start of WW II.

Even before formal entry into WW II, the Army Air Forces was interested in tracking and forecasting weather across the North and South Atlantic. Army Air Force leaders wanted to fly as many aircraft to Europe as possible instead of having to ship them, which required dangerous ocean voyages through U-Boat infested waters.

For the South Atlantic routes, which crossed the Caribbean, concern about hurricanes led to a combined Army-Navy-Weather Bureau effort. This resulted in creation of the Joint Hurricane Center at Miami in 1943. This year also saw the first documented (and successful) penetration of a hurricane by an aircraft.

On July 27, 1943, Col. Joseph P. Duckworth, commanding officer of the Army Air Force's Instructors' School for instrument pilot training at Bryan Army Airfield, Texas, purposefully (but not necessarily with proper clearance) flew one of the school's AT-6 Texans into the "eye" of a hurricane centered near Galveston, Texas.

According to the account published in the 1956 book *Hurricane Hunters*, by noted meteorologist I. R. Tannehill, Duckworth, after hearing earlier that day that a hurricane was near Galveston, thought it would be "fun" to test his piloting skill against the storm. He asked the school's only navigator, then 2nd Lt. Ralph M. O'Hair, to accompany him on the first recorded flight into a hurricane's "eye." Upon the pair's return to Bryan, then 1st Lt. William H. Jones-Burdick, the school's lone pilot-weather officer asked to accompany Duckworth into the hurricane. Duckworth agreed and made his second flight into the hurricane's "eye" that day with Jones-Burdick as his expert observer.

Duckworth issued a short report of his flights in mid-August 1943. "On the whole," he wrote, "neither flight through the hurricane was as uncomfortable as a good, rough thunder-storm." He continued, "The best description of the hurricane was offered by the weather officer, who stated that it was no worse than an unstable warm front."

Prior to 1944, the focus of "hurricane hunting" was to know where not to send aircraft. In the early days of the war, this was hopefully accomplished by ground based forecasting and pilot's reports. Also, some weather forecasters flew on military and contract transports to make observations and send back detailed reports on conditions. In November 1943, the 30th Weather Reconnaissance Squadron sent six B-25 bombers from its base in Presque Isle, Maine to Miami, Trinidad, and Brazil to improve the quality of weather observations in the Caribbean. The 30 WRS mission was collection of airborne weather observations, which they did until returning to Presque Isle in April 1944. Their work resulted in significantly reducing the number of weather delays for aircraft flying the South Atlantic routes.

As a designated mission, "hurricane hunting" took its first steps in 1944. In June 1944, the Hurricane Reconnaissance Unit was temporarily organized under the 9th Weather Region, flying B-25s on weather recon missions. The official history notes this unit flew 43 storm missions into 13 tropical storms or hurricanes, primarily in September. While there are no records indicating any of these missions penetrated into the "eye" of a hurricane, the Secretary of Commerce (whose department operated the Weather Bureau) commended the crews. He noted in a letter to the Secretary of War that "the hurricane reports were invaluable" and "estimates indicate that the loss of life and property would have been far greater without the precautions

made possible by the timely advices in advance of the storm. This unit was disbanded in December 1944 and replaced by "Duck" Flight, 1st Weather Reconnaissance Squadron (an August 1944 redesignation of the 30 WRS) flying four B-25s out of Morrison Field, West Palm Beach, Fla.

Although they flew routine weather missions throughout 1945, it wasn't until Sep. 13 that a 1st WRS "Duck" Flight crew flew their first hurricane reconnaissance flight. The six-man crew first located the storm on Sep. 12 while flying their B-25 from Miami to the island of Antigua. Returning the next day, they flew through a storm estimated at 200 miles across and penetrated the "eye" of the storm on their way back to Miami. This storm was big enough that the 53rd Reconnaissance Squadron, Weather (now the 53rd Weather Reconnaissance Squadron) deployed a modified B-17 bomber from Newfoundland to Miami and they flew their first hurricane hunter mission Sep. 14, against this same storm.

The 1st WRS was inactivated at the end of 1945 and the 53rd WRS took over the mission. By September 1946, 53rd crews were flying storm penetration missions from Morrison Field in both TB-17G and B-25J aircraft. At the end of the 1946 hurricane season and with three years of success, the future of the "Hurricane Hunters" was assured.

The 53rd WRS, most identified with this mission, has flown the bulk of "hurricane hunter" missions over the years since then, operating at various times from Kindley AFB, Bermuda; Hunter AFB, Savannah, Ga., and Ramey AFB, Puerto Rico before arriving at Keesler AFB, Miss., in 1993.

The 53 WRS, assigned to the 403d Wing, Air Force Reserve Command, is now the sole surviving military weather reconnaissance squadron. Manned by professionals that go where combat crews have feared to fly, the information gathered about speed, direction, and intensity of these storms has been credited with saving uncounted lives since the first hurricanes were "hunted" and their secrets revealed in 1944.

Buoy mission enhances data collection

By Senion Airman J. Justin Pearce
403rd Wing Public Affairs

Hitting the Gulf of Mexico with a buoy can be more difficult than it sounds. Especially when you want those buoys in a certain place and need them to gather critical surface data used by the National Hurricane Center in the prediction of deadly storms.

Dropsonde Operators from the 53rd Weather Reconnaissance Squadron teamed up with 403rd Operations Group's loadmasters in July to get training for the airdrop mission.

The National Hurricane Center requested assistance in deploying the new state-of-the-art research buoys.

These buoys will be deployed in front of approaching storms to collect useful data at surface level.

Master Sgt. Todd Patterson, chief, aerial delivery; Master Sgt. Morton Smith, standard and evaluations loadmaster; and Senior Master Sgt. Gayle Holmen, loadmaster superintendent, all of the 403rd Operations Group, developed the buoy deployment procedures and training program, which will now be used as a ground base for all buoy deployment training.

Loadmasters were tasked to qualify dropsonde operators to add more capability to the 53rd WRS so they could act as a srand-alone unit for deploying the buoys.

Training consisted of three primary goals:

- To certify buoys for air drop
- To certify the C-130J to drop them
- To certify the Dropsonde Operators to conduct the mission

During training, Dropsonde Operators learned about each of the six types of buoys, buoy rigging, deployment and no-drop emergency procedures, as well as the buoy-deployment checklist, said Patterson.

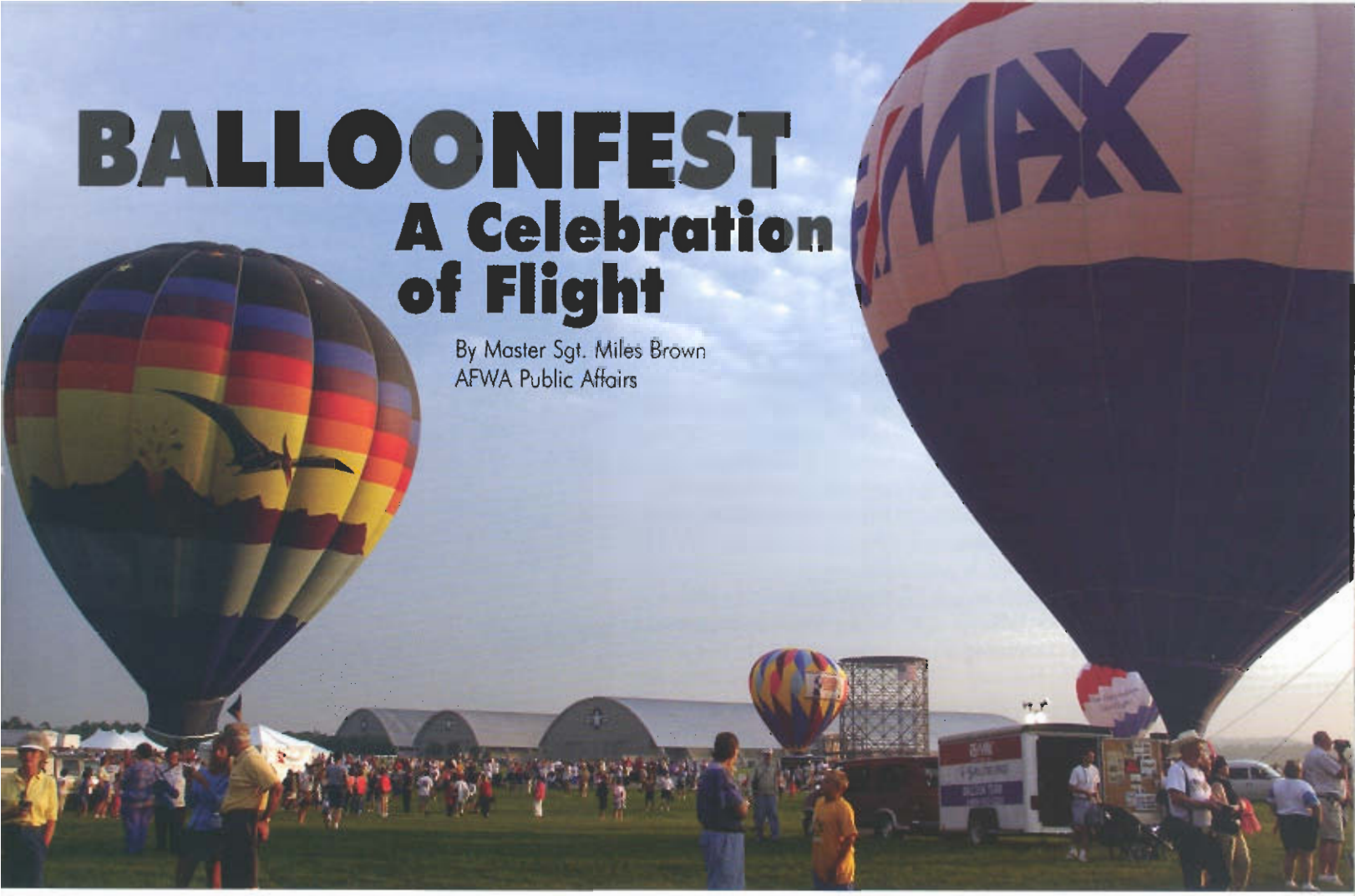
Different types of buoys are used to record specific weather dynamics. The buoys collect data, which is sent back to the National Hurricane Center, and used for research purposes to enhance hurricane prediction models.

These new buoys are the Wind Speed and Direction, Compact Meteorological and Oceanographic Drifter, Lagrangian Floar, Autonomous Drifting Observing System Drifter, Surface Velocity Program/Mini-Meteorological Drifter and Argo Sounding Oceanographic Lagrangian Observer Floar.

Weather specialists need frequent, high-quality marine observarions to diagnose conditions before they prepare forecasts and to be sure their forecasts are correct. Buoys relay their information via radio or satellite. Buoys, like the Hurricane Hunters, are critical to gathering timely information used by forecasters when nature sends a storm toward land.

BALLOONFEST
A Celebration of Flight

By Master Sgt. Miles Brown
AFWA Public Affairs



Crowds gather as hot-air balloons prepare to lanch at the Air Force Museum, Wright-Patterson AFB, Ohio, during the 100 years of powered airflight celebration July 6. *Photos courtesy of the U.S. Air Force Museum.*

How do you celebrate the 100th anniversary of powered flight? This simple question sparked a grand plan to race 20 gas balloons from the Air Force Museum at Wright-Patterson AFB, Ohio, to Kittyhawk, N.C., over the Fourth of July weekend. Additionally, more than 150 hot-air balloons would also participate in the weekend festivities. All of these events required considerable planning, spot-on weather forecasts, and a little help from Mother Nature. As you know, things don't always go as planned.

The volunteers manning the event weather team, members from the 88th Weather Squadron and Science Applications International Corporation, were ready to work around the clock during the event to ensure the balloon pilots had the latest, most accurate weather forecasts possible. Mother Nature had other plans for the weekend.

According to John Turnbull, SAIC assistant site manager at the 88th WS and lead forecaster for the event, all eyes were focused on the long-term forecasts in the weeks leading up to the event.

"We had been stuck in a pattern for weeks, and I was watching a particular frontal system that was supposed to move through the area on Friday night the Fourth," said Turnbull.

Turnbull said the team gave daily weather updates to the event coordinators who were responsible for making a go/no-go decision on the launch of the gas balloons. They had a 3-day window from Friday afternoon through Sunday evening to launch, depending on the local weather and upper level wind patterns.

Friday the fourth started with a speech by President George W. Bush and a promising short window of opportunity to launch the gas balloons in the early evening.

"The mad rush of gas-balloon pilots calling and in-person briefs commenced shortly after 1 p.m.," said Turnbull.

Turnbull provided an informal briefing to the event coordinator informing him that evening thunderstorms were still expected. Once these storms came through, there would be a chance for precipitation each day through the weekend, so Friday evening would be the best chance to launch.

Not only did the team have to look for local weather hazards, but also enroute weather, since they did not want to be flying into any convection, or have thunderstorms catch up to them at any point in their route of flight. Surface winds were the most immediate concern to the balloon pilots, since they needed less than 10 knots in order to inflate their balloons.

The thunderstorms, which were projected to reach Wright-Patterson at 10 p.m., rolled across Illinois and Indiana at 25 knots, turning things for the worse. At about 7:40 p.m., a severe thunder-

storm warning was issued for Wright-Patterson for 50 knot winds associated with the thunderstorm area in Indiana, which started to bow and speed rapidly to the east, due to the interaction with the leftover outflow boundary from the previous storms that passed through the area. The emphasis went from finding a favorable launch window to closing up shop and safely packing away balloon equipment as quickly as possible, as a few balloons were already preparing to fill their balloons, explained Turnbull.

Not only did the balloonists need to secure their equipment, but also the 20,000 people ready to see the hot-air balloons glow and Fourth-of-July fireworks were told of the warning, and were looking to take cover as quickly as possible. A little over an hour later, the thunderstorms rolled through the area, bringing with it 45 knot winds. Thankfully, no injuries occurred, and no equipment was damaged during the storm. The balloon teams, event coordinators, and the weather team packed it up for the night and made plans to regroup Saturday morning.

At 7 a.m. on Saturday, Turnbull gave another mass weather briefing. He told the ballooners about a large area of precipitation just off to the west with embedded precipitation, which did not bode well for a morning launch.

The weather did not cooperate for the rest of Saturday, and one last window of opportunity arose with the sun on Sunday. That morning, 82 hot-air balloons dotted the morning sky over the museum grounds. Unfortunately, the forecast for Eastern Ohio and Western Pennsylvania called for continued afternoon thunderstorms, right where the gas-filled balloons were programmed to fly. The decision was made at about 8 a.m. to call off the gas balloon race.

"It was very disappointing to not see all the balloons launch with all of the planning that took place in advance," said Turnbull

The race pilots, even though disappointed, were very understanding about what was happening, and blamed Mother Nature rather than the weatherman.

"With safety being the number one priority, nobody wanted to launch balloons into inclement weather, and in hindsight, the right call was made to not start the race," said Turnbull. "It was a refreshing change forecasting for balloons versus fighter aircraft, and hopefully they will return to try the race another day. Y

88th Weather Squadron

Preparing for the future

By Master Sgt. Miles Brown
AFWA Public Affairs

What do the AirBorne Laser, Global Hawk, and stratospheric turbulence have in common? If you said Ohio, you would be right. More specifically, the 88th Weather Squadron at Wright-Patterson AFB, Ohio.

The 88th not only provides weather forecasts for the base and flight crews, they also are involved in the planning, testing, and evaluations of many cutting-edge weapon systems. The weather specialists assigned to the squadron are involved in everything from numerical modeling and simulation characterization of the atmosphere to working directly with on-going warfighting efforts.

The 88th WS continues to help with the development of the AirBorne Laser program from modeling and simulation efforts to operational test and evaluation. They helped sponsor recent graduate level work for the ABL at the Air Force Institute of Technology.

The graduate level work encompassed modeling and simulation work for the adaptive optics on the ABL. The adaptive optics, which will correct for atmospheric effects are critical to the ABL's success are an area of focus for staff meteorologists. Staff meteorologists from the squadron have also traveled to various locations for operational testing and evaluation of various components for the ABL.

Another unique 88th aerospace mission is the RQ-4A Global Hawk. Global Hawk is a high-altitude, long-endurance unmanned aerial reconnaissance system designed to provide military field commanders with high resolution, near-real-time imagery of large geographic areas.

A disruption in the ionosphere known as scintillation has the potential to interfere with UHF satellite communication, on which the Global Hawk system depends. 88th WS staff meteorologists are consulting with the Space Environment Center, Boulder, Colo., and researching improved methods of providing ionospheric scintillation forecasts to the users of the Global Hawk system. They are leveraging the expertise at AFIT to look into thesis work that may help answer questions about the affects of clouds at flight level for this UAV.

The 88th WS staff also provided support to Global Hawk for Operation ENDURING FREEDOM. A GH mission was delayed for 24 hours based on the weather forecast. They exploited the weather, thus maximizing the capabilities of the GH in a successful mission for theater commanders. Until the GH is fully fielded, the 88th WS will continue involvement with operational test and evaluation efforts.

The 88th WS is working with Aeronautical Systems Center and DoD contractors on the many environmental parameters that relate to the effectiveness of Unmanned Combat Air Vehicles. These include rain, ice, humidity, temperature, and other parameters. Staff meteorologists will continue to be involved in the development efforts of the UCAV as it proceeds through its spiral development. The objective with early involvement in the development of the UCAV is to identify and mitigate any weather impacts to this platform and its systems by utilizing existing and future technologies.

The 88th is also involved with efforts to improve the forecasting of stratospheric turbulence. Staff meteorologists are working with Cooperative Institute for Research in the Atmosphere to use data from the Advanced Microwave Sounding Unit. They will be looking at the brightness temperature data from the polar orbiting device to see how well it identifies the turbulence that impacted the aircraft. The AMSU provides data for more than 10 levels in the stratosphere, for at least four times per day over one location. These changes in temperature are directly related to the turbulence.

Efforts are currently underway to evaluate a proposal from a DoD contractor for a forward looking Infra-red camera that could give pilots four minutes of advance warning for oncoming turbulence, based on changes in temperature profiles and inversions seen by the camera that have been recognized in previously obtained signatures. Staff meteorologists are also involved with wind profiler and microwave satellite technology initiatives to help detect stratospheric turbulence. As part of the overall effort to maximize these emerging technologies, the 88th WS has to frequently bring the technological and user communities together.

These are just a few examples of the many areas the 88th Weather Squadron weather specialist contribute to the U.S. defense. Their efforts ensure today's weapon systems and future platforms and systems are prepared for whatever mother nature throws at them.

50 Years of MODELS

Symposium on the 50th Anniversary of Operational Numerical Weather Prediction set for next summer

The National Centers for Environmental Prediction, Air Force Weather Agency, Fleet Numerical Meteorology and Oceanography Center, National Weather Association, and American Meteorological Society will co-sponsor a "Symposium on the 50th Anniversary of Operational Numerical Weather Prediction." The symposium is June 14-17, 2004, at the Inn and Conference Center, University of Maryland in College Park, Md.

This event celebrates a half-century of operational numerical weather prediction initiated by the formation of the Joint Numerical Weather Prediction Unit in 1954 by elements of the U.S. Air Force, Navy, and Weather Bureau. The pioneering development by the JNWPU to exploit computer technology for operation weather forecasting paved the way for improvements in forecast skill to support the nation's well-being, economy and national defense.

The symposium features a Historical Overview; Evolution of Forecast Models; Evolution of Supercomputers and Data Assimilation Methods; From Model Predictions to Forecasters: Then and Now; Long-range Forecasting; and The Future of NWP. Sessions will include invited papers, poster and oral presentations, and panel discussions.

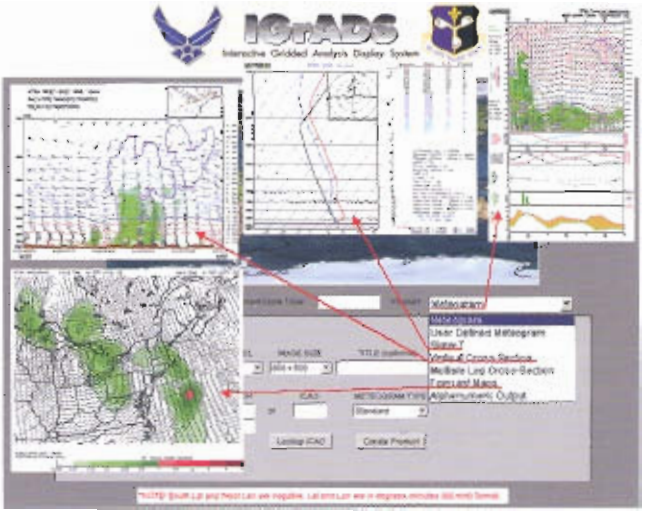
You may view the preliminary program, registration, hotel, and general information on the symposium website at http://www.ncep.noaa.gov/JNWPU50/ and the AMS website http://www.ametsoc.org after Oct. 1, 2003.

Please submit your abstract electronically to Eugenia Kalnay at ekalnay@atmos.umd.edu and Ken Carey at kcarey@mitretek.org by Nov. 1, 2003. Extended manuscripts will be due by March 6, 2004.

For further information or suggestions to enhance this symposium, please e-mail Ken Carey or Eugenia Kalnay.

JAAWIN
It's Worth a Closer Look

By Tech. Sgt Ray Nowrocki
AFWA Current Operations Branch



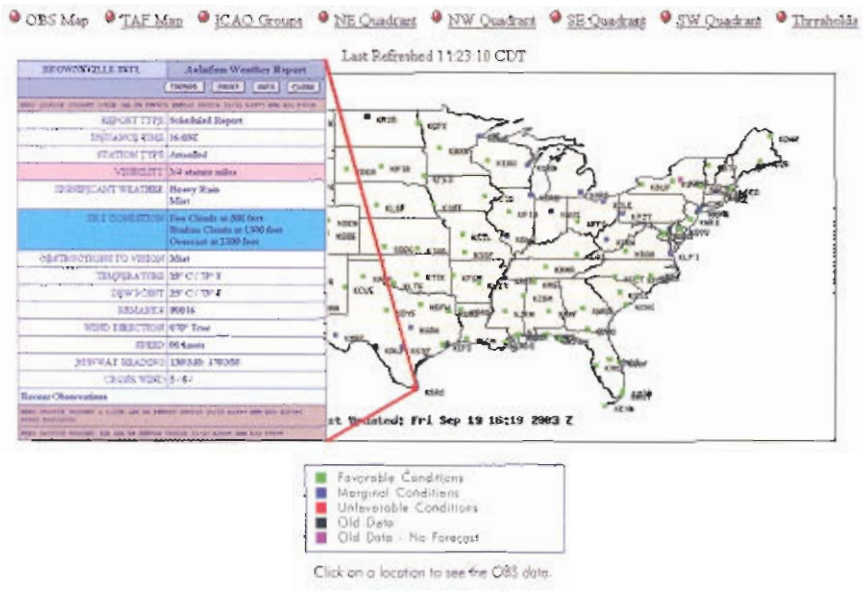
What can the Joint Air Force and Army Weather Information Network, or JAAWIN, do for you? If you are deployed, working at a Combat Weather Team or Operational Weather Squadron, or providing operational weather information for the Army, you have many weather tools at your fingertips. Hopefully, a tool you rely on for up to date weather data is JAAWIN. If not, then this article will describe some of the JAAWIN capabilities that can dramatically help you accomplish your mission.

During my recent deployment as a station chief during Operation IRAQI FREEDOM, I was surprised to see how little my fellow warfighters knew about all the products and services available via JAAWIN. I shared my knowledge of JAAWIN not only with my fellow weather specialists, but also with my flying customers. Both were pleasantly surprised with the different tools now available on JAAWIN.

In March of 2002, JAAWIN was redesigned to provide easier navigation for finding products and services and to add additional products and capabilities. The customer statistics substantiate the network's easier use. In February of 2002 our unclassified servers had 3.3 million hits and 164 Gigabytes of data of downloaded data. This jumped to 8.5 million / 258 Gigabytes in June 2002. The totals soared to 13.2 million hits and 745 Gigabytes downloaded in July 2003.

JAAWIN's current capabilities far exceed those of just a few years ago. JAAWIN is more than a tool for calling up observations/forecasts, displaying METSAT images or a meteogram. JAAWIN allows the warfighter to develop tailor made products specially geared to their mission.

The Current Operations Branch of the Air Force Weather Agency, along with JAAWIN developers, have worked hard to



Above, the Interactive Gridded Analysis Display System is a unique tool that allows the user to display a wide variety of products to include worldwide meteograms, model derived Skew-Ts, vertical cross sections, forecast maps and alphanumeric outputs from a variety of weather models. Users have options such as selecting model type, forecast valid time, image size just to name a few. Users can access IGrADS from any Theater/Models/IGRADS.

Right, The Metwatch Map is an interactive tool that allows users to geographically access both observations and forecasts. Each location has a color assigned to it based on the current condition. Users can click on the colored box to see the most recent observation or forecast. Currently, the Metwatch Map functionality is only available in the Continental U.S. and Southwest Asia theaters. Future plans call for all theaters to have a Metwatch Map.

provide a useful and valuable tool for the weather warfighter. Here are a few brief overviews of some of the unique products and services available through JAAWIN:

IGrADS

The Interactive Gridded Analysis Display System is a unique tool that allows the user to display a wide variety of products to include near worldwide meteograms, model derived Skew-Ts, vertical cross sections, forecast maps and alphanumeric outputs from a variety of weather models. Users have options such as controlling model type, model run time and image size just to name a few. Users can access IGrADS from the Theater links through the Models/ IGRADS drop-down menus.

WATCH MAP

The Metwatch Map is an interactive tool that allows users to geographically access both observation and forecast. Each location has a color assigned to it based on the current condition. Users can click on the colored box to see the most recent observation or forecast. Currently, the Metwatch Map functionality is only available in the Continental U.S. and Southwest Asia theaters. Future plans call for all theaters to have a Metwatch Map. Users can access the Metwatch Map from CONUS or SW Asia theaters by clicking Surface Analysis/Metwatch Map. Users may also request a new site be added to the map by contacting AFWA's Current Requirements Branch.

DUST MODEL

Also known as the Dust Transport Application, this useful tool was developed through cooperation between Headquarters AFWA, the University of Colorado, and Johns Hopkins Applied Physics Laboratory. Incorporating AFWA's MM5 data along with data from the Community Aerosol Research Model has resulted in a unique tool in helping to forecast dust across the SW Asia, Africa and Asia theaters. These products can be found on the Environmental Events menu. Some of the forecast strengths are of the Dust Transport Application are:

- Excellent at forecasting synoptic scale dust events
- Overall Probability of Detection is between 55-70 percent
- Excellent forecast capability with southwestern Afghanistan dust events; very low false alarm rates
- Highest forecast skill over north central Africa where there are significant and well defined source regions
- Projects track of dust clouds over both land and sea providing key information on potential war fighter impacts

As the weather warfighter's role in today's unpredictable world expands, JAAWIN's capabilities and functionality also continues to grow. The proud members of AFWA will continue to work hard ensuring JAAWIN meets the high demands of the weather warfighters.

Look for future articles on what's new with JAAWIN's products and services. If you have any suggestion on improvements or comments about JAAWIN, please send your feedback to xorc@afwa.af.mil.

Ken Smith, Science Applications International Corporation, Air Force Weather Agency.

JAAWIN in "Good Hands"

By Master Sgt. Miles Brown
AFWA Public Affairs

The Joint Air Force and Army Weather Information Network doesn't just run itself. The weather community uses this valuable weather forecasting tool only with the help of the Air Force Weather Agency's Current Requirements Branch, and more specifically, Ken Smith.

Ken Smith, a Science Applications International Corporation employee and an operations weather requirements manager, is the main liaison between JAAWIN users and the contracted team who initially created the site. The contracted team is now responsible for making improvements to and maintaining JAAWIN, but Smith's involvement goes back to its roots – AFWIN.

"I have been involved with JAAWIN from the start, back when it was on a Creighton University server in the mid 1990s," said Smith.

Back then it was called Air Force Weather Information Network, and Smith was part of the team effort that moved the network to AFWA and designed what is now JAAWIN. In 2001, he and the contract team undertook the task of redesigning the original JAAWIN. After months of work, the team created a system that was much more user-friendly and had additional capabilities.

As the main liaison for JAAWIN, Smith listens to customer's suggestions and requests for new capabilities. He then develops requirement documents that give the contracted team "blueprints" to make the changes.

"I work with the contractor to take customer's requests and make them reality as quickly and efficiently as possible," said Smith.

Additionally, Smith sends out, via e-mail, a weekly JAAWIN Visualization Update. This product helps keep network users informed of the most recent changes to the network and any improvements or new capabilities.

If you would like to be added to the mailing list for the JAAWIN Visualization Updates or have suggestions for improvements to JAAWIN, contact the Current Requirements Branch through the link on the network. You can also contact Smith directly via e-mail at Kenneth.smith@afwa.af.mil.

The Operational Requirements Division, Web Services Branch, and the JAAWIN contractor will continue to meet, and hopefully exceed, all of your weather information needs. The team at AFWA is dedicated to make JAAWIN the "go to" tool for today's weather specialists, wherever the forecast takes them.

Strategic Weather Operations: "Pentagon Weather"

By 1st Lt. Paul Lee
AFOG Staff Weather Officer

Deep within the Pentagon, with no windows to the outside world, a group of military meteorologists are taking the 'one theater, one forecast' concept to a whole new level. Stationed within the vortex of a constantly changing political and operational climate, the expertise of the Weather Operations Division is sought within the Pentagon and throughout the U.S. government.

The Weather Operations Division is a component of the Air Force Operations Group – a field operating agency, under the Directorate of Operations and Training.

Maj. JB Hennessey, chief, Weather Operation Division, calls his division "the least-known weather office in the Air Force." Little known for sure, but his staff of seven officers and four NCOs can claim one of the most diverse missions in Air Force Weather. They collect, analyze, report and provide environmental assessments on DoD operations to a variety of military organizations within the Pentagon and beyond. This information is a critical factor in both intelligence analysis and strategic planning.

In addition to its Pentagon location, members of the division also work at an off-site undisclosed location. Identified as OL-A, AFOG, they provide highly specialized, day-to-day support to the White House, as well as tailored products to support operational surges and Presidential travel. Their mission is truly a joint one with Navy aerographer mates working side-by-side with Air Force forecasters.

Over the past two years, OL-A, AFOG, has provided local weather decision advice to Camp David and Raven Rock Mountain complex. This unit has dramatically expanded its mission by incorporating more of the White House Military Office's operational weather requirements into its day-to-day operations. Capt. Mike Holmes leads this team, and views them as an outstanding example of cooperation between AFW and Navy METOC.

"In a nutshell," Holmes said, "this unit of handpicked Navy and Air Force forecasters pushes operational weather data to the WHMO, who in turn leverages that information to expedite a timely and effective execution of Presidential events and travel."

In addition to providing situational awareness to the White House, both locations provide worldwide weather updates to the Congress and other senior government leaders. They are also charged to provide weather information to DoD activities within the National Capital Region and at the Alternate Joint Communications Center.

"Given everyone we are tasked against," said Hennessey, "we sometimes wonder; who don't we work with?"

Describing the Pentagon unit's main job as falling outside of published weather doctrine, Hennessey said, his division collects information and weather products from every unified command METOC staff, every air component staff weather office, and every OWS, as well as other sources on a daily basis.

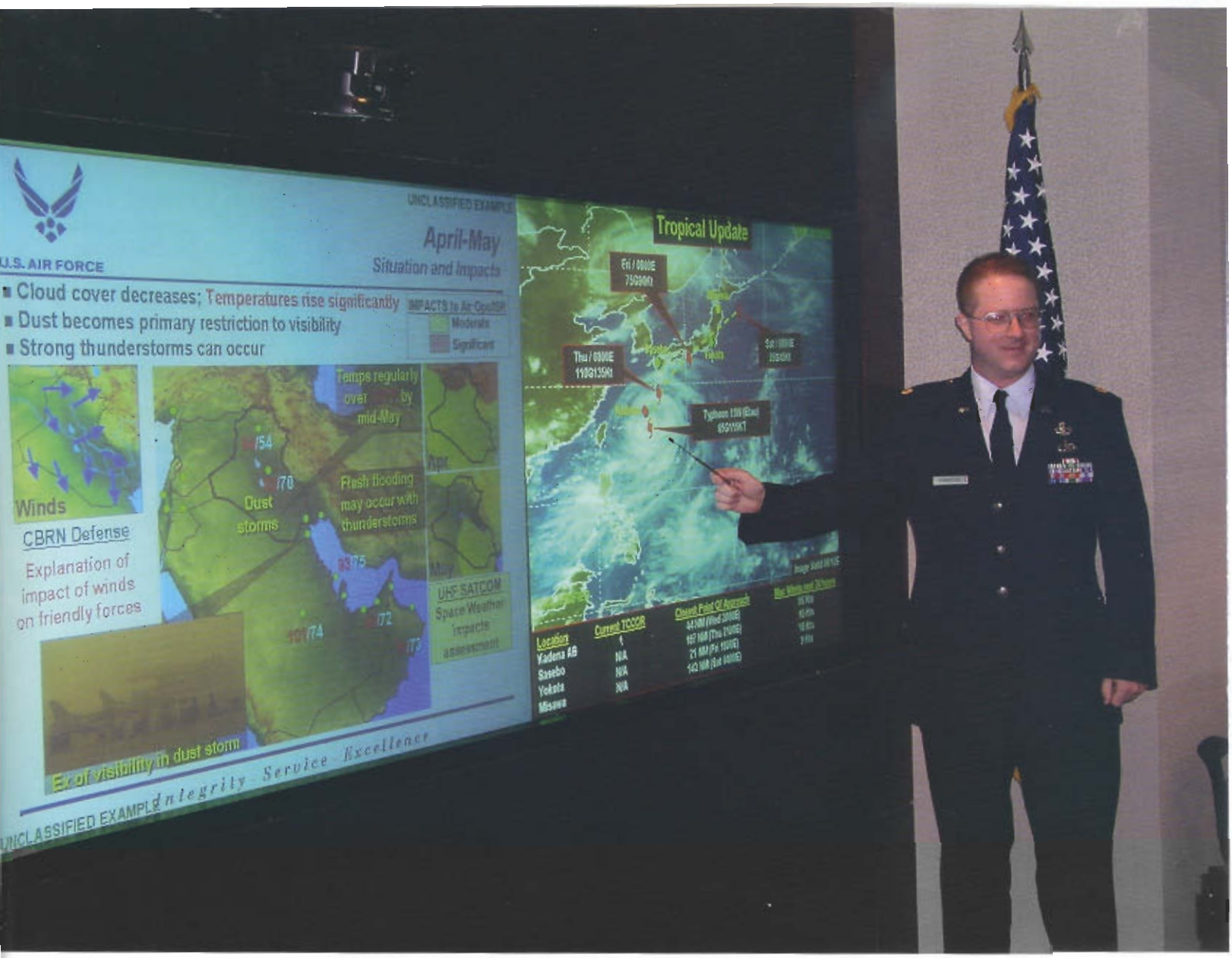
"Outside of the Tanker Airlift Control Center at Scott AFB, Ill., we are probably the only weather unit that looks at worldwide weather all the time," Hennessey said.

After the data is collected, it is packaged to meet the varying requirements of the organizations it supports.

"We tailor our products to ensure the forecasts and the assessed impacts on operations are clear and logical," Hennessy added, "so that senior military and civilian leaders can quickly and assuredly make strategic and tactical decisions."

The end goal of the worldwide METOC review is to deliver a consistent weather message from every unified command to the senior leadership of the DoD twice a day.

AFOG Weather works closely with, but is not part of, the Directorate of Weather. While they both fall under the Deputy Chief of Staff for Air and Space Operations, Brig. Gen. Thomas E. Stickford. General Stickford's staff tackle the issues of weather policy, programs and functional management, while the Weather Operations Division is the operational weather unit for the Pentagon. Their mission was placed in the spotlight when our country was attacked in 2001.



Maj. JB Hennessey, chief of the Weather Operations Division, presenting an Air Force Operations Group weather capabilities briefing. *Photo courtesy of Pentagon Weather Operations Division.*

On Sep. 11, 2001, three of the division's weather specialists were on duty when the terrorist attack hit the Pentagon. They immediately fed information to the Secretary of the Air Force and the Chief of Staff on the impacts of weather on any potential combat air patrols throughout the CONUS. Simultaneously, they provided critical weather situational awareness for the evacuation of the Headquarters Air Force Crisis Action Team, thus ensuring the continuity of operations for the Air Force and DoD senior leadership.

Within days of operations returning to the Pentagon, the Joint Staff J2 and J3 planners were incorporating AFOG Weather's analysis and predictions into the plans that eventually became Operation ENDURING FREEDOM.

"It was during this time we developed a series of climatology briefings, which have become our signature products," said Hennessey. One of the briefings given to Maj. Gen. Walter Buchanan, was used to validate the force structure deployed to U.S. Central Command, ensuring the best assets were available to maximize capabilities in the harsh winter environment of Central Asia.

According to Hennessey, after OEF was well under way, the division shifted its attention to the next big event on the horizon, Iraq.

"We developed a comprehensive climatology briefing on Iraq, which was adopted by USCENTCOM as their standard climatological briefing for Iraq," said Hennessey. The product is so useful, that he was asked to present the briefing to USCENTCOM and component intelligence planners during the final planning for Operation IRAQI FREEDOM.

"During OIF, we were asked for weather products by Secretary of Defense Rumsfeld for use in meetings with the President, and on one occasion, the Prime Minister of Great Britain," he added.

"We are the little-known gem of Air Force Weather," said Hennessey. "While we may be the ones on the Chief's radar screen, we could not do our mission without all of AFW behind us."

Remember the product you put together at a hub or the weather briefing prepared for your local commander, may show up in the Chairman, Joint Chiefs of Staff or the Secretary of Defense's hands tomorrow. Y

Airman swaps stripes for wings

By Susan Griggs
81st Training Wing Public Affairs

Less than two years ago, Staff Sgt. Jerry Bennett raised his eyes to the sky as a weather forecasting instructor. Today, he takes to the sky as an Air Force pilot.

2nd Lt. Bennett completed three weeks of C-21 training with the 45th Airlift Squadron, just blocks away from the weather training facility here where he taught from March 2000 to October 2001.

"When Jerry first approached us in the schoolhouse as a staff sergeant weather instructor and stated that what he really wanted to do was fly, I'll admit there was a little skepticism that the Air Force would support him at that stage in his career," recalled Maj. Thomas Lyga, 335th Training Squadron commander.

"However, he had a dream, he was determined, and by the way, he turned out to be very good at that pilot thing," Lyga added. "He's a true Air Force success story, and I couldn't be more proud of him."

"Over the years, I briefed a lot of pilots, and before long, I aspired to be one, too," said Bennett, a 12-year Air Force member. "My weather training definitely has been beneficial in preparation for this career move."

While teaching here, Bennett was selected for the Bootstrap program and given time to complete a bachelor's degree in geography at the University of Nebraska. After graduating in August 2001, he was selected for Officer Training School.

Next, he headed to Florida for six months of joint undergraduate pilot training at Pensacola NAS, where only one other prior-enlisted member was in his class. After graduation, he headed to Vance AFB, Okla., for advanced training on T-1 tanker/cargo planes.

"I had some great opportunities and some wonderful commanders who guided me along the way," said Bennett, who will move on to a new assignment as a C-21 pilot at Peterson AFB, Colo.

Major Life Change

The following Air Force Weather professionals were selected for promotion to Major during the 2003 promotion cycle:

Ariel Acebal, Det. 5, Palehua Hawaii
Steven Callis, AFIT, Wright Patterson AFB, Ohio
Kenneth Cloys, 28th OWS, Shaw AFB, S.C.
Lisa Coleman, 366th OSS/OSW, Mountain Home AFB, Idaho
Anthony Edens, 28th OWS, Shaw AFB, S.C.
Richard Gonzalez, AFIT, Wright Patterson AFB, Ohio
Juan Hidalgo, 8th OSS/OSW, Kunsan AB, Korea
Throy Hollis, 355th OSS/OSW, Davis-Monthan AFB, Ariz.
Troy Johnson, HQ AFWA, Offutt AFB, Neb.
James Jones, HQ AFWA, Offutt AFB, Neb.
Darrell Kerr, 88th WS, Wright Patterson AFB, Ohio
Robert LeeJoice, 17th OWS, Hickam AFB, Hawaii
Darryl Leon, 86th OSS/OSW Ramstein AB, Germany
Morgan Mackey, 9th OSS/OSW, Beale AFB, Calif.
Randy Maraj, 36th OSS/OSW, Andersen AFB, Guam
Jason Patla, 325th OSS/OSW, Tyndall AFB, Fla.
Daniel Pawlak, Pennsylvania State University, Pa.
Leon Perkowski, 48th OSS/OSW, Lakenheath, UK
Steve Renner, HQ AFWA, Offutt AFB, Neb.
Michael Richman, MSD/AOW, Maxwell AFB, Ala.
Neil Sanger, 374th OSS/OSW, Yakota AB, Japan
Jonathan Thompson, HQ AETC, Randolph AFB, Texas

A "STEP" ahead of the rest

Tech. Sgt. Shadrick Wynn (right), Operations Directorate information manager, HQ Air Force Weather Agency, Offutt AFB, Neb., oversees the installation of upgrade software by Senior Airman William Kaufman, computer specialist, Information and Communication Directorate, HQ AFWA.

Wynn was AFWA's 2003 selection for promotion under the Stripes for Exceptional Performers program. In addition to usual duties of directing the massive electronic message traffic and taskers for the Directorate, he serves as the director's Resource Advisor and Information Systems Security Officer. In the last year alone, Wynn has installed more than 50 system patches to all the computers in the Directorate's main office. His efforts ensured complete time compliance with all security and software upgrades that keeps the systems running at optimum levels.

According to one of Wynn's appraisals written by Col. Bill Burnette, AFWA vice commander, "[Shad] is the total package...simply the best [Information Manager] I've worked with in my 23 years of service." *Photo by Master Sgt. Miles Brown.*

NCOs on the RISE

The following Air Force Weather Noncommissioned Officers were selected for promotion during 2003 to the ranks of Master Sergeant and Technical Sergeant, respectively

Selected for Promotion to Master Sergeant

Michael Albanese, NAIC,
Wright-Patterson AFB, Ohio
Maurice Arnold, 1st OSS/OSW,
Langley AFB, Va.
John Bondi, 25th OWS,
Davis-Monthan AFB, Ariz.
George Booker Jr., 13th ASOS/WF,
Ft. Carson, Colo.
Ronald Bradford Jr., 25th OWS,
Davis-Monthan AFB, Ariz.
Kenneth Brooks, USAFE OWS,
Sembach AB, Germany
Kelly Buckley, 488th IS, Mildenhall, UK
Robert Clarke, 51st OSS, Osan AB, Korea
Fred Cookerly, USAFE OWS,
Sembach AB, Germany
James Darlow, 6th OSS/OSW,
MacDill AFB, Fla.
Richard Detrafford, 15Oth WS,
Scott AFB, Ill.
Mark Ditter, 17th OWS,
Hickam AFB, Hawaii
Cynthia Farmer, HQ AFWA,
Offutt AFB, Neb.
William Garlington, 25th OWS,
Davis-Monthan AFB, Ariz.
Michael Gilbert, Det. 2, 10th CWS,
Ft. Campbell, Ky.
Mitchell Gilbreath, 26th OWS,
Barksdale AFB, La.
Terri Grebel, USAFE OWS,
Sembach AB, Germany
James Haavisto, Det. 2, 607th WS,
Camp Humphreys, Korea
Richard Hollingsworth, 20th OWS,
Yokota AB, Japan
Robert Honadle, 20th OWS,
Yokota AB, Japan
Alexander Hubert, USAFE OWS,
Sembach AB, Germany
Jeffrey Huston, HQ AFWA,
Offutt AFB, Neb.
Terrence Jones, 26th OWS, Barksdale AFB, La.
Frank Klein, USAFE OWS,
Sembach AB, Germany
Imo Las, HQ AFWA, Offutt AFB, Neb.
Clifford Lucente, 31st CCS,
Tinker AFB, Okla.
Wesley Mathias, 6th OSS/OSW,
MacDill AFB, Fla.
Gregory Matthews, OC-ALC,
Norman, Okla.
William McQuillen, HQ AFWA,
Offutt AFB, Neb.
Terry Mest, 11th OWS,
Elmendorf AFB, Alaska
Michael Mohr, 335th TRS,
Keesler AFB, Miss.
Dennis Ramsdell Jr., 335th TRS,
Keesler AFB, Miss.
Ronald Richards Jr., AFCWC, AFWA,
Hurlburt Field, Fla.
Richard Ritter, 335th TRS,
Keesler AFB, Miss.
Larry Rodgers, 25th OWS,
Davis-Monthan AFB, Ariz.
Michael Sadowsky, HQ AFWA,
Offutt AFB, Neb.
Charles Smith, 335th TRS,
Keesler AFB, Miss.
Rayne Smith, HQ AFWA, Offutt AFB, Neb
Gary Stevenson, 16th OSS/OSW,
Hurlburt Field, Fla.
Rodney Stovall, 335th TRS,
Keesler AFB, Miss.
John Suther, USAFE OWS,
Sembach AB, Germany
Rubi Torneros, Det. 2, 607th WS,
Camp Humphreys, Korea
Wallace Tumblin, 17th ASOS,
Ft. Bergstrom, Co.
David Tyler, 3rd ASOS,
Ft. Wainwright, Alaska
Huy Vu, 17th OWS, Hickam AFB, Hawaii
Thomas Walker, HQ AFWA,
Offutt AFB, Neb.
Donald West, HQ AFWA, Offutt AFB, Neb.
Teddy Wykle Jr., Det. 5, AFWA,
Palehua, Hawaii

Selected for Promotion to Technical Sergeant

Jacob Arfa, 412th OSS/OSW,
Edwards AFB, Calif.
Steven Baldinger, 335th TRS,
Keesler AFB, Miss.
Jeffrey Ball, AFCWC, AFWA,
Hurlburt Field, Fla.
Steve Balli, 335th TRS, Keesler AFB, Miss.
Christine Biggs, 335th TRS, Keesler AFB, Miss.
Bruce Boling, 314th OSS/OSW,
Little Rock AFB, Ark.
Sharon Burnett, Det. 2, 607th WS,
Camp Humphreys, Korea
Christopher Campbell, 319th OSS/OSW,
Grand Forks AFB, N.D.
Jennifer Chance, 22nd OSS/OSW,
McConnell AFB, Kan.
Carl Christianson, 28th OWS, Shaw AFB, S.C.
James Coker, 12th OSS/OSW,
Randolph AFB, Texas
Johnnie Cornett, USAFE OWS,
Sembach AB, Germany
Trevor Crane, HQ AFWA, Offutt AFB, Neb
Richard Cummings, 25th ASOS/DOW,
Wheeler AFB, Hawaii
James Davis, 62nd OSS/OSW,
McChord AFB, Wash.
Christopher Decorte, Det. 2, 607th WS,
Camp Humphreys, Korea
David Elliott, HQ AFWA, Offutt AFB, Neb.
Matthew Fox, 92nd OSS/OSW,
Fairchild AFB, Wash.
John Gaona, USAFE OWS,
Sembach AB, Germany
Carl Garcia, HQ AFWA, Offutt AFB, Neb.
Robert Gaylord, 5th OSS/A-3W,
Minot AFB, N.D.
Edwin Gideons, 24th STS, Pope AFB, N.C.
Robert Glasgow, HQ AFWA, Offutt AFB, Neb.
Kelly Gould, Det. 5, 7th WS,
Kaiserbach, Germany
Rosswald Guevarra, 20th OWS,
Yokota AB, Japan
Christopher Hahn, HQ AFWA,
Offutt AFB, Neb.
Kenneth Harris, Det. 12, 7th WS,
Vicenza AB, Italy
John Harrison Jr., 17th OWS,
Hickam AFB, Hawaii
Thomas Hauser, 436th OSS/OSW,
Dover AFB, Del.
Brent Heykoop, HQ AFWA,
Offutt AFB, Neb.
James Hicks, 89th OSS/OSW,
Andrews AFB, Md.
Bart Hopkins, Det. 3, 7th WS,
Illesheim, Germany
Robert Hubler, 82nd OSS/SOQS,
Langley AFB, Va.
Edward Jackowski Jr., 11th OWS,
Elmendorf AFB, Alaska
Letonia James, 17th OWS,
Hickam AFB, Hawaii
Nancy Johnson, 335th STS,
Keesler AFB, Miss.
Beate Kinzel, Det. 2, 7th WS,
Hanau AB, Germany
Richard Koch, 72nd OSS/OSW,
Tinker AFB, Okla.
Scott Kornunyos, 72nd OSS/OSW,
Tinker AFB, Okla.
James Kramer, Det. 1, AFWA,
Learmonth, Australia
Gary Lam, 17th OWS, JTWC,
Pearl Harbor, Hawaii
Kenneth Lester Jr., OL-A, 374th OSS,
Camp Zama, Japan
Dave Lewis, 7th WS, Heidelberg, Germany
Joseph Locasto, 305th OSS/OSW,
McGuire AFB, N.J.
Scott Lorincz, 100th OSS/OSW,
Mildenhall, UK
James Lumpkin Jr., 97th OSS/OSW,
Altus AFB, Okla.
Michael Lwanga, 37th OSS,
Lackland AFB, Texas
Ryan MacDonald, Det. 2, 7th WS,
Hanau AB, Germany
Damion Madison, 18th OSS/OSW,
Kadena AB, Japan
Scott Maier, 52nd OSS/OSW,
Spangdahlem AB, Germany
Raul Manansquil, USAFE OWS,
Sembach AB, Germany
Michael Mazzeo-Mambala, 48th OSS/OSW,
Lakenheath, UK
John Mcgeogan, Det. 5, AFWA,
Palehua, Hawaii
Rodney Meeler, HQ AFWA, Offutt AFB, Neb.
Libby Mendez, 75th OSS/OSW,
Hill AFB, Utah
Stephen Meunier, 15th OWS, Scott AFB, Ill.
Drew Moore, 51st OSS/OSW, Osan AB, Korea
Roscoe Moore, HQ AFWA, Offutt AFB, Neb.
Nathan Nylander, OL-A, 607th WS,
Seoul AB, Korea
Michael Oates, 614th SOPG,
Vandenberg AFB, Calif.
Dennis Palmer, HQ AFWA, Offutt AFB, Neb.
Michael Palmer, 335th TRS,
Keesler AFB, Miss.
Robert Patterson, Jr., HQ AFWA,
Offutt AFB, Neb.
Matthew Perritt, USAFE OWS,
Sembach AB, Germany
Pichai Polprasert, AFCCC, AFWA,
Ashville, N.C.
Antonio Pressley, 3rd OSS/OSW,
Elmendorf AFB, Alaska
Allan Price, Det. 2, 7th WS,
Hanau AB, Germany
Edward Putthrese Jr., HQ AFWA,
Offutt AFB, Neb.
Mark Reed, HQ AFWA, Offutt AFB, Neb.
Darnell Roberts Jr., USAFE OWS,
Sembach AB, Germany
Paul Rogers, 25th ASOS,
Hickham AFB, Hawaii
Joel Rybarczyk, 49th OSS/OSW,
Holloman AFB, N.M.
Emili Sadler, 49th OSS/OSW,
Holloman AFB, N.M.
Michael Schierer, HQ AFWA,
Offutt AFB, Neb.
Jeffery Schultz, HQ AFWA, Offutt AFB, Neb.
Jennifer Shields, 75th OSS/OSW,
Hill AFB, Utah
Owen Shockley, OL-A, 321st STS,
Boblingen City, Germany
Jason Smith, 46th WS, Eglin AFB, Fla.
John Sosa Jr., 24th STS, Pope AFB, N.C.
Richard Stage, AFCCC, AFWA, Ashville, N.C.
Kenneth Sutton, Det. 2, 607th WS,
Camp Humphreys, Korea
Richard Throgmorton, 28th OWS,
Shaw AFB, S.C.
Jeremiah Thunberg, 24th STS,
Pope AFB, N.C.
Joseph Turner III., 11th RS,
Indian Springs, Nev.
Lee Utsey Jr., Det. 2, 607th WS,
Camp Humphreys, Korea
Kelvin Vanwright, 60th OSS/OSW,
Travis AFB, Calif.
Jerod Webb, 335th TRS, Keesler AFB, Miss.
Channing Weinmeister, HQ AFWA,
Offutt AFB, Neb.
Johnny Whitehead Jr., 335th TRS,
Keesler AFB, Miss.
YasmeenWilson, 18th OSS/OSW,
Kadena AB, Japan
Michael Wimmer, 5th OSS/A-3W,
Minot AFB, N.D.

Staff Sgt. Dan Crosby
374th OSS/OSW, Yokota AB, Japan
Forecaster, Mission Execution Forecast Element Lead
Years In Service: 7
Hometown: Tampa, Fla.
Role Model / Why? Roy Leap. He was the local TV weather guy when I was growing up. I remember watching him when I was a kid and telling my Dad that I could do that.
Hobbies: Computer animation, going to the movies, and cooking on my George Foreman grill
Most Memorable AFW Experience: Riding in the back of a CH-47 for nine hours in Korea during a joint exercise between the US Army and the ROK Army. We would land every couple hours or so and I would update the crews and a ROK Army general of any changes in the weather. Then we would get back on the aircraft and fly around some more. It was definitely one of the greatest learning experiences I have ever had during an exercise, mostly because nothing was "simulated."

Weather Warriors

Senior Airman Stephanie Rodriguez
30th WS, Vandenberg AFB, Calif.
Weather Apprentice
Years In Service: 2 years 10 months
Hometown: Austin, Texas
Role Model / Why? My uncle, Emilio Rodriguez. He passionately served in the Armed Forces and represented the United States in an admirable manner to the best of his abilities at all times. His dedication instilled pride, precision, and persistence into my way of life.
Hobbies: Writing, reading, and music
Most Memorable AFW Experience: I arrived at Vandenberg amid preparations for a missile launch. I was able to join in on the action by touring the Western Range Control Center, assisting the weather forecast counter, and helping with the release of several weather balloons. At the end of the day, I had a completely different perspective of the successful launch I witnessed.

Salutes

Retirements

James Beasley Jr., 81st OSF/OSW, Keesler AFB, Miss.
Col. Carl Daubach, HQ AMC, Scott AFB, Ill.
Col. Larry Key, HQ USAF/XOW, Washington D.C.
Col. Dave Urbanski, AFCCC, AFWA, Asheville, N.C.
Senior Master Sgt. David Rose, HQ AMC, Scott AFB, Ill.
Master Sgt. Michael Brooks, HQ AFWA, Offutt AFB, Neb.
Master Sgt. Donald Jeter, HQ AFWA, Offutt AFB, Neb.
Master Sgt. Timothy Lowman, HQ AFWA, Offutt AFB, Neb.
Master Sgt. Tammw Newman, HQ AFWA, Offutt AFB, Neb.
Master Sgt. George Nitso, USAFE OWS, Sembach AB, Germany
Master Sgt. Dene Tribe, USAFE OWS, Sembach AB, Germany
Tech. Sgt. Jeffrey Light, 81st OSF/OSW, Keesler AFB, Miss.
Tech. Sgt. Marry Williams, 81st OSF/OSW, Keesler AFB, Miss.

Awards and Decorations

BRONZE STAR

Capt. William Wilkinson, 6th WF, Ft. Rucker AIN, Ala.
Chief Master Sgt. Freddy Proctor, 181st WF, Carswell ARB, Texas (ANG)
Senior Master Sgt. Allen Williams, 181st WF, Carswell ARB, Texas (ANG)
Master Sgt. Thomas Targaszewski, Det. 5, 10th CWS, Ft. Bragg, N.C.

MERITORIOUS SERVICE MEDAL

Chief Master Sgt. Freddy Proctor, 181st WF, Carswell ARB, Texas (ANG)
Senior Master Sgt. Michael Clark, 57th OSS/OSW, Nellis AFB, Nev.
Senior Master Sgt. David Rose, HQ AMC, Scott AFB, Ill. (3 OLC)
Senior Master Sgt. Douglas Stewart, 181st WF, Carswell ARB, Texas (ANG)
Senior Master Sgt. Allen Williams, 181st WF, Carswell ARB, Texas (ANG)
Master Sgt. James Kelley III, USAFE OWS, Sembach AB, Germany
Master Sgt. George Nitso, USAFE OWS, Sembach AB, Germany

JOINT SERVICE COMMENDATION MEDAL

Master Sgt. Roland Keene, 6th WF, Ft. Rucker AIN, Ala.

AIR FORCE COMMENDATION MEDAL

1st Lt. Barbra Costa, 19th ASOS, Ft. Campbell, Ky.
1st Lt. Dawn Golding, USAFE OWS, Sembach AB, Germany
1st Lt. Jacob Thomas, USAFE OWS, Sembach AB, Germany
1st Lt. Kaitlyn Torbert, 57th OSS/OSW, Nellis AFB, Nev.
Master Sgt. Larry Beck, 181st WF, Carswell ARB, Texas (ANG)
Tech. Sgt. Ronald Beck, 28th OSS/OSW, Ellsworth AFB, S.D.
Tech. Sgt. Curtis Garner, 181st WF, Carswell ARB, Texas (ANG)
Tech. Sgt. Rubi Tornero, USAFE OWS, Sembach AB, Germany
Tech. Sgt. Marry Williams, 81st OSF/OSW, Keesler AFB, Miss.
Staff Sgt. Dominique Atkins, 11th OWS, Elmendorf AFB, Alaska
Staff Sgt. Harry Keiber III, USAFE OWS, Sembach AB, Germany
Staff Sgt. Teresa Heisler, 9th OSS, Beal AFB, Calif.
Staff Sgt. Najimah Jones, 6th WF, Ft. Rucker AIN, Ala.
Staff Sgt. Towa McGee, 97th OSS/OSW, Altus AFB, Okla.
Staff Sgt. Robert Patterson, 181st WF, Carswell ARB, Texas (ANG)
Senior Airman Philip Beda, 181st WF, Carswell ARB, Texas (ANG)

ARMY COMMENDATION MEDAL

Lt. Col. Joseph McCormack, 181st WF, Carswell ARB, Texas (ANG)
1st Lt. Barbra Costa, 19th ASOS, Ft. Campbell, Ky.
Chief Master Sgt. Freddy Proctor, 181st WF, Carswell ARB, Texas (ANG)
Senior Master Sgt. Allen Williams, 181st WF, Carswell ARB, Texas (ANG)
Master Sgt. Larry Beck, 181st WF, Carswell ARB, Texas (ANG)
Staff Sgt. James Butterworth, Det. 1, 7th WS, Illesheim, Germany
Staff Sgt. Robert Patterson, 181st WF, Carswell ARB, Texas (ANG)
Senior Airman McClellan, 181st WF, Carswell ARB, Texas (ANG)
Senior Airman Douglas Nickerson, 181st WF, Carswell ARB, Texas (ANG)

ARMY ACHIEVEMENT MEDAL

1st Lt. Jodi Bergan, 25th ASOS, Wheeler AAF, Hawaii
Staff Sgt. John Rivera, 47th OSS, Laughlin AFB, Texas
Staff Sgt. Paul Rogers, 25th ASOS, Wheeler AAF, Hawaii
Staff Sgt. Kevin Smith, 25th ASOS, Wheeler AAF, Hawaii
Senior Airman Daniel Worden, 25th ASOS, Wheeler AAF, Hawaii

AIR FORCE ACHIEVEMENT MEDAL

Capt. Gregory Barnhart, 11th OWS, Elmendorf AFB, Alaska
1st Lt. Paul Lee, USAFE OWS, Sembach AB, Germany
Master Sgt. Brian Wynn, 18th OSS/OSW, Kadena AB, Japan
Tech. Sgt. Ronald Beck, 28th OSS/OSW, Ellsworth AFB, S.D.
Tech. Sgt. Terry Mest, 11th OWS, Elmendorf AFB, Alaska
Tech. Sgt. Robert Sugden, 28th OSS/OSW, Ellsworth AFB, S.D.
Staff Sgt. Joseph Andaya, 57th OSS/OSW, Nellis AFB, Nev.
Staff Sgt. Burton Conner, 6th WF, Ft. Rucker AIN, Ala.
Staff Sgt. Robert Phillips, 37th OSS/OSW, Lackland AFB, Texas
Senior Airman Michael Adcock, USAFE OWS, Sembach AB, Germany
Senior Airman James Ahern, USAFE OWS, Sembach AB, Germany
Senior Airman Megen Arevalo, 48th OSS/OSW, Lakenheath, UK
Senior Airman Kerri Bartle, USAFE OWS, Sembach AB, Germany
Senior Airman Amanda Burrows, USAFE OWS, Sembach AB, Germany
Senior Airman Kelli Cox, USAFE OWS, Sembach AB, Germany
Senior Airman Corey Floyd, USAFE OWS, Sembach AB, Germany
Senior Airman Jessica Floyd, USAFE OWS, Sembach AB, Germany
Senior Airman Linton Hampton, 80th OSS, Sheppard AFB, Texas
Senior Airman John Kah, 11th OWS, Elmendorf AFB, Alaska
Senior Airman Sarah Kah, 11th OWS, Elmendorf AFB, Alaska
Senior Airman Breanna Mcracle, USAFE OWS, Sembach AB, Germany
Senior Airman Douglas Nickerson, 181st WF, Carswell ARB, Texas (ANG)
Senior Airman Jennifer Ramsey, USAFE OWS, Sembach AB, Germany
Senior Airman Amanda Regler, USAFE OWS, Sembach AB, Germany
Senior Airman William Robinson, USAFE OWS, Sembach AB, Germany
Senior Airman Dianna Smith, 15th OWS, Scott AFB, Ill.
Senior Airman Carle Sturgis, USAFE OWS, Sembach AB, Germany
Senior Airman Kathleen Williams, 55th OSS/OSW, Offutt AFB, Neb.
Airman 1st Class Jennifer Willhite, 48th OSS/OSW, Lakenheath, UK

Education

WEATHER OFFICER'S COURSE

2nd Lt. Margaret Cowden, 25th OWS, Davis-Monthan AFB, Ariz.
2nd Lt. Jason Huffman, 2nd OSS/OSW, Barksdale AFB, La.
2nd Lt. Benjamin Lemke, 26th OWS, Barksdale AFB, La.

WEATHER CRAFTMAN'S COURSE

Tech. Sgt. Kurt Fritz, 28th OWS, Shaw AFB, S.C.
Tech. Sgt. Willis Nelson, 436th OSS/OSW, Dover AFB, Del.
Staff Sgt. Eric Bauer, 28th OSS/OSW, Ellsworth AFB, S.D.
Staff Sgt. William Bennett, 607th WS, Yongsan AIN, Korea
Staff Sgt. Donica Betts, 355th OSS/OSW, Davis-Monthan AFB, Ariz.
Staff Sgt. Jacqulyn Bills, 45th WS, Patrick AFB, Fla.
Staff Sgt. Patrick Brennan, 30th WS, Vandenberg AFB, Calif.
Staff Sgt. Gary Brooks, 28th OSS/OSW, Ellsworth AFB, S.D.
Staff Sgt. Leonard Buckles III, 22nd OSS/OSW McConnell AFB, Kan.
Staff Sgt. Michael Bunting, 62nd OSS/OSW, McChord AFB, Wash.
Staff Sgt. Sharon Burnett, 86th OSS/OSW, Ramstein AB, Germany
Staff Sgt. Publio Casillas, 97th OSS/OSW, Altus AFB, Okla.
Staff Sgt. Jorge Evans, 20th OWS, Yakota AB, Japan
Staff Sgt. Randi Facenda, 55th OSS/OSW, Offutt AFB, Neb.
Staff Sgt. Johnny Flores, 80th OSS/OSW, Sheppard AFB, Texas
Staff Sgt. Nigel Fredericks, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Craig Gaillardet, 49th OSS/OSW, Holloman AFB, N.M.
Staff Sgt. Ryan Glidden, 80th OSS/DOW, Sheppard AFB, Texas
Staff Sgt. Aliva Gumbs, 1st OSS/OSW, Langley AFB, Va.
Staff Sgt. Teresa Heisler, 9th OSS, Beal AFB, Calif.
Staff Sgt. Michael Hermann, 353rd OSS/OSW, Kadena AB, Japan
Staff Sgt. Patricia HrudleAguilera, 27th OSS/OSW, Cannon AFB, N.M.
Staff Sgt. LeTonia James, 17th OWS, Hickam AFB, Hawaii
Staff Sgt. Amanda Johnson, 18th WS, Ft. Bragg, N.C.
Staff Sgt. Brad Jones, 335th TRS/UOA, Keesler AFB, Miss.
Staff Sgt. Brian Kennedy, 89th OSS/OSW, Andrews AFB, Md.
Staff Sgt. Brian Landrum, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Scott Losenicky, 55th OSS/OSW, Offutt AFB, Neb.
Staff Sgt. Brian McDonald, 325th OSS/OSW, Tyndall AFB, Fla.
Staff Sgt. Michelle Moses, AFCCC, AFWA, Asheville, N.C.
Staff Sgt. Matthew Myers, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Joshua Peters, 1st WS, Ft. Lewis, Wash.
Staff Sgt. Robert Phillips, 37th OSS/OSW, Lackland AFB, Texas
Staff Sgt. Kenneth Powers, 22nd OSS/OSW, McConnell AFB, Kan.
Staff Sgt. Alberto Ramirez, 209th WF, Camp Mabry, Texas (ANG)
Staff Sgt. Jeremy Reynolds, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. Duane Robinson, 62nd OSS/OSW, McChord AFB, Wash.
Staff Sgt. Lerjah Rogers, 92nd OSS/OSW, Fairchild AFB, Wash.
Staff Sgt. Michael Ross, 28th OWS, Shaw AFB, S.C.
Staff Sgt. Charles Rushing, Det. 5, 10th CWS, Ft. Bragg, N.C.
Staff Sgt. Anthony Smith, 305th OSS/OSW, McGuire AFB, N.J.
Staff Sgt. William Thomas, 62nd OSS/OSW, McChord AFB, Wash.
Staff Sgt. Stephen Webb, 111th WF, Ellington Field, Texas (ANG)
Staff Sgt. Mitchell Westlund, 46th WS, Eglin AFB, Fla.
Staff Sgt. Glenn Wilbur, 90th OSS/OSW, F.E. Warren AFB, Wyo.

7-LEVEL COURSE
Staff Sgt. Rory Kling, 57th OSS/OSW, Nellis AFB, Nev.
Staff Sgt. Jeffrey Smith, 57th OSS/OSW, Nellis AFB, Nev.

WEATHER FORECASTER APPRENTICE COURSE
Staff Sgt. David Ward, 208th WF, St. Paul, Minn. (ANG)
Senior Airman Clifton Gabois, 165th WF, Louisville, Ky. (ANG)
Senior Airman Zubin Khavarian, 210th WF, March AFB, Calif. (ANG)
Senior Airman Tobin Menard, 26th OWS, Barksdale AFB, La.
Senior Airman Jennifer Williamson, 25th OWS, Davis-Monthan AFB, Ariz.
Airman 1st Class Leslie Champion, 25th OWS, Davis-Monthan AFB, Ariz.
Airman 1st Class Brandon Miller, 26th OWS, Barksdale AFB, La.
Airman 1st Class Jeremy Norris, USAFE OWS, Sembach AFB, Germany
Airman 1st Class Luke Orodera, 17th OWS, Hickam AFB, Hawaii
Airman 1st Class James Tarragano, USAFE OWS, Sembach AFB, Germany
Airman 1st Class Willis Warren, USAFE OWS, Sembach AFB, Germany
Airman Nicolette Bouchey, 28th OWS, Shaw AFB, S.C.
Airman Lindsey Haugher, USAFE OWS, Sembach AFB, Germany
Airman John Radovan, 15th OWS, Scott AFB, Ill.
Airman Sarah Uhlenhake, USAFE OWS, Sembach AFB, Germany

COMBAT WEATHER TEAM OPERATIONS COURSE
Senior Airman Rachael Eichelberger, 25th ASOS, Wheeler AAF, Hawaii

COMBAT LIFE SAVER COURSE
Tech. Sgt. Philip Turner, Det. 6, 7th WS, Wiesbaden, Germany
Staff Sgt. Steve Harmon, Det. 6, 7th WS, Wiesbaden, Germany
Senior Airman Clayton Harris, Det. 6, 7th WS, Wiesbaden, Germany

M-2 .50 CALIBER MACHINE GUN QUALIFICATION
Capt. Jason King, Det. 6, 7th WS, Wiesbaden, Germany
Senior Airman Clayton Harris, Det. 6, 7th WS, Wiesbaden, Germany

MK-19 GRENADE LAUNCHER QUALIFICATION
Maj. Scott Magnan, Det. 6, 7th WS, Wiesbaden, Germany
Staff Sgt. Steve Harmon, Det. 6, 7th WS, Wiesbaden, Germany

OBSERVER MAGAZINE: *What's Next*

Is your unit's listing in the 2003 Almanac outdated or out right wrong? Don't let this happen again next year. The next deadline for your Observer magazine Jan/Feb 04 Almanac is Nov. 7, 2003. Your HQ MAJCOM Director of Weather will send requests for updates with a format template to all their units. Please send all submissions through your MAJCOM to ensure your unit's current information is printed in next year's Almanac.

WRS-88D PUP MANAGERS COURSE
2nd Lt. Kimberly Matwick, 80th OSS/DOW, Sheppard AFB, Texas
Staff Sgt. Johnny Flores, 80th OSS/DOW, Sheppard AFB, Texas
Staff Sgt. Ryan Glidden, 80th OSS/DOW, Sheppard AFB, Texas

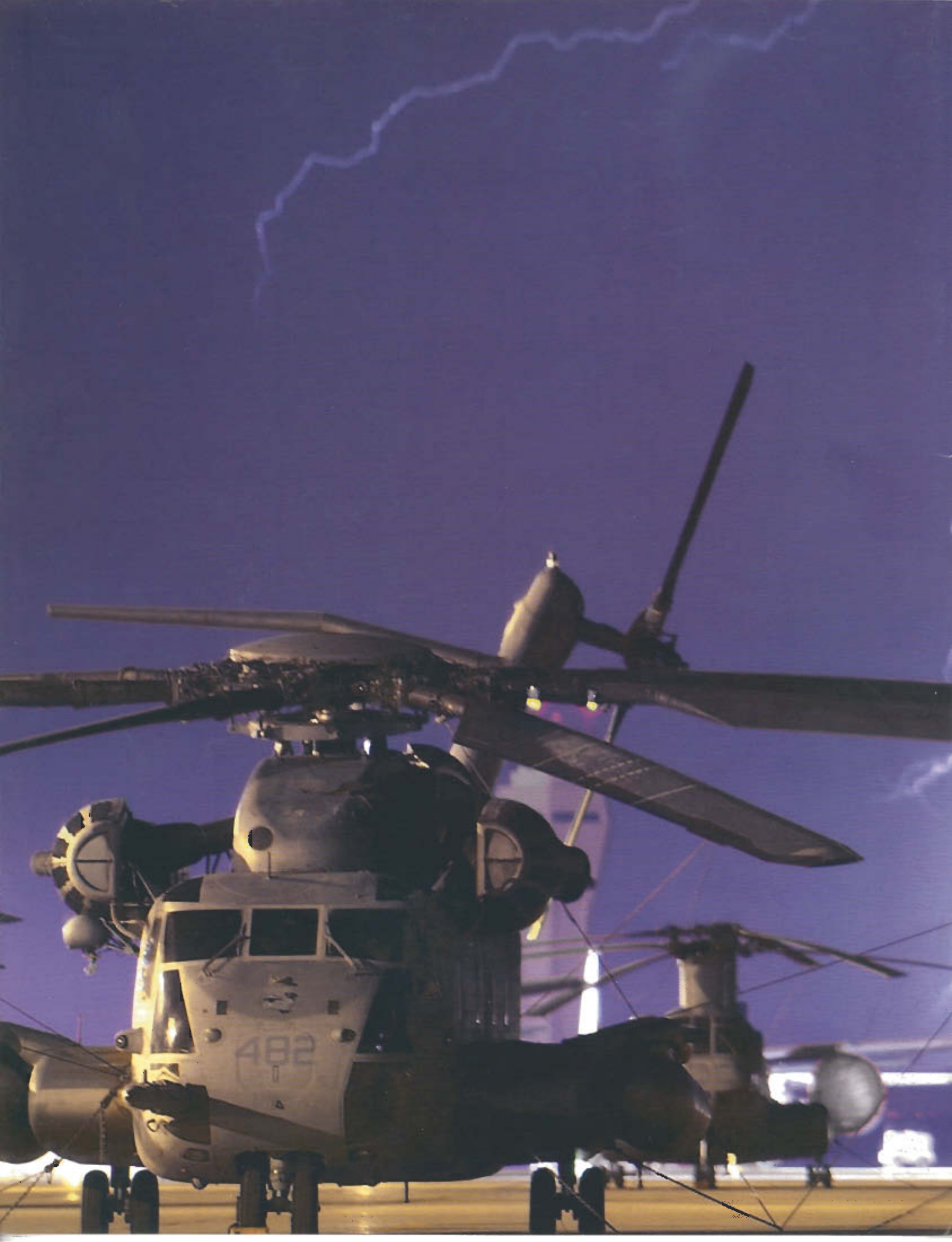
CONTINGENCY/WARTIME PLANNING COURSE
Maj. James Ulman, HQ AMC, Scott AFB, Ill.

NCO ACADEMY
Tech. Sgt. Michael Cassady, HQ AFWA, Offutt AFB, Neb.
Tech Sgt. Fred Cookerly, USAFE OWS, Sembach AB, Germany
Tech. Sgt. Dean Matuszewski, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Eddie Menzies, USAFE OWS, Sembach AB, Germany
Tech. Sgt. Paula Owen, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Robert Sugden, 28th OSS/OSW, Ellsworth AFB, S.D.
Tech. Sgt. Kelly Warren, HQ AFWA, Offutt AFB, Neb.

AIRMAN LEADERSHIP SCHOOL
Staff Sgt. Benjamin Ferguson, USAFE OWS, Sembach AB, Germany (Distinguished Graduate)
Staff Sgt. Salvatore Mardis, USAFE OWS, Sembach AB, Germany
Staff Sgt. Kevin Smith, 25th ASOS, Wheeler AAF, Hawaii
Senior Airman Eric Burgher, 25th ASOS, Wheeler AAF, Hawaii
Senior Airman Nathanael Farrington, USAFE OWS, Sembach AB, Germany
Senior Airman Melissa Mardis, USAFE OWS, Sembach AB, Germany
Senior Airman Matthew Mitchell, 45th WS, Patrick AFB, Fla. (Leitow Award)
Senior Airman Richard Sylvester, AFCCA, AFWA, Asheville, N.C. (Outstanding Academic Achievement and Distinguished Graduate)
Senior Airman John Stein, 57th OSS/OSW, Nellis AFB, Nev.
Senior Airman Aaron Wood, 11th OWS, Elmendorf AFB, Alaska (Academic Excellence Award)
Senior Airman Daniel Worden, 25th ASOS, Wheeler AAF, Hawaii (Distinguished Graduate)

SQUADRON OFFICER SCHOOL
Capt. Steve Phillips, AFCCC, AFWA, Asheville, N.C. (Distinguished Graduate)

NTPS MANAGERS COURSE
James Buckles, 62nd OSS/OSW, McChord AFB, Wash.
Larry Dyer, 437th OSS/OSW, Charleston AFB, S.C.
1st Lt. Christopher Lovett, 80th OSS/DOW, Sheppard AFB, Texas
2nd Lt. Paul Koecher, 11th OWS, Elmendorf AFB, Alaska
2nd Lt. Kimberly Matwick, 80th OSS/DOW, Sheppard AFB, Texas
Master Sgt. Michael Chandler, 80th OSS/DOW, Sheppard AFB, Texas
Tech. Sgt. Richard Lopez, 27th OSS/OSW, Cannon AFB, N.M.
Tech. Sgt. Daniel Tucker, 496th ABS/DOWX, Morron AB, Spain
Staff Sgt. Ashleigh Brown, OL-A, Det. 7, 7th WS, Hohenfels, Germany
Staff Sgt. Barton Conner II, 75th OSS/OSW, Hill AFB, Utah
Staff Sgt. Randi Facenda, 55th OSS/OSW, Offutt AFB, Neb.
Staff Sgt. Johnny Flores, 80th OSS/DOW, Sheppard AFB, Texas
Staff Sgt. Derek Gosney, 57th OSS/OSW, Nellis AFB, Nev.
Staff Sgt. April Hires, 14th OSS/OSW, Columbus AFB, Miss.
Staff Sgt. Kenneth Lester Jr., OL-A, 374th OSS, Camp Zama, Japan
Staff Sgt. Michael Oates, 614th SOPS/AWT, Vandenberg AFB, Calif.
Staff Sgt. Michael Rosales, 75th OSS/OSW, Hill AFB, Utah
Senior Airman Erika Bender, 11th OWS/DOO, Elmendorf AFB, Alaska
Senior Airman Brian Kendall, 3rd ASOS, Ft. Wainwright, Alaska
Senior Airman Joshua Rosenberg, 20th ASOS/E Flight, Ft. Drum, N.Y.
Senior Airman Kari Shannonhouse, 347th OSS/OSW, Moody AFB, Ga.
Senior Airman Jillian Weinman, 80th OSS/DOW, Sheppard AFB, Texas
Senior Airman Christopher Wratchford, 81st OSF/OSW, Keesler AFB, Miss.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