



Your Magazine for Air Force Weather

OBSERVE R

June/July 1999

Vol. 47 No. 8



What's Inside

AF WEATHER HUBS SUPPORT

WARFIGHTERS - More forecasters available to support increased demands from field units.....PAGE 4

MODELING WARTIME STRATEGIES ENSURE SUCCESS

- Computer simulations help battle commanders fine tune objectives.....PAGE 6

SUCCESS STORIES

- Frontline OWS/CWT troops provide feedback on operational weather.....PAGE 8

SOLAR OBSERVATION

- Technicians at the Learmonth Solar Observatory keep a watchful eye from one of the Air Force's remote assignments.....PAGE 12

NEW SATELLITE SYSTEM PEERS OVER THE HORIZON

- Development and testing of improved satellite capability promises improved delivery of weather products.....PAGE 14

AIR FORCE HISTORY UPDATE

- Insightful information on the historical significance of weather in military operations.....PAGE 16

LETTERS TO THE EDITOR

- New forum for Observer readers to share military/personal insights on current issues.....PAGE 18

AIR FORCE WEATHER WARRIOR

- Standing column to recognize those in Air Force Weather who epitomize standards **ALL AIRMAN** should espouse.....PAGE 19



OBSERVER

AIR FORCE DIRECTOR OF WEATHER

Brig. Gen. Fred P. Lewis

AIR FORCE WEATHER AGENCY

Col. Charles W. French

PUBLIC AFFAIRS, DIRECTOR

Ms. Paige D. Rowland

PUBLIC AFFAIRS, EDITOR

TSgt. Michael L. Jones

PUBLIC AFFAIRS SPECIALIST

Ms. Jodie A. Grigsby

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

HQ AFWA/PA

106 Peacekeeper Dr., Ste. 2N3

Offutt AFB, NE 68113-4039

Please call (402) 294-3115, or DSN: 271-3115, for more information about this publication. Electronic mail should be addressed to:

"Observer@afwo.af.mil"

The OBSERVER is printed by Western Press Inc., 79 Progress Parkway, Maryland Heights, Mo. Mailing list inquires should be directed to (314) 878-5700, faxed to (314) 878-5769 or sent by

E-Mail:

"western@westernpress.com"

SPOTLIGHT

There are some new Observer initiatives in this issue geared to increase reader input. Be sure and check out the Photo Contest announcement (p. 5) and the Letters to the Editor section (p. 18). Let us know how we can better serve your Air Force Weather needs

GET THOSE SHUTTERS CLICKING

THE KEY IS TEAMWORK



By Brig. Gen. Fred P. Lewis
Air Force Director of Weather

Have you noticed the progress that we've already made in AFW Reengineering? Are you looking for a core of specialized weather support for your area of operations? Are you deploying to support a regional contingency? Well, Operational Weather Squadrons (OWS) have the capabilities to provide you just what you need – and at more places around the world every day! Since our first group of OWSs at Sembach, Elmendorf, Yong San, Shaw, and Scott, began operations, the OWSs have continued to grow and they are expanding their operations to fulfill customer needs across Alaska, Europe, Southwest Asia, Korea, and parts of the CONUS. Soon, the Davis Monthan OWS will begin to support SOUTHCOM operations. We are pressing ahead to finish standing up several more OWSs. To do this we must steadily bring on board additional forecasters and with current staffing levels this is more difficult – but not impossible! The good news is that the current OWSs are already working in tandem with their combat weather teams daily; conducting much improved weather support for operations throughout their areas of responsibility.

The most significant — really the most important — message I want to get to you today is that OWSs and CWTs must function as a strong team. Teamwork is the most critical ingredient for success – it can make us successful without the perfect technology. Where we have established this teamwork it is purely amazing how good weather support can be – and our customers, the operators, the trainers, and warfighters are taking notice! Let me describe the teamwork concept, consider its impact on weather operators, and point out why it is so vital to our reengineering efforts. Teamwork has proven its weight in pure gold during our

operations in the Balkans!

So what is this “teamwork” we are talking about? From the day you were first trained and certified as Observers, you quickly understood the impact of your weather observations on airfield operations. Simply put, your observations had the power to close and open airfields or cancel complete missions. We take this responsibility very seriously and we are reluctant to share it with anyone – because we own it. As you became forecasters, you grew up in an environment that, more often than not, required us to “go it alone” – and this, in my opinion, had both good and bad aspects. As often the only forecaster on shift, you were quickly strapped with the responsibility to not only protect the base's resources but also to ensure that every piece of weather information that left your forecast counter was current, accurate, and timely. You had total responsibility for the TAF and when the weather went bad, there was seldom anywhere to turn for help. The positive result was that we learned to become extremely self-sufficient and this self-sufficiency gave us a sense of personal pride.

As we have reengineered, we have realized that ownership of forecast process responsibilities are much more effective if these responsibilities and processes are shared. Initially, there can be some short-lived “rubs”, but our people are working through these non-issues, taking every opportunity to find areas of improvement, and making the reengineered vision a success. While OWSs function as the weather “kitchens”, the CWTs have an equally important role in “taking the order and serving it up” for the local customers. In many cases, the CWT must fuse OWS operational weather products with perishable data (local weather observations,

See TEAMWORK on page 5

Air Force Weather Hub Leaves Forecasters Free to Support Warfighters

By Senior Master Sgt. Dale Warman
U.S. Air Forces in Europe News Service

CERVIA AIR BASE, Italy (AFPN) — Some weather professionals were skeptical when the Air Force established regional weather hubs two years ago, but a deployment with the 48th Expeditionary

Operations Group has turned them into believers. A Cervia weather team — deployed here from Royal Air Force Lakenheath, England, and augmented by weather airmen from RAF Mildenhall, England, and Illesheim, Germany — is in Italy supporting possible NATO actions in Kosovo and Yugoslavia. The forecasters and observers are operating under the Air Force's new weather hub concept that established regional weather centers in key theaters throughout the world.

The team relies on support from one of the centers, the U.S. Air Forces in Europe Operational Weather Squadron at Sembach Air

Base, Germany, to provide accurate weather information for U.S. pilots flying throughout the region under the hub system, forecasters at the OWS forecast the weather for Cervia and other airfields, issue weather warnings and watches, and provide technical support for setting up equipment at deployed locations.

In fact, the OWS sent two weather communications experts to Cervia at the outset of the deployment to guarantee the deployed weather team had the best possible connection to OWS support. This leaves deployed weather troops free to concentrate on their theater of operations and the local flying mission, according to Capt. Bob Kraetsch, the deployed team chief at Cervia.

"The system lets us operate as a combat weather team," said Kraetsch. "We can focus our efforts on the area of responsibility and provide mission-tailored support to the people who fly the

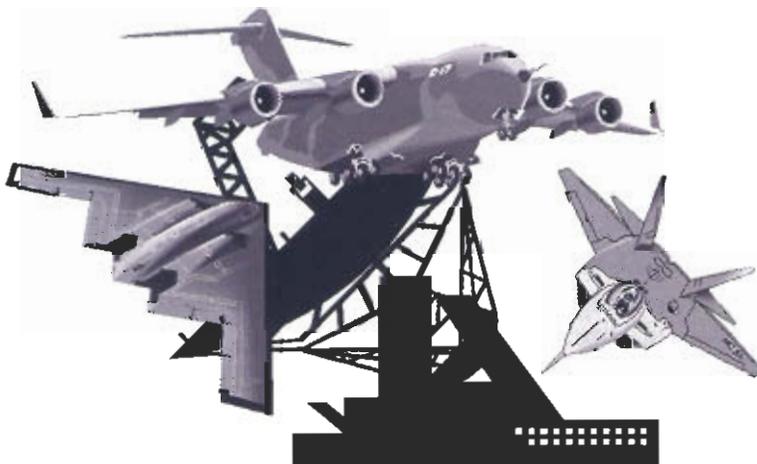
combat missions." Kraetsch, who has 15 years of weather experience both as an officer and enlisted

airman, said weather people on deployment had a more difficult job in years past.

"They would not only provide forecasts for the flying mission, they would spend time building local forecasts. This became even more difficult with decreased manpower throughout the Air Force," he said. "It's the future of weather operations and it's not just for forecasts. We were talking to the weather hub well before the deployment actually kicked off, so we knew what to bring and who our point of contact would be at the OWS," Kraetsch said.

"If I feel I'm not getting the support I need, I can pick up the phone and call the OWS. They've been extremely helpful. We all had our doubts about two years ago, but now we know the system works," he added. One converted believer, Air Force weather forecaster Staff Sgt. Robbie Ellis, said planning for a previous deployment to Cervia had a few more bumps, as, "it was the first time we'd tried the new concept.

The weather people arrived here and tried to do everything themselves," Ellis said. "Communication between the base and the OWS hub didn't really kick in until well into the deployment. 'This time, things are different,' he explained. "The key to the whole system is communication between the team and the hub. When we arrived here, we were talking



almost immediately to Sembach.”

The hub at Sembach uses forecast models and tools from around the world to build accurate forecasts. These forecasts are then available to the pilots flying out of Cervia. “Basically, only because of new computer technology and the hub’s advanced coordination can we take advantage of all the tools out there,” said Ellis.

Accurate weather projection requires two-way communications, a team effort from both ends. Deployed weather observers spend most of their days and nights

outside, gathering information on the conditions and reporting it back to Sembach. Sembach relies on the observations to provide accurate forecasts. Observers say they especially watch cloud types, heights, visibility, and wind speed and direction.

Senior Airman Tim Deehan is one observer deployed here from RAF Lakenheath, who serves as the eyes and ears for the OWS hub. “We’re trying to paint the picture for the OWS,” Deehan said, “and they’ve given us some good feedback on what we send them.”

“We’re very proud of how well the weather hub concept has worked for this deployment,” said Col. Paul Harris, USAFE director of weather at Ramstein Air Base, Germany. “Our forecasting experts at Sembach spend their time producing quality forecasts, which allows our deployed combat weather team to spend (its) time focused on customer support,” he said. “It’s a very good team concept.” **(Courtesy of USAFE News Service)**

TEAMWORK cont. from page 3

PIREPs, mission specifics, “nowcasts” etc.) to develop fine-scale, accurate, relevant, mission focused weather information for the operators. In addition, we all must apply this weather “smartness” towards local resource protection and mission following metwatch. This new process is delivering on-target results across Europe and Alaska – and teamwork is making it happen! With TEAMWORK we will succeed in every aspect of our efforts. The OWS/CWT concept is alive and working well – because of your outstanding efforts and because of your teamwork — Thanks!

Over the past few months, a number of events have pointed out many of the benefits of the OWS/CWT structure within the Reengineered AFW plan. The success stories noted on page strongly indicate that we are on the right path. Please read the feedback from your counterparts to see for yourself why we are very encouraged. But remember one thing – to be successful, we need only be a strong team – as a team we can do anything – and you will!! Thanks again for your outstanding efforts – we are proud of each and every one of you!

PHOTO CONTEST



!!!!!!!ATTENTION READERS!!!!!!!

The public affairs office is soliciting photos from readers who are closet shutterbugs. Please forward photos of mission/human interest via email or regular prints. Photos selected will be used as front/back covers of the magazine. Photographers will receive recognition in the SPOTLIGHT section of page 2. Please call DSN 271-3115 with questions/idea submissions.

Modeling Wartime Strategies Helps Ensure Future Success

By Dr. Edward E. Hume, Jr.
Air Force Research Laboratory

How do you demonstrate the impact on the outcome of a war through a system that has not been fielded or even built? That was a problem recently posed to the Technology Assessment and Wargaming Branch of the Space Vehicles Directorate by the Integrated Program Office for the National Polar-orbiting Operational Environmental Satellite System. Specifically, the NPOESS initial project officer wanted to determine if there was a militarily significant difference between NPOESS and an alternative satellite system (ALT A)? The alternate system tested was similar to one currently used by Air Force Weather. The study involved a test, using the system's environmental data record to measure the system's relative impact on successful military operations.

The Wargaming and Technology Assessment Branch formed a team that included members of the Office of Aerospace Studies, other branches of the AFRL, and members of the Air Force Weather community to develop a specific military scenario. AFRL made every effort to ensure the developed scenario met all current Department of Defense guidance and used established models. The military value of NPOESS was defined by results based on its ability to influence the "outcome" of a military campaign. Typical positive outcome indicators would include target destruction, attrition, length of campaign, etc.

The Conventional Forces Assessment Model, a standard in the analysis community, was selected as the model used to run campaign analysis. CFAM has an existing capability to include weather factors like visibility and ceiling in its campaign simulations. CFAM models use weather and other aspects of a theater level air-to-ground war and projects possible outcomes of the campaign strategy used.

CFAM uses different input parameters derived from planning and training sources, defense intelligence agency estimates, etc. to run the campaign simulations. These parameters include: weapon system platforms



and availability, pilot training, the types of targets being attacked, the enemy's ability to regenerate after attack, and the accuracy of Battle Damage Assessment, the order of battle and operational concepts.

CFAM solves the munitions optimization problem by determining the "best" mix of conventional aircraft munitions to hold in inventory. It has been used to consider three separate problems: the trade-off that occurs based on the availability of a specific weapon; the most efficient allocation of aircraft and munitions to targets for various scenarios; and weapons required to meet warfighting goals for those scenarios.

AFRL used Meso-scale Model 5 high-resolution weather inputs for CFAM in the scenario. These inputs represented the weather as it would be sensed from the actual satellite systems currently available. The MM5 model is a state-of-the-art weather prediction model used by the Air Force for theater-scale support. MM5 is a powerful tool for enhancing information obtained from weather observations when used to simulate historical weather events. MM5 is run in a four-dimensional data assimilation mode to achieve this impressive simulation. The output from these models was then re-sampled using data recording capabilities of both NPOESS and the ALT A system.

A North East Asia scenario simulating an air campaign over the Korean peninsula was chosen for

**...employing NPOESS
would produce
estimated savings of
between \$600 million
to \$1.2B depending of
campaign factors**

this study. The scenario, used by CFAM as a basis for the testing, was developed under the Defense Planning Guidance/Illustrative Planning Scenario. The scenario uses NEA target sets developed by the DIA. Weather for the scenario was developed from a weather prediction model based on conventional weather observations over the Korean region. The analysis used for this study exclusively tracked the number of air-to-ground sorties aborted due to weather.

CFAM includes combinations of weather ceilings and visibility in its model to develop marginal forecast probabilities. Information gained from these MFPs is formatted into weather tables that help relay complex weather information quickly. MFPs and the weather tables play a direct role in determining weapon usage, sortie success, etc.

An additional consideration was the use of Electro-optical Weapons in the simulation. Since weather states based on IR visibility had never been done before in CFAM – this posed a significant challenge. Weather tables in CFAM were based on visibility in the visible wavelengths. Calculation of visibility in both visible and infrared regions, along with cloud ceiling, is necessary to account for EO weapon usage in CFAM.

This problem was solved by generating an additional MFP table for each interval to simulate the effective range of weapon sensors using the infrared

bands of the electromagnetic spectrum. If a weapons package had an EO sensor involved, the weather table used in CFAM was based on an IR visibility. For each MM5, NPOESS, and ALT A interval MFP weather tables accounting for the effects of ceiling, visibility and infrared-visibility were provided for input into CFAM.

OAS executed the NEA air war scenario for two weather periods using improved weather tables developed by AFRL. The first was a fairly benign October weather period and the second, while not severe, was a more stressing April case. CFAM built air-tasking orders that included simulations for perfect forecasts and 24-hour forecasts. Simulated mission profiles were flown to determine which missions had to abort due to weather. The outcome of the campaigns provided results for analysis to determine the relative difference between the military value of NPOESS and ALT A.

The results are summarized in Table 1 for the two weather periods. For the October run, NPOESS performed better in all of the measures of effectiveness used, although in some cases the differences NPOESS and ALT A are not large. However, the importance of the relative differences are substantial; with ALT A there were 273 more weather aborts and the campaign required one day longer to complete.

For the April period, NPOESS still performed better than ALT A in all of the methods of effectiveness. The campaign was two days shorter using NPOESS and there were 1000 fewer sorties required to meet campaign objectives.

To put the results into perspective, the Office of the Security of Defense uses the figure that a 100-day war costs about \$60 Billion dollars. While the day to day costs depends on a number of factors like operations tempo and phase of campaign, this averages out to \$600 Million per day. Using this figure, NPOESS would save \$600M for the less stressing October case over the ALT A system. In the second case, the NPOESS savings would be \$1.2B over ALT A. With the savings shown above, even if using NPOESS reduces one campaign by one day, it would have paid for itself.

The author would like to acknowledge some of the key people in this effort: Lt. Col. Lauraleen O'Connor NPOESS/IPO; Lt. Col. Frank Zawada AFRL/VSSW; Dr. Joel Mozer AFRL/VSBE, Captain Dave Lyles OAS, Mr. David J. Smalley of SenCom Corporation, and Mr. John Burgeson of Science and Technology Corporation

| | OCTOBER | | APRIL | |
|-----------|----------|----------|----------|----------|
| MOE* | NPOESS | ALT A | NPOESS | ALT A |
| LOC** | 24 | 25 | 26 | 28 |
| Sorties | 14735.61 | 15096.33 | 15320.88 | 16342.89 |
| Aborts | 1458 | 1731 | 1970 | 2050 |
| Attrition | 74.02 | 74.28 | 79.8 | 86.35 |

*=Measures of Effectiveness ** = Length of Campaign

Table 1. Comparison of the MOE as determined for the Air to ground campaign over NEA for the selected weather periods.

SUCCESS

TORRIES

Kosovo Crisis

This success story occurred during the Oct 98 crisis in Kosovo when troops deployed to Italy on very short notice. Staff Sgt. Robbie Ellis (RAF Lakenheath) was one of five USAFE troops that quickly located to Cervia, Italy.

Without much prior coordination and complete instructions on how a deployed combat weather team would function, the CWT forecasting crew at Cervia (including 2Lt Carl Johnson — Spangdahlem AB & Technical Sgt. Theresa Penn — Wiesbaden) swiftly took actions to coordinate with the United States Air Forces Europe Operational Weather Squadron.

They established

reachback forecast product support (to include Joint Operational Area Forecast, Terminal Aerodrome Forecasts & hazard forecasts, availability times, and OWS homepage links, etc.). As with most new plans, everything was not completely smooth, but the deployed Cervia troops continued to successfully iron out the kinks via phone communications back to the OWS.

According to SST Ellis, by relying on the USAFE OWS forecast products, the Cervia forecasters were able to spend much less time worrying about the forecast, which left much more time for working with their deployed F-15 aviators and providing one-on-one attention to their specific mission needs. With just a NATO Automated Meteorological Information System laptop (Note: NAMIS is basically, at 9.6kb/sec, two way, satellite-based comm system with a computer weather display package—AWDS VSAT like) and an Internet connection, Staff Sgt. Ellis and crew were able to reachback for a complete suite of weather guidance that was staged at the OWS.

This CWT gave the OWS forecasters high marks for the quality of their products, saying the Cervia TAFs consistently met all requirements. The OWS was providing “one stop shopping” for the deployed weather troops and if CWTs had a problem, the OWS took action to get the CWT the help they needed.

One must remember that this is also a learning process for our

warfighting aviators. It took a concerted effort by the Cervia CWT to educate flyers that the official execution forecast for their specific mission remained the call of the deployed CWT.

With somewhat suspect and contradictory, indigenous observations available to the deployed Cervia CWT, they remained focused on providing the most timely and accurate local weather data to their customers (which included both the local aviators and the OWS centralized weather facility). This was a critical factor in getting the best quality support to the end user. The OWS also learned how valuable the CWT was in being the “eyes and ears” forward.

Another success story of the reengineering concept was the reduction in “footprint” of the deployed CWT. Fewer forecasters were required to fill the Cervia deployment due to the “kitchen work” done by the OWS. With most units at or below minimum manning, the reachback capability eases the manpower draw from units that are already stretched thin.

An Important Lesson Learned: Staff Sgt. Ellis made one thing clear...having the communications needed to perform reachback is absolutely crucial for success! We need multiple communications capabilities, first-in cell phone/INMARSAT, VSAT, NIPRNET/SIPRNET, etc. More is better. Bad communication links caused most of the problems for the deployed crew. By having back up procedures and arranging for faxed

**FEEDBACK
FROM OWS &
CWT FIELD
UNITS**

weather packages from the OWS during outages, the Cervia troops circumvented problems until they could be repaired.

Bad communications at times also kept the OWS forecasters from receiving the most up-to-date local weather data, which in turn affected forecast quality. In a good example of two-way communication, the local CWT also kept OWS forecasters supplied with the latest weather conditions, aircrew comments, and their forecast opinions (the perishable data). To their credit, it was this information sharing and team approach that led to successful weather support being provided to the deployed air assets in Italy.

by Technical Sgt. Doug Anderson
NCOIC, 354th Fighter Weather Briefing Cell

Reengineering should be focused at the customer level. At Eielson “Where the rubber meets the runway” is our focus and the results are good. We have formed two cells of two forecasters within each fighter squadron; operational for over a year at the 18th Fighter Squadron (F-16) and for about six months at the 355th FS (A/OA-10).

I have had the most rewarding experiences of my career working within these two squadrons at an operational level. We have integrated and become part of the team - putting our customer first - by interviewing and identifying customer needs and products designed to focus on all aspects of the. It would be hard for me to find the same job satisfaction working at a base-level weather station removed from direct customer support.

Our processes are still evolving, but here is the overall flow we follow now: We have a relationship with Intel and Weapons that allows us to

learn our customer thoroughly. By understanding how their sensors and weapons systems work, as well as understanding what their mission profiles are, our weather briefings are tailored to their needs. What cloud decks are important to a pilot when he is trying to deliver a laser guided bomb while avoiding threats such as anti-aircraft artillery and surface to air missiles?

What type of weather most affects a LANTIRN targeting pod or night vision goggles? What ranges are desired to release weapons that have a better chance of staying alive while still inflicting maximum damage to the target? These are the types of questions we attempt to answer while integrating with the Intel folks to give the aircrews the most bang from their support buck. Simply giving a weather briefing that focuses only on the weather, and not the impact on their mission—then walking away leaving questions unanswered has in my opinion given the weather career field a bad reputation with the warfighter.

Our support to the mission begins the day prior, during the air tasking order breakout and mission planning process. We actively circulate within the mission-planning cell, assisting decision-makers in planning ingress-egress routes and weapons load decisions based upon expected weather impacts for each package. We run planning EOTDAs and produce planning flimsies designed to give our customers a good base to start from.

On the day of the mission, the forecaster arrives and reviews all the available hub products and analysis/model data for the day. Yes, we still issue our own local version of a battlespace range/MOA forecast. Deviations that are required from the

hub products are coordinated, and then applied to produce a flimsy applicable to our specific missions. From there, expected changes and impacts to the day’s sorties are briefed to the Squadron Supervisor and aircrews as soon as they arrive—allowing them some time to formulate back-up plans and procedures to still accomplish the mission or gain needed training. I must have a good grasp of what is happening that will affect our pilots—my allegiance is to them as a customer. An answer of “well, that’s what the hub is forecasting” simply will not do. After a detailed mission brief, the last chance to update aircrews is at the “step” briefings before the pilots go to their aircraft. Following the mission, we make every attempt to meet with each aircrew upon return, sit in on their debrief and view their sensor/HUD tapes. These reviews graphically validate forecasted weather and EOTDA data. Results of these debriefs are passed to the hub to keep them up to date on conditions through the airspace. This data is also logged and tracked to help verify our forecasts and Electro-Optical Tactical Decision Aids.

An initiative that is paying big dividends is gaining altitude chamber and egress certifications allowing our forecasters to fly on training missions. This idea was initially offered by the 18th FS/DO, with the goal of “if you see what we see, you will understand how we work, and support us better.” Briefing, actively flying and debriefing five missions has opened my eyes as never before. I understand now how critical accurate cloud and EOTDA forecasts are to an F-16 pilot

See SUCCESS on page 10

SUCCESS

attempting to deliver precision munitions under less than ideal conditions. It has also had the effect of promoting more of a team attitude. Virtually anywhere the 18th FS deploys, the weather forecaster is a valuable asset that is brought along to ensure the same high quality support continues worldwide. Our customer accepts us, and depends on us to enhance their effectiveness. To me, that is what reengineering is all about.

AFRICAN EAGLE

by Technical Sgt. David Jenkins

31OSS/OSW-AvianoAB

I have had absolutely no complaints. I deployed to Morocco as the sole weather person for African Eagle 98. For equipment, I brought a Micron laptop computer and a HP Deskjet 320 printer. For backup, I brought a 9315TRT, but as it turned out it was never needed. The 1st Combat Comm Squadron was able to provide me with (NIPRNET) Internet connectivity on the second day after their arrival.

With this, I had much more information than I thought possible. I briefed the pilots verbally before each of their missions and even provided some planning input when Lt. Col. Goldfien was deciding when would be best time to fly down an extra F-16D. I also provided meteorological watch for the main operating base (Sidi-Slimane) and five alternates. While prepared to issue advisories and warnings with OWS assistance, we never needed to do so.

Before deploying, I arranged for the OWS to make a bulletin for me to use — a bulletin entitled African Eagle 98 Weather Support. I collected weather requirements from the flying squadron and requested that the bulletin fulfill their specifications, in addition to some personal requests. The bulletin was the backbone of my support.

Since we were living in a hotel 45 minutes from the base, we had to ride a bus to work each day. The pilots wanted their first briefing at 0600L but the earliest I could get to work was by 0530L. So each morning I would download the bulletin and verify it with satellite and a quick look at the model displays (all straight from

the OWS homepage). Then I would be ready to brief. The operational forecasts on the bulletin were very accurate except for a few small details like temperatures or (non-operationally significant) visibilities, but I was easily able to adjust these to actual conditions for the final mission execution product.

This experience was great for relations with the host nation. The Moroccan forecasters had no satellite data and received some charts over a facsimile machine (similar to the GM). They hand plotted the upper air and used something similar to European meteorological dissemination system to get other information like observations, significant meteorological information, or raw upper air data.

I gave a Moroccan forecaster and observer a tour of my work area and they were impressed with the wealth of information I had. They especially appreciated the satellite pictures, so I printed an extra copy each morning and carried it over to them. One thing that would make the creators of the African Eagle 98 Weather Support bulletin at the OWS happy was that the Moroccan forecaster read with great interest the extended outlook discussion and I'm sure took it into consideration for her own forecast.

The deployment commander, Col. Eberhart, was very impressed with the weather operation. When the commander of the Moroccan fighter squadron came by to see our flight operations, he brought him by to see the weather shop. I had the model charts, satellite pictures, and some other forecast hazards products hanging from the wall for quick reference. Col. Eberhart remarked "All this from just a laptop computer!"

From Capt. Rich Mueller and the Ramstein CWT

Thanks to the United States Air Forces Europe Operational Weather Squadron for the support in Aviano and during the AMC/Gulf surge, we were only able to do what we did, because you picked up the briefs, contingency and backup support that you did. Kudos all around.

We have some great success stories coming out of the Aviano Mass Tac that turned into African Eagle support. Lt. Jarry (Ramstein AB) accompanied the 9 ship to Aviano and made the tough calls that got the drops in when the operators were considering canceling. He even chased a crew down to re-file after they had already canceled to tell them that they could take off when the fog lifted in 15 minutes. The teamwork

saved a mission. He flew along with the equipment drop, the personnel drop and the assault landing after briefing each of the nine crews in the cockpits.

For the 9 ship return back to Ramstein, we got the word to the crews that if they didn't make it back to Ramstein by 2000Z, they wouldn't make it back (based upon information from Staff Sgt. Wood's (OWS) excellent 03Z forecast!). They moved up their slot times and got 3 aircraft launched, before the other 6 got diverted to help with African Eagle. Lt. Jarry then worked with the OWS, Aviano CWT, and their deployed forecaster (Technical Sgt. Jenkins) to get the missions into Africa despite poor weather on both ends.

Bottom line is we all scored a lot of points with the ops community in the past two weeks while supporting Noble Shirley, Desert Fox, the Mass Tac and African Eagle simultaneously with all-around excellent, operationally-focused forecasting. Many thanks to the Aviano CWT for their hospitality as well.

ERRANT FOE SUPPORT

from Maj. Chan Keith

RAF Mildenhall

A positive story: Outstanding responsiveness of the USAFE OWS to coordinate contingency/exercise forecast requirements. When we spun up for ERRANT FOE (a Special Ops exercise at RAF Fairford), we identified the user's requirements and coordinated the communications flow on our side. The OWS immediately began producing forecasts and providing resource protection support for the base. By taking this load off our shoulders, we decreased the deployed manning requirement by 33%.

TUZLA-OPERATION JOINT FORGE

Capt. Troy Johnson, deployed

Tuzla 7EWS SWO-TFE)

As we have gone through the process of reengineering the weather support here at Tuzla, we have noticed several positive points:

- We have reduced manning from 30 to 24 in theater as a result of transferring forecasting responsibilities to OWS — Resulting in 18 fewer deployments per year.

- Tuzla Main used to have 2-3 forecasters on duty at a time — Now only one forecaster needed on-duty per shift.

- OWS forecasters will develop all-season forecasting experience for this difficult-to-forecast area

— Providing more than the maximum 4-month experience of deployed forecasters.

TASZAR INPUTS

from Capt. Goodnite, deployed

Taszar CWT OIC)

The Operational Weather Squadron support has enabled us to reduce the number of deployed personnel at contingency bases like Taszár and Tuzla. Here at Taszár we have been able to reduce manning by about one-half. This means fewer people will have to be separated from their families for extended periods.

Another area of great improvement is the MM5 model. I've often heard of the benefits of using mesoscale models to provide detailed forecasts for a given area. But until I was deployed here to Taszár, I didn't realize how good the European MM5 forecast products were. Using the MM5 products from the OWS homepage links, we are more accurately forecasting the weather at Taszár. I can now brief the weather with much more confidence!

COOPERATIVE ADVENTURE EXPRESS 98 (CAE98)

Here's some more feedback from an Army exercise the Operational Weather Squadron supported in Nov 98. The Army folks didn't bring any weather troops, so it was reachback by the customer directly to an OWS Internet site set up to support their mission.

Customer Survey comments from Maj. Larese (deployed Army POC): Everything worked great on the exercise. Need similar support for a March (8-30) exercise in Northern Italy.

1. How important was receiving weather support for you job and the exercise

in general? Critical to land movements. Absolutely essential.

2. How well did weather support fulfill your needs? Excellent support, but timeliness is the only point here. On several days weather was not posted until 10am...likely miscommunication during set-up. On most weekdays, I could count on new weather information being posted NLT 0600, which is what we needed.

3. How well was receiving support through a homepage? Worked great, your OWS homepage is great.

Feature

One of clearest views of the sun can be found by observing from

DOWNUNDER

by Master Sgt. Rich Greisamer
Det 1, 55 SWXS

The alarm sounds in both buildings simultaneously. People jump into action, computing the location, intensity and duration of the cause of the alarm. The events causing these alarms to sound are occurring 93 million miles away, on and inside the nuclear furnace we call the sun. Observing and analyzing these solar events is the job of the folks assigned to Learmonth Solar Observatory in Western Australia. Learmonth is part of a network of six observatories belonging to the 55th Space Weather Squadron that monitor the sun 24 hours a day, every day of the year. Learmonth, the only site in the Southern Hemisphere, is the perfect location for this mission. Clouds and bad weather are extremely rare on the Northwest Cape, which allows virtually continuous coverage from sunrise to sunset.

Learmonth Solar Observatory is jointly operated by the US and Australian governments. There are 12 Americans assigned—11 USAF personnel and one National Oceanic and Atmospheric Administration Corps officer. There are also two Australian solar physicists working at the site and one civilian administrator. The observatory's team is made up of three organizations—Detachment 1, 55th Space Weather Squadron, 50th Space Wing, Schriever AFB, CO; OLG, 15th Communications Squadron, 15th Air Base Wing, Hickam AFB, HI; and the Australian government's Radio and Space Services Agency.

Weather people here, all previously forecasters, serve their nation as space environment analysts. Analysts both observe and listen to the sun. Observations are accomplished with a 10-inch computer-controlled optical telescope. Analysts assigned to Learmonth constantly monitor variations on the sun's

surface. They use techniques like mapping and analyzing groups of dark areas called sunspots, watching for increases in brightness on the surface, and analyzing movements of huge blobs of plasma on the edge of the sun.

Listening to the sun isn't as strange an action as it sounds. The sun is a very loud transmitter of radio waves. Analysts hear these waves through the use of an antennas, albeit quite a bit larger than the one on your radio at home, to measure the amount of radio energy traveling across space and hitting the earth. The system uses three, eight, and 28-foot parabolic antennas along with two fixed antennae to monitor the sun's emissions.

Alerts, images, and data Learmonth prepares are sent to three space environment forecast centers—55th Space Weather Squadron on Schriever AFB, Colorado; NOAA's Space Environment Center in Boulder, Colorado; and the Australian government's center in Sydney as well as countless other agencies. Through these paths Learmonth's fingers wrap around the globe. There is not a single military or civilian data-gathering mission that encompasses wider reaching effects than that which is accomplished at the Air Force's six solar observatories.

Consider the preparatory and planning impact observatories are able to provide endangered populations through identification or advance warning of dangerous atmospheric activity. Dangers such as high speed protons which can cause tissue damage in humans and disable spacecraft, magnetic storms which can disrupt ground- and space-based communications as well as cause billions of dollars in damage to power grids; and bursts of radio energy which can confuse ground-based radar.

Each year this information becomes more critical as our dependency on smaller and more sensitive



The Learmonth Solar Observatory serves as one of the most strategic observation posts in the world. Staffed by USAF, National Oceanic and Atmospheric Administration Corps and Australian professionals, the observatory provides around-the-clock information on solar activity and its potential effects.

microelectronics space-based systems increases. The data gathered by observatories is absolutely essential to forecasters worldwide who use it to warn literally thousands of customers worldwide.

The job of the analysts at Learmonth is becoming more important for another reason as well. Solar activity rises and falls with a cycle of approximately 11 years. A peak and a trough in activity levels occur in each cycle and are referred to as solar maximum and solar minimums, respectively. As you might expect, the number and intensity of impacts on military and civilian systems also reach a peak around solar maximum. All Air Force observatories have already noticed an increase in significant solar events on the way to the next maximum cycle, expected around 2000-2001.

In today's age of technology and consumer electronics, you've probably noticed effects of solar activity in your everyday life. The picture received from your satellite TV dish could go fuzzy or your stereo might not pick up your favorite station as well as usual. Interference problems like these could last anywhere from a few seconds to a couple days.

The observatory is located on a 60-mile long peninsula on the western coast of Australia; certainly one of the most remote assignments in the Air Force. Personnel live 25 miles from the observatory in the town of Exmouth, which has a population of about

2,500. The sparse and rugged nature of the Australian Outback makes it difficult to get away to the city life. Get in your car and you'll be on the road for about five hours before you hit the nearest town, seven hours before you hit the first fastfood restaurant, and 12 hours before you actually come to a city. Malls, theaters, and other conveniences are nonexistent in Exmouth. The town has two small groceries, a newspaper and magazine shop, a chemist (pharmacy) and a few other businesses. There are also about six small restaurants.

Despite the ruggedness, lack of entertainment and local shopping, most members find plenty of positives about the area. It's a very small community; the atmosphere is almost like that of *Cheers*, most everyone knows your name after you've been here a year or so. The locals are very friendly, the weather is nice and life moves at a more relaxed pace. The Indian Ocean, with its abundant and varied sealife, provides prime recreation opportunities. Fishing, diving and most anything to do on, or in, the water is available. Exploring sealife is a common pastime. It's common to see humpback whales, turtles, dolphins, manta rays and other sea creatures.

For land dwellers, there is plenty of wildlife to see. Kangaroos, emus, lizards and other unusual animals are everywhere. In fact, vehicle traffic isn't the main hazard when driving. The chances of a 'roo or emu being on the road are higher than another car pulling out in front of you.

As you might guess, the mission at Learmonth is pretty important to the Air Force. Rest assured, Learmonth and all the solar observatories of the 55th Space Weather Squadron will provide continuous 24-hour coverage of solar activity. Because of the dynamic solar-terrestrial relationship existing between earth and the sun, many are relying on their expertise and vigilance.



New Satellite System Peers Over the Horizon

By Captain Orlando J. Dona, Jr.

The multi-phased Very Small Aperture Terminal program is a component of the overall Weather System Support Architecture being developed and procured for the Air Force. The VSAT program will provide one method to distribute and collect weather information. Air Force Weather Agency's VSAT program uses commercial satellite services and equipment.

The objective of the VSAT acquisition is to expand satellite communications bandwidth to support the transfer of weather information. Currently, there's a satellite network in CONUS that supports the transfer of METSAT and NEXRAD mosaics to the Automated Weather Distribution System. AFWA is extending the space segment to include Europe, Korea, and Japan. This space segment will also support tactical users.

The VSAT program incorporates a phased approach with the strategy of build-a-little, field-a-little, field-test-extensively. Lessons learned in one phase are applied to the next phase to mitigate risk and to incorporate new technologies and operational requirements gained from field-test experiences. VSAT builds on both the Satellite and Radar Data Ingest for the AWDS and Raytheon's internal research and development. Raytheon proved the system architecture used for VSAT and delivered a core capability to provide transmit and receive satellite communications services to in-garrison CONUS weather stations. The next step is to extend this architecture into the OCONUS fixed and tactical arena.

VSAT will incorporate many facets of modern software and hardware efforts. As part of the program's software design and modification effort, the VSAT contractor will ensure the program doesn't undo existing Year 2000 certification or introduce non-Y2K compliant software on any software modules. The contractor will also assist the government with rigorously testing the system before it is fielded.

The next phase of the VSAT program delivers a capability to disseminate weather products through

commercial communication satellites to in-garrison (fixed) and deployed (tactical) VSAT terminals in Europe. The VSAT contractor will implement a web-based system at the European operational weather squadron. This system will serve as a forward-staged server that allows the OWS to store their products in a central location (database) and designate these products for transmission to VSAT's terminals in the European Theater. For two-way VSAT systems, this feature will eventually allow customers to send locally produced products back to the OWS through the satellite system.

VSAT terminals will be off-the-shelf equipment supplied by several contracted companies. US Air Force users will be provided with a rack-mounted receiver equipment, 1.2 meter satellite dish, and supporting equipment. US Army users will receive a slightly smaller dish. This equipment will be transportable on small vehicles and can be easily added to a mobility package. AFWA and the Army Research Laboratory will evaluate an initial delivery of tactical terminals for their mobility features and may make configuration changes before they are finally fielded. MAJCOMs/MACOMs will then be able to add the VSAT equipment into Unit Type Codes.

The follow-on phase of the VSAT program will establish Pacific satellite communication services. Also during this phase, the VSAT will be integrated into the Army Weather Effects Workstation.

Initial space segment coverage for the European and Pacific theaters will allow for two-way communications. The VSAT hub will operate at one Megabit per second. The 1Mb/s outbound broadcast channel will be the main method for weather product shipment from a VSAT hub. It can transmit a one-Megabyte file in eight seconds. Note the difference in communications and computer terminology, communications are stated in bits per second, while computer file sizes are in bytes (there are eight bits in each byte). The other part of the space segment is a 128-Kilobit per

AF BRIEFS

second (Kbps) shared in-route channel from fixed VSAT terminals to the hub. The 128 KBPS in-route is shared by all two-way VSATs in a theater. The in-route channel would take over a minute to transmit a one Megabyte file.

Tactical VSATs will be equipped only to receive the one-way broadcast channel. This will make the terminals much easier to set up on deployments. One-way systems mean less equipment to carry and no complex satellite ranging procedures.

VSAT equipment was tested in the CONUS in Dec 98, European testing was accomplished in Feb 99 and a Pacific VSAT broadcast began in Apr 99. While VSAT is not the panacea for the transmission of all of weather products, it will help meet long-standing communications limitations. We'll still have to rely on common user networks and base LANs. But when fully implemented, VSAT will prove to be a great boon to bandwidth-starved weather flights and mobile weather teams.

VSAT has a lot of programmatic hurdles ahead and these are being worked diligently by AFWA/SCMT. The program manager will keep the MAJCOMs/MACOMs updated as necessary on timelines and any other items of note. The next several months will be the time of most activity, so be sure to keep working with your MAJCOM/MACOM to stay up to date on the latest information.

Address questions, comments, and concerns from any of the above topics to Capt. O.J. Dona, AFWA/SCMT, DSN 312-271-4266, or Comm (402) 294-4266, or email {orlando.dona@afwa.af.mil}.

States Won't Tax Those Serving in Combat Zones

WASHINGTON (AFPN) -- All states and territories will follow the federal government's lead and not tax service members serving in the designated combat zones.

President Clinton's April 13 executive order details the newest combat zone as the Federal Republic of Yugoslavia (Serbia, including Kosovo), Albania, the Adriatic Sea and the Ionian Sea above the 39th parallel. The effective date is March 24, the day Operation Allied Force began. Those in the combat zone also receive imminent danger pay of \$150 per month.

Other active combat zones for tax purposes are Bosnia-Herzegovina and the Persian Gulf region. Enlisted service members do not have to pay 1999 federal income tax on their pay for the months they are in the combat zone. Defense Department officials said members earn a tax exemption for the entire month for any presence in the combat zone, no matter how slight.

Commissioned officers can exclude an amount equal to the highest enlisted salary plus imminent danger pay. Thus, any pay in excess of \$4,653 per month (the highest enlisted pay \$4,503 plus \$150) is subject to income tax.

Service members with federal and state income tax questions should contact their legal assistance offices.

Air Force Team Faces Eco-Challenge

LACKLAND AIR FORCE BASE, Texas (AFPN) — Three male pararescue instructors from Lackland and a female survival instructor from Fairchild Air Force Base, Wash., make up one of 10 teams selected to represent the United States in the 1999 Discovery Channel Eco-Challenge in Patagonia, Argentina, Nov. 25 to Dec. 13.

The Eco-Challenge is a 300-mile journey done in 10 days with about one hour's sleep each night. Teams test their endurance traveling on foot, horseback, lake kayak and whitewater canoe, and by mountaineering through rock, ice and snow, and ascending and descending on fixed ropes. Master Sgt. Rod Alne, a pararescue instructor and leader of the team has been watching the Eco-Challenge on television since 1995.

The four Air Force people will be competing against some of the world's best athletes and members of military services from various nations. Among the groups in the last Eco-Challenge were Navy SEALs, members of the French Foreign Legion, as well as world-class runners, bikers and kayakers.

The Eco-Challenge has become known around the world as one of the toughest tests of human endurance. Previous events have been held in various locations around the world, including the United States. The most recent was held in Morocco.

Weather History **Did You Know?**

For centuries people have been interested in the weather. However, many of the technological strides taken in weather observing and forecasting have taken place in the nineteenth and twentieth centuries, primarily due to technological advances. With the invention of the telegraph and the needs of Commerce, weather prediction became a way to gather data quickly, analyze it, disseminate forecasts and provide weather warnings.

Officially the military weather service began on 4 February 1870 when a Congressional Resolution was passed. However, it was the Secretary of War who tasked A.J. Myer with setting up a weather service in March 1870.

Professor Cleveland Abbe was hired to work for the weather service in January 1871 as Chief Scientist. He was an astronomer with a strong interest in meteorology. Under his direction "the Signal Corps weather service took a world-wide lead in the field of practical weather forecasts for public use." "By 1873, there were 93 [weather] stations, 15 of them outside the United States, reporting 3 times a day... by 1878, there were 224 stations, including one in the Aleutians, reporting 8 times daily."

Weather forecasting and prediction soon became a primary function of the Signal Corps and the 1870's and 80's saw many advances in weather reporting. Sergeants were being sent to the Arctic as Observers; "balloons made their ascent for the study of the upper air," while at the same time, weather stations were being established atop Pikes Peak in Colorado Springs, and Mt Washington, New Hampshire.

Did You Know?

For a short time in the 1880's, the Signal Corps maintained "the first clock in the United States so mounted as to keep constant air pressure and temperature, thus providing accurate time."

By 1884 "Greenwich" time was accepted and utilized throughout the world. The Signal Corp had been an advocate of the standard-time movement for 15 years and provided strong support toward its implementation.

Secretary of War, Richard Todd Lincoln, did not have the funds necessary to run the weather service and there was concern over where it should be placed. Many thought the military had enough on its plate already and consideration was given to placing it outside the military environment, which did happen in 1891. The weather service was moved with its person-



nel and equipment to the Department of Agriculture establishing the first Weather Bureau.

Early in 1917, as war in Europe became more of a possibility, "the

requirements of twentieth century technology assured a place for weather science. The use of poison gas necessitated some very precise information about the winds and vertical movements of the air, lest the gas be blown back on one's own troops..." This happened to four Prussian regiments in Armentieres. Weather information was vital. In artillery, upper air observations were important, while observations were also used to assist in locating guns, since "the speed of sound is proportional to the density of the air." Last, but certainly not least, the aviators required accurate weather information since early aircraft were almost entirely, at the mercy of the elements.

When the United States was drawn into World War I, with the collapse of the Russian front, a weather conference was held and many members of the Weather Bureau were brought onto active duty. These individuals were "providing meteorological and aerological support for aviation, Coast Artillery, Ordnance Proving Grounds, the Gas Warfare Service, and for the AEF (American Expeditionary Forces)."

One source of information for this article came from a report entitled *Meteorology in the United States Army Signal Corps - 1870-1960*, the Signal Corps Historical Division.

Note: The Air Force Weather Agency History Office recently completed its relocation from Scott AFB Illinois to Offutt AFB Nebraska. Although this office is still in a bit of disarray, it appears to be coming together quite well and the office will be fully operational before too long. The new History Office information is as follows: HQ AFWA/HO, 106 Peacekeeper Drive, Suite 2N3, Offutt AFB NE 68113-4039; Phone: 402-232-8682, DSN: 272-8682, FAX: 272-8684, email: Lillian.Nolan@afwa.af.mil so keep those letters, photos, stories and artifacts coming!

MEDALS

MERITORIOUS SERVICE MEDAL

Lt. Col. Timothy H. Miner, HQ AMC/DOW, Scott AFB IL

Maj. Thomas E. Lambert, HQ AMC/DOW, Scott AFB IL

Capt. Rendon, Trinidad II 111 WF Houston TX
Master Sgt. John Fritz, HQ AMC/DOW, Scott AFB IL

AIR FORCE COMMENDATION MEDAL

1st Lt. Kenneth P. Cloys, 49th OSS/OSW, Holloman AFB, N.M.

Technical Sgt. James Branda (4OLC)
Staff Sgt. Scott Butler, 49th OSS/OSW, Holloman AFB, New Mexico

Staff Sgt. Aquanetta Brobston (1OLC)
Staff Sgt. Deborah Northern
Staff Sgt. Burtice Wood, 45th Weather Squadron, Patrick AFB, FL

Senior Airman Mark E. Reed, 80 OSS/DOW, Sheppard AFB, Texas

Senior Airman Greg Schweitzer, 49th OSS/OSW, Holloman AFB, N.M.

ARMY COMMENDATION MEDAL

Staff Sgt. David A. Dawson, 57th OSS/OSW, Nellis AFB, NV

AIR FORCE ACHIEVEMENT MEDAL

1st Lt. James C. Lane, 207th Weather Flight, Indianapolis, IN

1st Lt. Aaron Kinser, 57th OSS/OSW, Nellis AFB, NV
Master Sgt. Patrick B. King, 207th Weather Flight, Indianapolis, IN

Technical Sgt. Mark D. Cope, 207th Weather Flight, Indianapolis, IN

Staff Sgt. Marry Williams, 49th OSS/OSW, Holloman AFB, N.M.

Senior Airman Ernest Kennedy, 49th OSS/OSW, Holloman AFB, N.M.

Senior Airman Cara Combs, 49th OSS/OSW, Holloman AFB, N.M.

Senior Airman Kelly Byrne, 57th OSS/OSW, Nellis AFB, NV

Senior Michael G. McCreanor, 80 OSS/DOW, Sheppard AFB, Texas

Senior Airman Jennifer E. Nichols, 57th OSS/OSW, Nellis AFB, NV

JOINT SERVICE ACHIEVEMENT

Capt. Scott Jacobs, 45th Weather Squadron, Patrick AFB, FL

AIR FORCE OUTSTANDING UNIT AWARD

1st Lt. Chris T. Finnigsmier, 49th OSS/OSW, Holloman AFB, New Mexico

2nd Lt. Sean R. Keaveney, 49th OSS/OSW, Holloman AFB, New Mexico

Staff Sgt. Scott Butler, 49th OSS/OSW, Holloman AFB, New Mexico

Staff Sgt. Kevin Mattingly, 49th OSS/OSW, Holloman AFB, New Mexico

Airman First Class Brian Deluca, 49th OSS/OSW, Holloman AFB, New Mexico

AIR FORCE GOOD CONDUCT MEDAL

Staff Sgt. Amy Gill, 57th OSS/OSW, Nellis AFB, NV
Senior Airman Tasha N. Fisher, 80 OSS/DOW, Sheppard AFB, Texas

Senior Airman Mitchell C. Lorentz, 3 OSS/OSW, Elmendorf AFB, Alaska

Senior Airman Olivia D. Lorentz, 3 OSS/OSW, Elmendorf AFB, Alaska

PROMOTIONS TO CAPTAIN

Christopher T. Peck, 207th Weather Flight, Indianapolis, IN

TO 1ST LIEUTENANT

Aaron Kinser, 57th OSS/OSW, Nellis AFB, NV
James C. Lane, 207th Weather Flight, Indianapolis, IN
Christian W. Barnes, 3 OSS/OSW, Elmendorf AFB, Alaska

TO SENIOR MASTER SERGEANT

Larry D. Jackson, HQ AMC/DOW, Scott AFB IL

TO MASTER SERGEANT

Patrick B. King, 207th Weather Flight, Indianapolis, IN
Nancy M. Eakle, 3 OSS/OSW, Elmendorf AFB, Alaska

Osgood, Curtis 131 WF Westfield MA

Patrick D. Haugh, 3 OSS/OSW, Elmendorf AFB, Alaska

Osteen, 45th Weather Squadron, Patrick AFB, FL

TO TECHNICAL SERGEANT

Ed Alicdan, 60 OSS Weather Flight, Travis AFB, California

Timothy J. Burke, AFCCC Asheville

Michael D. Buchanan, AFCCC Asheville

TO STAFF SERGEANT

Ashleigh B. Brown, 319 OSS/OSW, Grand Forks AFB, ND.

Richard A. Lopes, 60 OSS Weather Flight, Travis AFB, California

Scott "Woody" Lacroix, 60 OSS Weather Flight, Travis AFB, California

Taylor B. Jacobs III, 57th OSS/OSW, Nellis AFB, NV

Martinez, Amber K. 159 WF Camp Blanding FL

Pollard, Terry G. 165 WF Louisville KY

Paul M. Walker Jr. 97 OSS/OSW Altus AFB, OK

Richard C. Wright, AFCCC Asheville

James S. Monroe, 49th OSS/OSW, Holloman AFB, New Mexico

TO SENIOR AIRMAN

Mitchell C. Lorentz, 3 OSS/OSW, Elmendorf AFB, Alaska

Olivia D. Lorentz, 3 OSS/OSW, Elmendorf AFB, Alaska

Joshua W. Murray, 3 OSS/OSW, Elmendorf AFB, Alaska

Schumacher, Brett

Ashley Mahmood 97 OSS/OSW Altus AFB, OK

Austin Fernandes, 49th OSS/OSW, Holloman AFB, New Mexico

TO AIRMAN FIRST CLASS

Jennifer L. Huston, 80 OSS/DOW, Sheppard AFB, Texas

Johanna T. Peltonen, 57th OSS/OSW, Nellis AFB, NV

Angel R. Portocarrero, 57th OSS/OSW, Nellis AFB, NV

REENLISTMENTS

Technical Sgt. Michael D. Buchanan, AFCCC Asheville

Technical Sgt. Roseanne Sinn, Minot AFB, ND

Staff Sgt. Michael D. Compton, 57th OSS/OSW, Nellis AFB, NV

Staff Sgt. Taylor B. Jacobs III, 57th OSS/OSW, Nellis AFB, NV

Staff Sgt. Arthur N. Crosswell III, AFCCC Asheville

Staff Sgt. Anthony Suchovsky, AFCCC Asheville



The Observer Magazine is introducing new reader feedback forum entitled Letters to the Editor. The intent of the forum is to provide an outlet for readers to express viewpoints that impact the daily Air Force life. Though targeted to those with an Air Force affiliation, this forum is open to all military branches and civilian employees. Please ensure the content of the submission is professionally presented. Those including inappropriate references will be returned. Submissions should not exceed 150 words and should be emailed to the Observer Magazine at observer@afwa.af.mil. Questions, ideas or concerns may also be routed through the above email address.

AF Memorial?

Call me misinformed or uninformed, but I didn't realize the Air Force was the only branch of military service without an official memorial in Washington. Although I've never been to the capital, I'm certain that at some point my life's travels will place me there. It would be fitting to have a memorial where I could stop and reflect on my Air Force experiences and the friends made along the way. I'm sure there are many other airmen who echo my sentiments. In acknowledging the sacrifices all military members make for their country, it seems impractical for us not to be represented with our sister services. In today's mobile warfighting mode, no one service can boast being "more important" to the team. Let's all push to find out what we can do to transform this vision into a reality.

Technical Sgt. Michael Jones
HQ AFWA

AIR FORCE

WEATHER WARRIOR



NAME/RANK: Rick Keil, Master Sgt.

UNIT: Headquarters Air Force Weather Agency

JOB TITLE: Chief, CONUS Severe

YEARS IN SERVICE: 17

HOMETOWN: Napanee, Indiana

FAMILY STATUS: Married to Anita

HOBBIES: Model Railroading, military history

REASON JOINED THE AIR

FORCE: To see the world and do something that mattered

PERSONAL MOTTO: Train everyone to the same level – don't rely on one or two "experts"

MOST MEMORABLE AIR FORCE WEATHER EXPERIENCE:

I was stationed in Ansbach Germany and forecasted a major snowstorm a week in advance. We started saying Monday that the storm would hit on Friday, and each subsequent day we repeated the warning. That Friday, the snowstorm produced over 8 inches of snow and the Aviation Brigade commander was extremely happy with our advance warning – but I still had to write a forecast review on why the snowstorm occurred!



AIR FORCE WEATHER ON DISPLAY - (Top) An Air Force mascot checks the forecast on AFWIN at the Air Force Weather booth. More than 120,000 visitors attended the Public Service Recognition Week events, Washington D.C., May 6-9.



(Above) Master Sgt. Rick Keil, AFWA's CONUS Severe Chief, presents Deputy Secretary of Defense Dr. John J. Hamre with an Air Force Weather Agency coin. (Left) Tech. Sgt. Dave Nast, a team leader in AFWA's Special Operations branch, shows students the finer points of forecasting weather. (photos by Paige Rowland)

