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**Weather:
A piece
of the big
picture**

Joint



Observer

The Magazine of the Air Force

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As the pressure of 21st-century warfare increases, the services are relying more and more on each other for support. Through Joint Interdependence, Air Force Weather works with its Army, Navy and civilian counterparts, as each service pushes closer to finding the most efficient and effective ways to blend joint capabilities and support the warfighters.

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The men and women at the Schoolhouse are quickly trying to put the devastation of hurricane Katrina behind them and get back to "business as usual." To lessen the impact on the mission, staff members worked tirelessly to re-open the Schoolhouse - resuming instruction six months earlier than predicted.

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Weather team members located at Forward Operating Base McKenzie, Iraq, look back at the triumphs and challenges of forecasting from a bare-base location. As their mission draws to a close at FOB McKenzie, they move to a bigger and better base. However, their commitment and memories to their small, dusty, and deserted FOB remain true.

New tool for 'The Deid' 14

The 379th Expeditionary Operations Support Squadron forecasters, Al Udeid, Qatar get a new tactical weather radar. Now, they have the ability to forecast thunderstorms more quickly, thus alerting the key decision makers on impending weather threats to personnel and resources.

Weather critical for 'Return to Flight' 16

Weather plays a role in all aspects of flight operations. The 45th Weather Squadron, Patrick AFB, Fla., knows that all-too-well providing critical weather support to the NASA Space Shuttle program. They exploit the weather to ensure Cape Canaveral Air Force Station, NASA's Kennedy Space Center and Patrick AFB, Fla., receive safe access to air and space.



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Volunteering as a Spanish-speaking Subject Matter Expert Exchange weather officer has offered Maj. Muriel Ramirez-Salas, 12th Air Force, Davis-Monthan AFB, Ariz., new awareness of the practices and capabilities of her South American neighbors. The exchange between the SMEE's and their Spanish counterparts is important for future cooperation between the United States and other nations in the SOUTHCOM area of responsibility.

On the Cover

Air Force Weather has long strived for joint interdependence through cooperation with its Army, Navy and civilian counterparts. This graphic depicts the capabilities, and realm of support AFW personnel contribute toward accomplishing the Air Force's big picture. Through joint integration, AFW seamlessly brings the different capabilities of the Army, Navy and civilian weather agencies together to support the warfighter.

Photo illustration by Ms. Jodie Edwards



Joint Interdependence

Implications for Air Force Weather

by Col. Patrick “Mike” Condray
HQ Air Combat Command
Langley AFB, Va.

One of Gen. T. Michael Moseley’s emphasis areas as our new Chief of Staff is to move past joint cooperation or integration to joint interdependence.

Joint integration, bringing the different capabilities of our multiple services seamlessly together to meet the needs of our combatant commanders, has been a powerful tool of our nation for many years.

But, the pressures of 21st-century warfare have pushed us to take that to a new level – like a new alloy of steel being forged in fire.

Interdependence means that our different service capabilities are not just designed to “plug and play” together as needed, though that is certainly required.

More and more, our services are being designed to deliberately assume that the capabilities of each will be available to the other. For example, the Air Force has long had tactical air control parties and procedures to integrate close air support, interdiction, and other aspects of air and space power to support Army land forces as needed.

However, Army units did not assume that these capabilities would be available. They brought considerable artillery and similar fire support weapons with them so they could “take care of themselves” if necessary.

As our Army has transformed,

one of their challenges has been to retain combat effectiveness while being more rapidly deployable.

They do this by cutting back significantly on heavy artillery support – trusting that Air Force, Navy, or Marine airpower will be available, if needed.

Air Force Weather has long been moving in this direction. The recent high-level emphasis on battlefield Airmen who directly support the Army has highlighted something weather personnel have known for years – the Army relies on the Air Force for almost all of its weather support.

Navy and Marine weather technicians receive their initial meteorological training at an Air Force school; while many Air Force personnel attend the Naval Postgraduate School.

The Joint Typhoon Warning Center, and its civilian counterpart, the National Hurricane Center, relies on Air Force satellite capabilities. These are being blended together with civilian satellite capabilities through the National Polar Orbiting Environmental Satellite System.

But in my opinion, there are many more possibilities to leverage interdependence available for adoption. The need for greater joint effectiveness and efficiency is pushing us to either take the lead in seeking such solutions or have them dictated to us. What capabilities do we bring to the table that others could leverage more fully? What do we do when

other military or civilian capabilities can do just as well or better? Each of us could probably make a list of five or more items with just a few minutes of effort. The trick is translating that list into action.

Although interdependence has great promise, it is not easy. Procedural barriers are one thing – if we and other services write the procedures, we can change them. But, what technical challenges must be overcome to allow us to leverage each other’s capabilities? More importantly, interdependence requires trust and confidence. When we go to war, we want to know the required capabilities are there, and our sister services know we will be there for them to succeed.

The pressures of continuing high-tempo operations in an ongoing global conflict underscore the imperative to find ways to sustain these operations over the long-term without bankrupting our nation.

So joint interdependence is needed and will be our future as a joint force. It’s up to us to continue pushing to seek out, refine, and implement the most efficient and effective ways to blend joint capabilities for our supported warfighters.

Each of you can probably think of different possibilities, but it will take careful planning and coordination to translate possibility to reality. Let’s make it happen.

Premiere weather unit re-activates

Unit takes on long, rich history of 21st Weather Squadron, providing weather intelligence throughout Europe

by 2nd Lt. Michelle Bishop
21st Operational Weather Squadron
Sembach AB, Germany

After 34 years, the premiere weather unit of World War II is back on the front lines of operational forecasting within the European theater. This rebirth of history comes not through reactivation, but rather, a re-designation of the former USAFE Operational Weather Squadron at Sembach AB, Germany.

The USAFE OWS dates back to 1997 when it was the first OWS tasked to provide mission support to commanders throughout the United States European Command theater and to our NATO allies. Its area of responsibility covers the greatest territory of all Air Force weather units, 21 million square miles, spanning 91 nations from the western Atlantic Ocean to the eastern shores of Russia, and from Iceland and Scandinavia to the southern reaches of Africa.

With the realignment of Europe's U.S. Air Component Forces in 2005, the USAFE OWS now reports to the 616th Support Group, part of the 16th Air Force, and was re-designated as the 21st Operational Weather Squadron. Along with the name change comes an inherited rich history of excellence dating back to 1943.

Activated at Bradley Field, Conn., in April 1943, the 21st Weather Squadron quickly moved overseas and was assigned to the 9th Air Force in October of the same year. With the purpose of providing dedicated meteorological intelligence to ground units,



the 21st WS became the first fully deployable weather squadron in history with men trained specifically for combat; during Operation Overlord, 14 mobile weather units deployed 30 men in support of the ground troops. Following the Normandy invasion, Bronze Stars were awarded to 81 servicemen of the 21st WS.

The unit also earned the European-African-Middle-Eastern service streamer and three additional campaign streamers in Northern France, Rheinland, and Central Europe, for their unparalleled support to the war fighter.

Following its inactivation in 1946, the 21st WS saw duty once again from 1956 to 1971 in Spain. In June 2005, the Chief of Staff of the Air Force directed the 21st WS to re-activate and consolidate with the USAFE OWS to become today's 21st Operational Weather Squadron as of Nov. 1, 2005. This move indicates that USAFE's OWS, while still the theater source for weather, no longer reports directly to the major command staff.

The patch of the 21st WS, approved in 1960, illustrated the need for accurate upper air forecasts to ensure the safety of aircraft flying at greater altitudes in the age of such airframes as the U-2 and SR-71.

Today's emblem depicts a knight leaping to the defense of the warfighter by providing accurate weather intelligence reaching all aspects of the battle space-weather in the air or on the ground. One thing is guaranteed, the 21st OWS continues to live up to its namesake's heritage, providing critical mission support to leaders and operations conducted throughout EUCOM.

Weathering across

by 46th Weather Squadron
Staff Report
Eglin AFB, Fla.

The men and women of the 46th Weather Squadron at Eglin AFB, Fla., have the unenviable responsibility of forecasting for a vast and active zone.

They provide forecasts for five operational wings, two systems wings, and the Department of Defense Explosive Ordnance Disposal School. They also support the 20th Deep Space Surveillance Squadron, and numerous smaller agencies scattered across 724 square miles of land range and more than 100,000 square miles over the Gulf of Mexico.

Eglin AFB falls under the Air Armament Center which is responsible for the planning, testing and evaluation of aerially delivered weapons. The 46th WS plays a critical role in this process. To that end, the 46th Operations Flight supports all the day-to-day flying and ground operations of the base including Duke Field.

“Mission Execution Forecasts and resource protection are also provided to the 6th Ranger Training Battalion and 96th Air Base Wing,” said Capt. John Raczkowski, 46th WS Operations Flight commander. “Supporting all of these daily operations requires a high degree of fidelity in the MEFs.”

As an example, an F-16 Falcon flying a small diameter bomb test mission is interested in much more than simple instrument flight rules or visual flight rules criteria. Weapons being tested require optical and electronic monitoring as well as photographing and have to be conducted under specific weather conditions.

“This means the MEFs produced by the 46th WS must be on-target to ensure validity of the test,” said Captain Raczkowski. “Missing a key parameter in an MEF can lead to mission failure or invalidate testing. Any mission failure or need to re-test delays cutting-edge weapon systems development for the warfighter.”

The flying wings located at Eglin AFB use nearly

all major aircraft types in the Air Force inventory.

“This translates into a lot of effort by the weather squadron,” said Tech. Sgt. Ceaser Webb, 46th WS Operations Flight. “The squadron averages more than 400 MEFs every month.”

In addition to supporting fighter aircraft and test and evaluation missions out of Eglin, the weather squadron is also responsible for the 919th Special Operations Wing which flies MC-130 Hercules out of Duke Field. The 919th SOW conducts a significant portion of their flying operations at night and at low altitudes. This poses a special challenge for the forecasters. The squadron provides observations for the airfield and serves as the northern “eyes forward” for the base.

The 46th WS also provides critical resource protection to the U.S. Navy-run DoD EOD School. Timely advance notification of hazardous conditions is especially critical when students are in the practical training portion of their course. The Weather Squadron, using its unique improved weather dissemination system, is able to provide virtually instantaneous notice to students working with live explosives when lightning threatens.

Designers and evaluators of advanced systems from the Air Force Research Lab and Air Armament Center work very closely with the squadron’s staff meteorology flight to take advantage of the large flying ranges at Eglin AFB. This close coordination helps system designers identify potential weather impacts to new weapon systems early and offers customized weather information for the various test programs.

The mission of the 46th WS continues to provide the highest quality, mission-tailored meteorological products and services for the Eglin community and associated agencies. Their goal is to enable successful Air Force tests and evaluations, resource protection, operations, acquisitions, research, training, and provide skilled warfighter support for contingency operations. Supporting such a broad spectrum of missions and wide variety of aircraft can be a daunting challenge, and the men and women of the 46th have the teamwork to meet these challenges head-on.

ss the miles

46th WS forecasters

Providing unique weather support

by Maj. Bryan Mackey
46th Weather Squadron
Eglin AFB, Fla.

Located in the panhandle of Florida, the 46th Weather Squadron has tackled their share of severe weather. They facilitate inclement weather notifications and improve precision weather forecasting throughout the Eglin land range, which is approximately two-thirds the size of Rhode Island; they are divided into four main warning areas.

“We work closely with the 28th Operational Weather Squadron to make sure our supported units are provided accurate and timely notice before any mission impacting severe weather happens,” said Capt. John Raczkowski, 46th WS, Operations Flight commander.

“Some of these units conduct specialized munitions testing and they can’t afford to be caught off guard when weather threatens. Maintaining a high degree of situational awareness is critical in protecting the 20,000 personnel here,” said Captain Raczkowski.

The people and missions at Eglin AFB are also susceptible to tropical events generated in the Gulf of Mexico and the Atlantic.

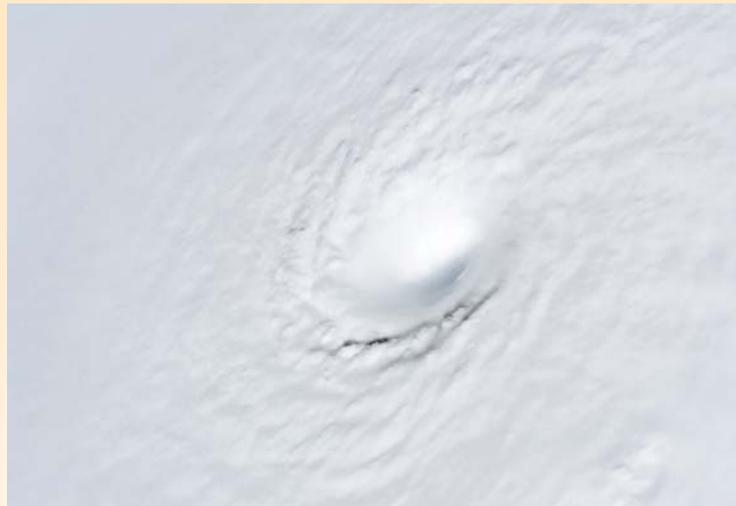
This has proved to be a major

focal point for the squadron this past year, contending with Hurricanes Ivan, Dennis, and Katrina and to a lesser extent, Tropical Storms Arlene and Cindy.

“Close coordination between the staff meteorologists, operations personnel, and squadron leadership focused all the available expertise into a single voice providing installation leadership with an accurate picture of the tropics and any potential threat,” said Captain Raczkowski.

Before Hurricane Ivan struck in September 2004, Eglin had never implemented an installation-wide mandatory evacuation. However, with Hurricanes Ivan and Dennis, the base executed two evacuations and secured all aircraft, test sites, personnel, and facilities for a major hurricane strike within a one-year period.

The 46th WS isn’t just about weather forecasts and supporting new weapon testing or operations; it’s also about providing outreach to the community with resources and people. With the devastation of the last two tropical seasons on the Gulf Coast,



This image of Hurricane Wilma was taken at 8:22 a.m. CDT Wednesday, Oct. 19, by the crew aboard NASA's international space station as the complex flew 222 miles above the storm. At the time, Wilma was the strongest Atlantic hurricane in history, with winds near 175 miles per hour. Photo courtesy of NASA.

members of the unit have provided much needed support.

They helped clear debris, worked with several agencies providing aid, and assistance and opened their homes to their Gulf Coast neighbors.

Mr. Dave Cramblet, a civilian staff meteorologist with the 46th WS, organized a donation drive to collect food, money and clothing for evacuees and provided support services to local shelters.

Sometimes, it’s about location, location, location; and the 46th Weather Squadron is in a very volatile location for tropical storms and cyclones generated in the Atlantic Basin and the Gulf of Mexico.

However, the men and women of the 46th WS will continue to provide quality forecasts to protect the people, equipment and mission in and around the Eglin AFB area of responsibility, no matter what the next hurricane season may bring.

Starting Over

Keesler families join Team Shaw

by Senior Airman Susan Penning
20th Fighter Wing Public Affairs
Shaw AFB, S.C.

It was Sunday night just before Hurricane Katrina made landfall when students at Keesler AFB, Miss., were ordered to report to a designated shelter.

“Students with dependents stayed in one of two rooms. One was for families with children and the other was for

Airmen with spouses only. Twenty families were packed in two rooms, which were originally office spaces,” said Airman Meg Dersarkissian, now assigned to the 28th Operational Weather Squadron with four other Keesler Airmen and their families.

“After power was lost, it got hot,” said Airman Doug Engel, who came here with his wife Angela and 6-year-old daughter,

Breanna. “We were instructed to pack a three-day supply of necessities. Our families ate Meals Ready to Eat after the food supply ran out. Showers were not available.”

Eventually, after a few more days, single students were evacuated by air to Sheppard AFB, Texas, while families were given the option to drive to Maxwell AFB, Ala., to await further instructions.

“Those with a full tank of gas left for Maxwell. Those who didn’t siphoned gas out of damaged vehicles and vehicles belonging to students who gave permission,” said Airman

Engel. Airman Dersarkissian and her husband didn’t have a car, so they joined Airman Dale Walker and his wife in their car with the Walker’s two dogs.

After a week at Maxwell, these five families, eager to put the memory of Katrina behind them, received orders for Shaw AFB, S.C. They came with what was left of their homes, most of which fit in a few duffel bags. Although these Airmen will eventually return to Keesler to finish their technical training, they can officially call Shaw and the 28th OWS, home.

“NCOs in the unit have already stepped up to take the place of military training and our contract trainers are poised to deliver classroom instruction if needed,” said Master Sgt. James Kelley, 28th OWS training superintendent.

“I’ve been really impressed so far by how these Airmen have handled their situation. They are mature and gracious,” said Sergeant Kelley. The families say they already feel like Shaw is home and are overwhelmed by the outpouring from the community.

“We’ve been given brand-new furniture, bedding and other household necessities,” said Airman Walker. A car was even donated to Airman Dersarkissian and her husband. “If this is how the Air Force runs, I’m glad I signed up,” said Airman Scott Lowrey.

Helping families displaced here isn’t all Shaw’s doing, however. The base currently has 69 personnel deployed to New Orleans to help with relief efforts. Base officials working here and in New Orleans say they are committed to helping displaced families build a new life at Shaw, and to rebuilding what was lost in the Gulf Coast region.



This thank you note was written by 28th OWS Airmen to the Shaw AFB community after Hurricane Katrina.

To all the Airmen and families of Shaw and the local community: We, the families evacuated from Keesler, would like to thank you for your generosity and support during this difficult time. We are overwhelmed by your compassion and kindness. It is an unexpected blessing. Because of all that was made available to us (furniture, kitchenware, bedding, etc.), our households were established in a matter of days. We would like to offer special thanks to our sponsors, the chaplains, family support center, the 28th OWS, and the Shaw community. We are very happy to be a part of the Shaw family and look forward to our stay here.

Weather training back on track

by Mr. Edward Ring
81st Training Wing Weather Training Flight
Keesler AFB, Miss.

The Weather Forecaster Apprentice Course resumed training at Keesler AFB, Miss., a mere three weeks after Hurricane Katrina pounded the installation, and more than six months earlier than base officials had originally forecasted.

According to former 81st Training Wing Commander Brig. Gen. William Lord, Keesler's specialized instruction and equipment cannot be replicated anywhere else in the Air Force, which was the driving force behind the accelerated resumption of the base's training mission.

"One of the reasons we've accelerated our return to training is that it's the right thing to do – some of our training facilities received little damage at all," General Lord explained. "The second is that we're the only place in the Air Force that teaches many of these specialties and a tremendous investment in infrastructure has already been made here."

Weather Technical Training restarted Sept. 19 for 151 Airmen, Sailors and Marines including 82 Airmen who returned from Sheppard AFB, Texas, where they evacuated after the storm. [The students returned to the areas in the course where they left off before Katrina].

"Returning students initially came back sub-

dued and a bit shell shocked," said Tech. Sgt. Krista Landreneau, the instructor supervisor for the consolidated portion of the course. "After about a week, they resumed the normal student mentality and behaviors."

Although training is back on track, it is not without distractions. The Schoolhouse suffered considerable damage at the hands of Hurricane Katrina, especially in the observatory. Several windows facing the east side were blown in, allowing water to seep through the floors and walls to the second and first floors in the central part of the building.

The observatory was also partially lifted off the top of the building, causing significant structural damage to the roof. The rain gauge from the FMQ-19, Automated Meteorological Station blew away but the wind sensors survived (However, the archive wind data was lost due to power outages). Base civil engineers have temporarily repaired the roof while they evaluate the extent of the damages. The good news is that all the classrooms are fully opera-

tional and ready to support the training mission.

"Despite all the damages to the Joint Weather Training Complex, we were the first training flight on base to resume training," said Capt. Richard Stedronsky, Weather Training Flight commander. "We couldn't have accomplished this daunting task without the dedication and hard work of the weather training

mental courses are in the process of qualifying to teach the CWTO course.

"We've lost a great deal of manpower, and a large number of us are still dealing with personal issues, such as finding a house, rebuilding what's left of our homes, or dealing with insurance claims.

The local community is also still in need of extensive repairs, especially to its infrastructure.



Mr. Paul Leidig, CWTO Instructor, (left) describes the FMQ-19, Automated Meteorological Station, to the first Combat Weather Team Operations class since Hurricane Katrina hit Keesler AFB, Miss. Tech Sgt Steve Baldinger, CWTO instructor, looks on. Photo courtesy of 81st Training Wing.

flight instructors and support personnel. Everyone put service before self, and it allowed us to reconstitute training well ahead of schedule."

Due to hardships created by Katrina four of the nine instructors from the Combat Weather Team Operations course were relocated. To alleviate the situation, instructors from the Weather Officer course and other supple-

However, the training mission rolls on," notes Captain Stedronsky.

The Weather Forecaster Apprentice course is operating at 100 percent, and the CWTO course started with 24 students after Thanksgiving.

The Weather Officer course is scheduled to restart in March 2006, with hopes that the supplemental courses Radar, Tropical, and Space Weather will start later in the spring.



Insight from afar

Anatahan, a volcano located 165 nautical miles north of Andersen AFB, Guam, erupts Aug. 24, 2005. In May 2003, the volcano erupted for the first time in recorded history. It spewed ash and steam nearly continuously from January through early September 2005. Photo courtesy of U.S. Geological Survey.

by Mr. Miles Brown
Air Force Weather Agency
Public Affairs
Offutt AFB, Neb.

On a small, uninhabited island in the North Pacific, a volcano erupts for the first time in more than a century.

Among the first people tracking the spewing hot, toxic gas-filled ash cloud are sitting half a globe away in the heartland of the United States. They are the Air Force Weather Agency's Meteorological Satellite Applications branch analysts at Offutt AFB, Neb., and the only Department of Defense meteorologists monitoring and issuing volcanic ash cloud forecasts for some of the most active, yet remote, volcanoes in the world.

"As the DoD's center for volcanic ash cloud advisories and forecasts, our technicians provide a stan-

darized and consistent set of timely advisory and forecast products," said Mr. Charles Holliday, the METSAT branch chief at AFWA.

But why is AFWA worried about a volcano halfway around the world? The answer is simple - our Nation's military forces are operating all over the world, and volcanic ash presents a serious threat to people, equipment and the mission.

According to Mr. Holliday, having one source for tailored volcanic ash forecasts is essential to DoD planners for both situational awareness and decision making.

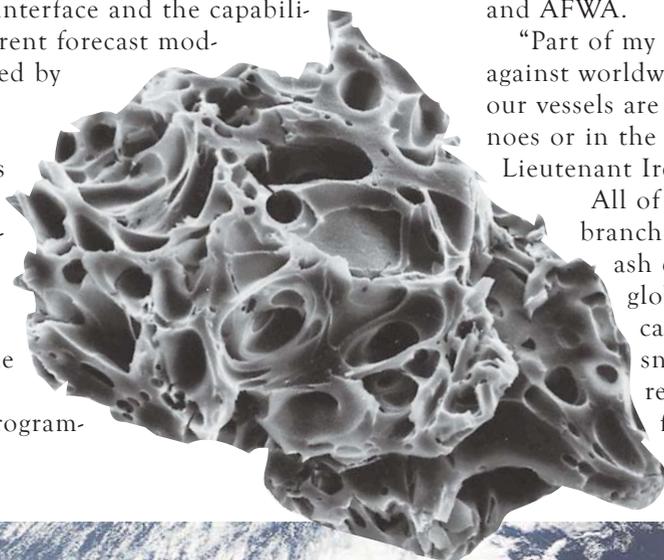
"Our mission is to reduce threats to aviation and protect other DoD resources by providing our customers with timely, detailed packages of information regarding worldwide volcanic events," he said.

The Agency's meteorological satellite technicians started issuing global volcano products in 2000, and the mission continues to grow annually. From

September 2000 to December 2004, the branch identified more than 1,800 airborne ash eruptions emitted by 80 different volcanoes. In 2004, the analysts detected 544 eruptive events and produced more than 6,800 volcano products to include satellite analysis, PUFF graphical forecast products, text bulletins, and e-mails.

“The volcanic ash plume dispersion model [named PUFF] output is an animated graphical forecast visualization of an ash eruption’s projected height and path,” said Ms. Jenifer Piatt, a METSAT meteorologist at AFWA. “The PUFF graphics, coupled with e-mail and text messages provide our customers with advisories they can access and use to protect people and equipment.”

PUFF was initially developed by the University of Alaska’s Geophysical Institute. The AFWA specific graphical user interface and the capability to ingest current forecast models were provided by Johns Hopkins University’s Applied Physics Laboratory. The PUFF visualizations were also recently upgraded and enhanced by the Operational Applications programmers at AFWA.



These modifications added the new capability to handle multiple eruption scenarios and reduced the runtimes for PUFF models. Additionally, the programmers added better map backgrounds improving the end product for customers.

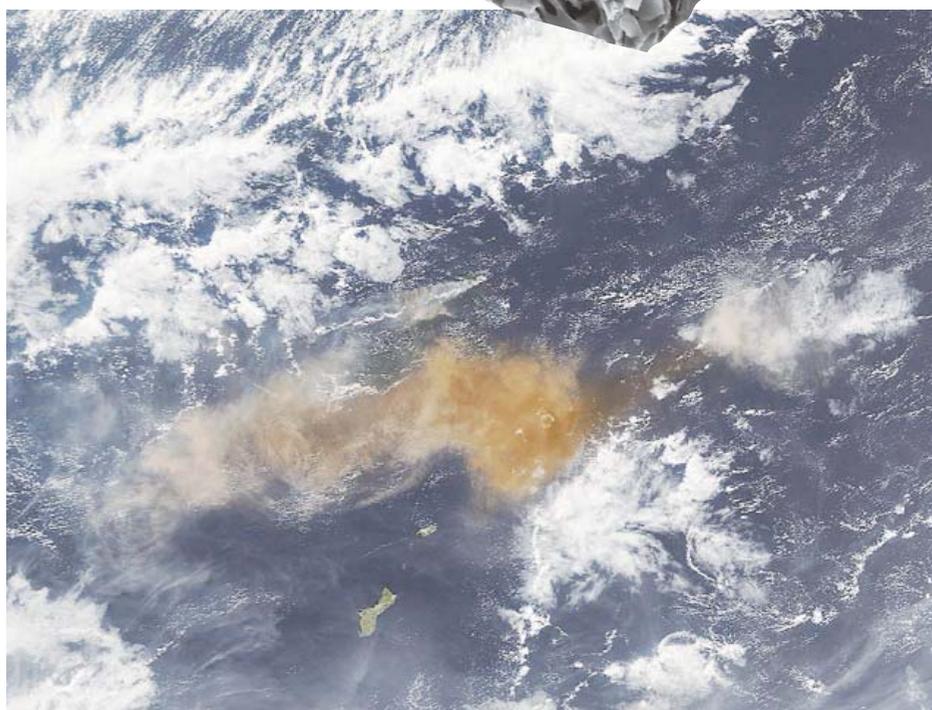
The METSAT branch produces and transmits their volcanic ash cloud forecasts packages 24/7 to both U.S. military and government agencies worldwide.

“Our customers include selected military installations, Navy and Coast Guard vessels at sea, and the U.S. Geological Survey’s Volcano observatories overseas and Volcano Disaster Assistance Program,” said Lt. j.g. Scott Ireton, a U.S. Navy weather officer assigned to AFWA’s METSAT branch.

Lieutenant Ireton also serves as the main liaison, with respect to volcanic ash, between the U.S. Navy and AFWA.

“Part of my job is to check volcanic activity against worldwide U.S. Naval operations to ensure our vessels are not in the vicinity of erupting volcanoes or in the path of volcanic ash clouds,” said Lieutenant Ireton.

All of this may seem like a tall order for a branch of less than 25 people, but volcanic ash cloud forecasting is only part of their global mission. They also track and forecast tropical cyclones, dust storms, snow depths and a host of special event requirements. It’s all in a day’s work for the Meteorological Satellite Application branch at the Agency.



(Above) Close view of a single ash particle from the eruption of Mount St. Helens; image is from a scanning electron microscope. The tiny voids or “holes” are called vesicles and were created by expanding gas bubbles during the eruption of magma. Photo courtesy of USGS.

(Left) Anatahan, as seen from a NASA satellite camera, spreads an ash cloud more than 300 miles wide across the Pacific Ocean in April 2005. The eruption and massive ash cloud interrupted air and sea operations during a Northern Cope exercise. Photo courtesy of NASA.

A 'record' homecoming

by Senior Master Sgt. David Jenkins
Joint Meteorology and
Oceanography Center
Camp Victory, Iraq

A crate of Iraqi meteorological records recently completed a historical journey. The records were shuffled from Baghdad, just after the fall of Saddam Hussein, to the peaceful mountains of North Carolina. Now, they have been returned to Baghdad and their grateful caretakers – the Iraqi Meteorological Organization.

The tale began during the combat phases of Operation Iraqi Freedom in the spring of 2003. Maj. Dave Coxwell and weather troops from the 3rd Infantry Division arrived at the Baghdad International Airport to find the airport weather station had been looted and vandalized. However, they were able to salvage 40 years of upper-air data.

The Republican Guard had issued a directive to burn all documents, regardless of purpose. All

that was left were huge, smoldering mounds of ash.

Mr. Muhaned Shafic, the former IMO Director General, cleared the 3ID weather team to send the upper-air data to the Air Force Combat Climatology Center in Asheville, N.C., to be archived electronically on the condition the records be returned in the same condition as released and the Iraqis get a soft copy of the data.

The weather team shipped the records to AFCCC where every page was scanned and added to their database for use by civilian and military agencies. Once the records were electronically archived, AFCCC carefully re-packed the records and sent them to Camp Victory, Iraq, to be returned to the IMO. After almost a year in storage at Camp Victory, the record's final trip home began in December 2005. Maj. Dave Runge, the OIF Joint Meteorology and Oceanography Center officer, and Master Sgt.

Charles Monk, the weather team superintendent, coordinated the return of the records with current IMO Director, Dr. Dawood Mahmood.

With assistance from the United Kingdom Meteorological Office and the World Meteorological Organization, the IMO will soon start taking upper-air observations at Basrah. The cities of Basrah and Baghdad are centered in a gap of radio-sonde coverage provided by Marine and Air Force weather teams. This additional capability will greatly enhance the accuracy of short-term forecasts for OIF commanders and forces, and indicates the IMO is making progress in its reconstitution efforts.

"Having a small part in this progress was gratifying for all deployed weather folks who took part in the historic travels of this crate of Iraqi weather records," said Major Runge. "To the Iraqis, it was another symbolic step in Iraq's transition. We were happy to play a small role in assisting the IMO get back on their feet."



(left) Maj. Dave Runge and Master Sgt. Charles Monk transported the crate with 40-years of upper-air data to the IMO's airport weather office Dec. 4, 2005. Mr. Muhanad Al Bermani, a five-year veteran forecaster with the Baghdad International Airport weather office, and Mrs. Israa Takarity, the BIAP forecast office supervisor eagerly receive the records. Photo courtesy of OIF Joint METOC, Camp Victory, Iraq.

Staff Sgt. Raymond Gibson, a forecaster with the 19th Expeditionary Air Support Operations Squadron, prepares a briefing for 2nd Squadron, 17th Cavalry Regiment pilots at FOB Warrior, Iraq.



Final observations Lasting memories

by Staff Sgt. Randall Vink
19th Expeditionary Air Support
Operations Squadron
FOB McKenzie, Iraq

It was a well orchestrated service. As bagpipes played and 21 guns echoed throughout the land, we laid to rest the noblest of Forward Operating Base McKenzie, Iraq; at least that's what I typed into the Internet chat while transmitting the last meteorological aviation report observation for FOB McKenzie.

Saturday, Nov. 19 was the last time I entered KQAV {locator identifier code for FOB McKenzie} into the AF Form 3803, Surface Weather Observations Form. I remember that day well. Armed with nothing more than a laptop, Kestrel 4000, and excellent military training, the final observation was reported.

The sky was scattered at 12,000 feet, broken at 20,000 and yes, the wind data was estimated; these were the conditions as the 2nd Squadron, 17th Cavalry Regiment of the 101st Airborne Division (Air Assault),

moved their main contingent north after closing FOB McKenzie.

I was part of a three-man weather team from the 19th Expeditionary Air Support Operations Squadron stationed at Fort Campbell, Ky., attached to the 2-17th CAV currently deployed to Iraq. Providing support to a CAV Squadron is much different, in almost every aspect than it is supporting a traditional Air Force unit.

When was the last time you were allowed to wear a cowboy hat in formation? Well, as a member of the CAV, that is just one of the many unique traditions we were encouraged to join. Others, included using some unique phrases commonly heard in the so-called, CAV country such as Stable Call, Spur Ride, and OUT FRONT. Supporting an aviation unit of OH-58D helicopters whose primary 24/7 mission is reconnaissance and surveillance, and a quick reaction force, is an experience I will never forget.

We arrived at FOB McKenzie with the 2-17th CAV in late September to relieve the 1-17th CAV of the 82nd

Airborne Division. Their eventful one year adventure in Iraq ended and it was our turn to play in the dirt. Of course, operating at a forward operating location does pose some challenges, such as not having all the comforts of home. One challenge was that we didn't have a dining facility; therefore, at meal time we would have people bring food around to a meal tent.

Two months, an election, and several significant operations later, we needed to redeploy our unit to FOB Warrior. We continued normal operations while adding convoys, mission briefs, and closing down a weather station. Our fearless leader and NCO in charge moved north to prepare for our arrival. After closing down the weather station at FOB McKenzie we caught a CH-47 to FOB Warrior.

I speak for my team, Tech. Sgt. Kurt Rohl, Staff Sgt. Raymond Gibson and myself, in saying that even though we moved to a bigger FOB with a world-class dining facility, we will always have a soft spot for that dusty, deserted little FOB that we knew by the name of KQAV.

New tool for 'The Deid'

by Capt. Michael Horner
379th Expeditionary Operations Support
Squadron
Al Udeid AB, Qatar

Until recently, weather forecasters from the 379th Expeditionary Operations Support Squadron did not have a tool in place adequate enough to alert key decision makers of the threat imposed by an impending thunderstorm's fury. Now they do, in the form of a new radar system called the FMQ-18, otherwise known as a Tactical Weather Radar.

The TWR at Al Udeid AB, Qatar, went operational Dec. 10, 2005. It is easy to spot near the Combined Air Operations Center. The radome resides on top of a 40-foot steel tower, enclosing a six-foot radar dish.

The TWR replaced a non-Doppler radar which lacked robustness and adequate functionality for the base's expanding, more permanent mission.

The TWR is a Doppler radar which can effectively detect precipitation out to a distance of 200 miles. It

can also detect turbulence and outflow boundaries, as well as major dust storms, known as haboobs in this part of the world.

The word haboob comes from the Arabic words for "phenomena" and "wind."

Meteorologists in

the Middle East, and sometimes in the United States, use the term haboob when referring to an outbreak of strong winds and dust or sand storms. Haboobs are often initiated by thunderstorm activity. Some may find it surprising, but according to the Air Force Combat Climatology Center, Al Udeid AB averages 11 thunderstorms per year. In addition, some of these storms have the potential of being severe.

On Nov. 17, 2005, a large thunderstorm cell collapsed approximately 20 miles to the north of the base, generating a haboob with warning-level winds. Strong winds picked up enough dust and sand to reduce the visibility on base to one-fourth of a statute mile. This event was not detected by the old non-Doppler radar.

The radar unit now installed at Al Udeid has a long history in the U.S. Central Command Air Forces area of responsibility. It was originally installed at Prince Sultan AB, Saudi Arabia, in 2000, and was later decommissioned in 2003. The radar was disassembled and moved to Al Udeid shortly thereafter, but delays kept it from coming on-line until now.

"Since then, many components of the radar have been upgraded, and the TWR installed at Al Udeid is significantly more reliable and more capable than the [original] PSAB system," said Mr. Raymond "Buzz" Kandler, at Scott AFB, Ill. Mr. Kandler is a TWR lead command manager with the Air Force Weather Agency.

There are only nine real-time TWRs used by the Air Force worldwide, most of which are located in Europe.

"The TWR provides real-time data critical for making mission-essential decisions," said Master Sgt. Kelly Todd, the NCO in charge of the 379th EOSS Weather Flight.

The value of TRWs is easy to see when you look at the big picture, according to Maj. George Covin, the 379th EOSS acting commander.

"By alerting forecasters of thunderstorm activity and other hazards, it will also help save lives and protect millions of dollars worth of DoD and coalition resources," said Major Covin.

Workers at Al Udeid AB, Qatar install the new FMQ-18, Tactical Weather Radar. Photo Courtesy of 379th Expeditionary Operations Support Squadron.

Moving Up

New 98,000 sq. ft. building offers weather flight personnel comfortable, modern work-space

by Air Combat Command Staff Report
Langley AFB, Va.

“Glad to see it go!” This is what the members of the Air Combat Command, Air Operations Squadron weather flight at Langley AFB, Va., will be thinking when their old office building, Building 21 on Elm Street., is finally demolished.

After nearly a one-year delay, the weather flight finally moved into the new 98,000 square-foot Operations Support Center in August. The flight now enjoys providing its 24/7 weather operations working from the modern comforts of the new OSC building.

The OSC will become the command’s new state-of-the-art Command, Control, Intelligence, Surveillance, and Reconnaissance work center, equipped with capabilities designed to facilitate communication and decision making in peacetime and crisis situations. The weather flight and the AOS are just part of many OSC tenants working in the center.

“Although our building is being torn down, our flight continues to be one of the most unique combat weather teams in Air Force Weather,” said 1st Lt. Bryan Ray, Weather Flight Commander.

“Our mission is to plan, coordinate, and execute the worldwide delivery of combat aircraft, more commonly known as Coronet missions. The majority of the Coronet

missions we support transit several Operational Weather Squadrons’ areas of responsibility and involve multiple aerial refueling tracks, so we really need to be aware of potential aviation weather threats all over the world,” said Lieutenant Ray.

The AOS supports U.S. Air Force fighters and bombers, Navy, Marine, Air National Guard, Reserve and Allied Nation combat aircraft, including foreign military sales.

“We support approximately 650 Coronet missions annually, with our busiest times being during Air and Space Expeditionary Force swap out months,” said Tech. Sgt. John Frank, the flight’s NCOIC. Since Coronet missions typically involve both ACC and AMC aircraft, AOS is designated as the lead weather unit.

“Due to the global nature of the AOS mission, our flight operates an around-the-clock forecast center to develop Coronet Controlling Mission Execution Forecasts for each mission and ‘Metwatch’ the route and its potential abort bases until it lands,” said Sergeant Frank.

The primary focus of the CMEF is forecasting for the air refueling areas, to include clouds, visibility, winds, and any significant upper level hazards expected within 5,000 feet of the planned refueling altitude. The CMEF is then integrated as part of the flight weather brief-

ing the departure base weather unit or servicing OWS issues for the particular Coronet mission.

“We post our CMEF abort-base weather forecast to our Web site no later than six hours prior to a mission’s launch to allow authorized remote user access,” said Sergeant Frank.

The AOS weather flight’s CMEF product differs from most horizontal weather depictions in that forecast data is “time-phased” with the estimated route times as compared to other charts that are usually “point in time.”

Because of this time phasing, there may be slight variations from the standard Joint Air Force and Army Weather Information Network or OWS product covering a given portion of the route.

“This requires some extrapolation between models, charts, and some adjustments based on the needs of the particular type of mission aircraft; relying heavily on the talent and experience of our forecasters,” said Lieutenant Ray.

With a new facility, the Air Operations Squadron weather flight is now armed with a top-notch facility to match their top-notch weather forecasting. They will continue to provide the Coronet mission planners with environmental situational awareness for every possible mission.



Photo of the new state-of-the-art operations support center. Along with the weather flight, this building will also house the Air Force Rescue Coordination Center, the Air Force's Command and Control Battle Lab and Transformation Center, and the 710th Combat Operations Squadron. Photo courtesy of ACC/AOS weather flight.

Weather critical for “Return to Flight”

by 45th Weather Squadron
Staff Report
Patrick AFB, Fla.

As NASA was finishing preparations for STS-114 “Return to Flight” space shuttle mission last summer, the 45th Weather Squadron at Patrick AFB, Fla., was gearing up for our role in the launch. The 45 WS works closely with our mission partners across the Banana River at the Kennedy Space Center. That is

essential, because the space shuttle has its own set of weather criteria needing to be metwatched for ground and launch operations.

The Shuttle’s Launch Weather Officer, Ms. Kathy Winters, issued numerous ground operations forecasts. Two critical forecasts she issued were the “roll over” and “roll out” forecasts. The “roll over” forecast was disseminated when the shuttle orbiter Discovery was moved from the Orbiter Processing Facility to the Vertical Assembly Building. The “roll out” forecast



Photo of the Space Shuttle Discovery atop the Shuttle Carrier Aircraft on the ramp at Barksdale AFB, La., during an overnight stop, Aug. 21, 2005. Photo courtesy of NASA.

was issued for the transport of the orbiter from the VAB to the launch pad. "Roll out" is roughly a 6-hour trip (moving at just over 1 mile per hour) with the orbiter exposed to the elements. One of the crucial weather constraints of the orbiter is it can't be exposed to heavy precipitation. This made the forecast and timing of the "roll out" extremely tricky for a typical summer day in Florida.

Needless to say, the Shuttle Discovery made its way to the launch pad without any weather concerns, and "Return to Flight," preparations continued. The first launch attempt was scrubbed due to mechanical problems and the new launch date was postponed until July 26, 2005 at 10:30 in the morning. The 45 WS'

full team was on console and ready to support. The main weather concern was thunderstorms forming over the Gulf Stream and whether or not they (or their anvil clouds) would push far enough inland to stop the launch. Numerous Lightning Launch Commit Criteria were violated during the countdown, but at the T-0 time all of the conditions had improved. Discovery took off on its 13-day mission, making it the first NASA space shuttle launch since the Columbia disaster in 2003.

On landing day, thunderstorms formed within 30 nautical miles of the shuttle landing facility. The Shuttle's in-flight weather support, including landing forecast, is provided by the National Weather Service's Spaceflight Meteorology Group at Johnson Space Center, in consultation with the weather squadron. NASA officials made the decision to use the alternate landing site located at Edwards AFB, Calif.

The shuttle Discovery landed in the desert Aug. 9 at 8:12 a.m. As soon as NASA decided to use the alternate landing site, the 45th WS leadership was

coordinating with the Department of Defense Manned Spaceflight leaders to gather a team for the ferry flight mission. A ferry flight is performed when the shuttle orbiter is mated on top of a modified Boeing 747, known as the Shuttle Carrier Aircraft, and flown back to Kennedy Space Center.

Three members of the 45 WS; Capt. Mike McAleenan, Tech. Sgt. Scott Jones, and Staff Sgt. Christopher Lozzi, were selected for the mission to accompany DDMS and NASA members to California.

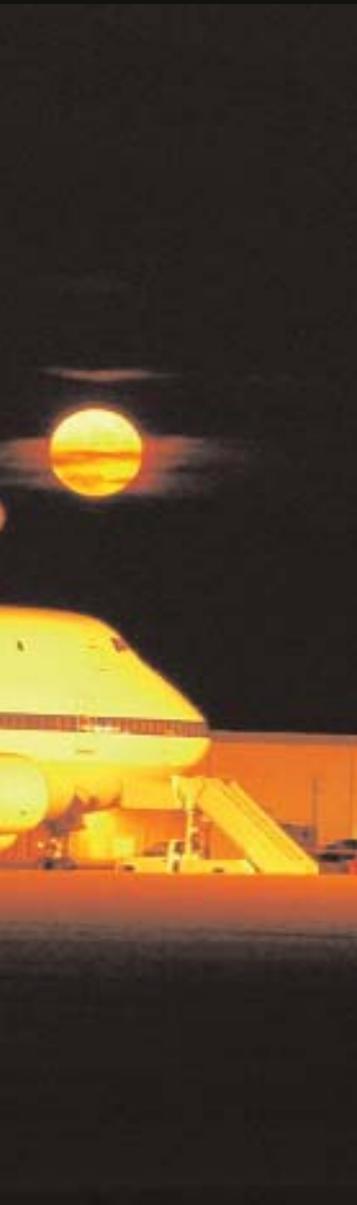
Once there, they coordinated the cross-country trip forecasts with the Shuttle Launch Weather Officer and three Operational Weather Squadrons. During the team's first two days in California they encountered unusually adverse weather. The team provided the shuttle managers with a local forecast to include quarter-inch hail and 35-knot winds in thunderstorms. Overnight, Edwards AFB reported winds at 33 knots, quarter-inch hail and a tornado to the southeast moving north. Luckily, Discovery did not get hit by the tornado but it did get hit by the wind and hail.

The SCA left Edwards Aug. 19 and landed at Altus AFB, Okla. The ferry flight weather team met with the Altus combat weather team and continued to provide updates to the shuttle managers. Less than three hours later, the SCA took off from Altus, later landing at Barksdale AFB, La. The final leg of the trip back to the Kennedy Space Center occurred uneventfully Aug. 21.

The mission of the 45th Weather Squadron is to "exploit the weather to ensure safe access to air and space" at Cape Canaveral Air Force Station, NASA's Kennedy Space Center and Patrick AFB, Fla. Exploiting weather to ensure safe access to air and space sounds much like the mission statement of every other Air Force Weather unit. The unadvertised part of this statement is the fact that the 45th's area of operation encompasses the 15 million square miles of air, land and sea that make up the eastern range.

The challenges encountered during the shuttle Discovery's flight and return to home station were not unexpected. The location that makes Cape Canaveral AFS, NASA's Kennedy Space Center and Patrick AFB so attractive for the space launch program, also creates distinct weather challenges. The STS-114 mission was just one example of the 45th Weather Squadron's essential role in America's space program. The space program is in good hands thanks to hard work of these dedicated professionals. They watch for subtle changes in atmospheric conditions which could mean the difference between a scrubbed launch or mission complete on the Cape.

These challenges are just part of the dynamic that make the 45th Weather Squadron the world's premier



Promotions

The following AFW
personnel were selected for promotion:



To colonel

Elizabeth Borelli, 88th MSG, Wright-Patterson AFB, Ohio
Eric McKinley, 422nd ABG, RAF Croughton, England
Richard Twigg, 3rd ASOG, Fort Hood, Texas
Carolyn Vadnais, Air University, Maxwell AFB, Ala.
Kim Waldron, HQ AFWA, Offutt AFB, Neb.
Mark Zettlemyer, HQ USAF, Washington, D.C.

To lieutenant colonel

Mark Adair, HQ USAF, Washington, D.C.
Dave Andrus, 20th OWS, Yokota AB, Japan
David Bacot, 7th WS, Heidelberg, Germany
Steven Cahanin, 15th OWS, Scott AFB, Ill.
William Carle, HQ AFSOC, Hurlburt Field, Fla.
Karen Darnell, NPS, Monterey, Calif.
Thomas Goulter, 1st SVS, Langley AFB, Va.
Scott Jacobs, HQ USAFE, Ramstein AB, Germany
Jonathan Kelly, 26th OWS, Barksdale AFB, La.
Gary Kubat, 45th WS, Patrick AFB, Fla.
Brian Leatherwood, HQ EUCOM, Stuttgart-Vaihing, Germany
James Mackey, 46th WS, Eglin AFB, Fla.
Joseph Piasecki, HQ USAF, Washington, D.C.
Brian Pukall, USSOUTHCOM, Miami, Fla.



Muriel Ramirez-Salas, 12th AF, Davis-Monthan AFB, Ariz.
Robert Trayers, HQ USAF, Washington, D.C.
Jimmie Trigg, DTRA, Alexandria, Va.



To chief master sergeant

Michael Clark, HQ AMC, Scott AFB, Ill.
Patrick Flieg, HQ PACAF, Hickam AFB, Hawaii
Andrew Hopwood, USSOCOM, MacDill AFB, Fla.
Ricky Keil, 19th ASOS, Fort Campbell, Ky.
Jeffrey Koch, 21st OWS, Sembach AB, Germany
Stephen McConnell, 57th OSS, Nellis AFB, Nev.
Donald Parks, HQ AFWA, Offutt AFB, Neb.
Richard Spears, 25th OWS, Davis-Monthan AFB, Ariz.

Xchanging concepts

by Mr. Miles Brown
Air Force Weather Agency
Public Affairs
Offutt AFB, Neb.

Working with our neighbors in South America may seem easy on the surface, but cooperation between foreign governments and air forces requires work and a bit of sharing.

When the U.S. Southern Air Forces formed an engagement team in early 2000, the goal was to conduct multi-discipline subject matter expert exchanges at the airman-to-airman level. One of those disciplines was weather, and thus was born an opportunity to exchange ideas and share a passion – meteorology.

When Maj. Muriel Ramirez-Salas embarked on a career broadening assignment as an international affairs specialist for the 12th Air Force at Davis-Monthan AFB, Ariz., she did not expect to work weather issues for some time.

However, when the opportunity to take part in an exchange program with the Uruguayan Air Force last September popped-up, she volunteered as the weather expert for the mission. She found herself back in weather field – if only for a few days.

“I was the one of a

dozen Spanish-speaking subject matter experts selected for this trip,” said Major Ramirez-Salas.

“Our goal was to understand the capabilities and the needs of the Uruguayan Air Force or, in Spanish – “Fuerza Aérea Uruguay,” or FAU. My goal was to exchange support concepts and information with the Uruguayan Air Force Meteorological Service.

“My days were filled with briefings at the National Meteorology Directorate, subject matter FAU facilities, and weather training centers,” said Major Ramirez-Salas. “I had every facet of the FAU’s weather operations broken down and charted-out,” she explained.

She was also involved in planning future national weather proj-

ects that will impact their air force and army for many years to come.

“Overall, it was inspiring to see the level of involvement in daily operations and the quality of the FAU’s weather support capabilities, considering their limited resources,” she added.

“They only have about 30 meteorologists – half are observers and the rest are forecasters. They cover three air bases and six deployed billets in support of United Nation’s peacekeeping missions in the Congo and Eritrea.”

Additionally, the FAU subject matter experts provide tactical support to forward deployed air force and army units during field exercises or real-world deployments.

According to Major Ramirez-Salas awareness of various militaries and their practices is important for the future cooperation between the United States and Uruguay, and for any peacetime engagements in the SOUTHCOM area of responsibility.

“I volunteered to Uruguay to exchange weather support concepts and information. I returned with a much better knowledge of the country’s military and their procedures and capabilities,” she said.



U.S. Southern Command

The United States Southern Command is the unified command responsible for all U.S. military activities on the land mass of Latin America south of Mexico; the waters adjacent to Central and South America; the Caribbean Sea, with its 13 island nations, and European and U.S. territories; the Gulf of Mexico; and a portion of the Atlantic Ocean.

Since Sept. 26, 1997, the command headquarters has been located at Miami, Florida. It is one of five geographically unified commands under the U.S. Department of Defense.

Southern Command’s area of responsibility encompasses 32 countries (19 in Central and South America and 13 in the Caribbean) and covers about 14.5 million square miles. The region represents about one-sixth of the landmass of the world assigned to regional unified commands.

The command’s mission is to conduct military operations and promote security cooperation to achieve U.S. strategic objectives. This mission has never been more critical than it is today, in the wake of the September 11, 2001 terrorist attacks on the United States. This mission has no more important focus than within our own hemisphere.



Staff Sgt. Ernesto "Ernie" Ruiz
20th ASOS, Fort Drum, N.Y.
Combat Weather Forecaster

Years In Service: 8

Hometown: Phoenix, Ariz.

Role Model / Why? My father. My father raised my brother and me on his own. He taught me the values of hard work, being a team player, devotion and that getting dirty isn't a bad thing. From the time I was very young, his morals and guidance have kept me focused on doing my very best.

Hobbies: Spending time with my 6-year old daughter, fishing, Jeeps and snowmobile riding in the bitter cold at Fort Drum.

Most Memorable Air Force Weather Experience: My deployment to Forward Operating Base Asadabad, Afghanistan, during Operation Enduring Freedom. It was extremely rewarding to operate in a joint environment supporting special forces and aviation operations tasked with apprehending high-level Taliban leaders. I felt a great sense of pride knowing my weather inputs were vital to the successful execution of Operation Avalanche. Additionally, I feel that

facing and overcoming the challenges associated with providing weather support in such a data sparse region as northeast Afghanistan served to make me a better weather forecaster and Airman.

Weather Warrior

Staff Sgt. Jaime Albarran
1st OSS/OSW, Langley AFB, Va.
Weather Forecaster

Years in Service: 6

Hometown: Bronson, Mich.

Role Model / Why? My Father, because he came to this country with very little and he was able to successfully achieve so much. If I can achieve half of what my father did, I would consider myself successful as well.

Hobbies: Weight lifting, reading, spending quality time with my family.

Most Memorable Air Force Weather Experience: My most memorable experience occurred this past summer while deployed to Iraq. Never having forecasted for desert conditions before, I found myself having to forecast in the worst dust storm season the region has seen in almost 30 years. Having to provide weather support for Air Force, Army, and coalition aircraft in a combat zone in those conditions, at times under direct fire, is definitely my most memorable experience.



Where in the weather world is ...

by Mr. Miles Brown
HQ Air Force Weather Agency
Public Affairs
Offutt AFB, Neb.

After more than 41 years with the Air Force, Mr. Stanley Tkach still enjoys going to work and serving his country and the men and women of the U.S. Air Force – who he calls his “close friends.”

Mr. Tkach is the Air Combat Command Assistant Weather Division Chief at Langley AFB, Va. He is responsible for working issues such as the stand-up of the warfighting headquarters, Army modularity, and Base Realignment and Closure.

His path to this lofty position began when he entered the Air Force as a 2nd Lieutenant in 1964, after graduating from Kent State University, Ohio, with a degree in mathematics.

While attending Officer Training School at Lackland AFB, Texas, Mr. Tkach was selected to study meteorology at the University of Utah in Salt



Mr. Tkach stands outside of Dobbins AFB, Ga., in 1966.

Lake City, Utah. Thus, he began his long and fruitful career in Air Force Weather.

His first weather assignment was to Dobbins AFB, Ga.

“I spent my first

year learning weather under the care and feeding of an Air Force warrant officer,” said Mr. Tkach.

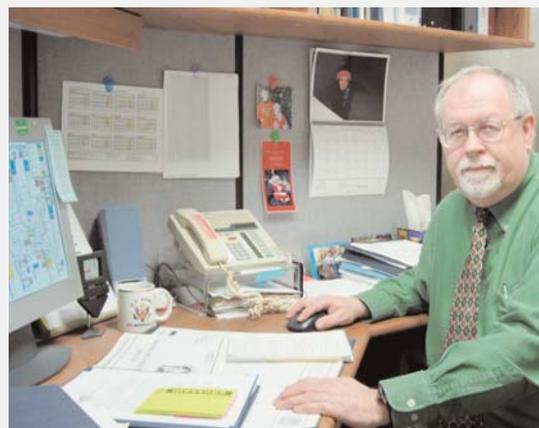
While at Dobbins AFB, he provided weather information to engineers and planners during development of the C-5 Galaxy cargo aircraft and briefed all seven of the original Mercury astronauts. After a fast-paced three years at Dobbins AFB, he went from the frying pan into the fire with an assignment to Andersen AFB, Guam.

“I arrived at Guam in February 1968, just as the police action in Vietnam became a full-scale conflict with 500,000 troops being ordered to Southeast Asia,” he said. “The majority of those troops came through Andersen AFB, making it one of the busiest Air Force bases in the world at that time.”

During his tenure at Andersen AFB, Mr. Tkach wore many hats. One of them was as a Tactical Air Command weather officer where he prepared and briefed all fighter deployments on their way to Vietnam. He provided daily weather support for bombing missions in North Vietnam. After a couple of years around the Island of Guam, he was off to the Pentagon, and the hum-drum life as a White House forecaster.

“I was part of a four-officer weather team covering the White House, Washington, D.C.; Camp David, Md.; San Clemente, Calif.; Key Biscayne, Fla.; and any additional location the President or his family traveled to during my four years at the Air Force Operations Center,” said Mr. Tkach.

That mission included everything from forecasting a break in thunderstorms for the wedding of President Nixon’s daughter in the Rose Garden



Mr. Tkach at his current job as ACC Weather Division Chief, Langley AFB, Va. Photos courtesy of HQ ACC

to briefing the Operations Center Commander prior to the start of an historical operation – Operation Linebacker II in Vietnam.

After the Pentagon, Mr. Tkach worked for five years in Army support positions at Fort Carson, Colo., and Korea. “Besides learning how to support the Army, I learned how to drive a five-ton expandable van and how to fly an OH-58 Kiowa Warrior helicopter,” he said.

The great forecasting challenges of the Korean Peninsula gave way to his last active-duty assignment at Langley AFB, Va., as a war planner, “as we were called back in those days,” he said.

He continued his dedicated career as an Air Force civilian after his retirement from active duty in 1984. Now, Mr. Tkach plans for operations in Panama, Haiti, and Somalia as well as operations in support of the Global War on Terrorism. He has earned several civilian awards to include being recognized as the 5th Weather Wing Civilian of the Year; six-time winner of the HQ Air Combat Command Tactical Air Command Outstanding Staff Support Civilian Best Award; twice recognized as HQ ACC Director of Operations Civilian Professional of the Year, and four-time recipient of the Air Force Outstanding Staff Support Civilian, Best Award.

“My 41 years with the Air Force have provided me with a most enjoyable and rewarding life,” said Mr. Tkach. “I have worked with some of the most talented and gracious people in the Air Force. It’s been a pleasure being a member of the Air Force Weather community.”

Salutes

RETIREMENTS

Maj. Steven Christy, HQ
AFWA, Offutt AFB, Neb.
Maj. Barbara Miner, HQ
AMC, Scott AFB, Ill.
Lt. Cmdr. Robert Stanton, HQ
AFWA, Offutt AFB, Neb.
Capt. Steve Barlow, 35th OSS,
Misawa AB, Japan
Senior Master Sgt. Jon Carillon,
159th WF, Camp Blanding, Fla.
Master Sgt. Robert Cory, HQ
AFWA, Offutt AFB, Neb.
Master Sgt. Timothy Harvey,
HQ AFWA, Offutt AFB, Neb.
Master Sgt. Terry Upchurch,
159th WF, Camp Blanding, Fla.
Tech. Sgt. Mark Billiot, HQ
AFWA, Offutt AFB, Neb.
Tech. Sgt. Jeffrey Grimm,
AFCWC, Hurlburt Field, Fla.
Tech. Sgt. Brian Wild, HQ
AFWA, Offutt AFB, Neb.

AWARDS AND DECORATIONS

DEFENSE MERITORIOUS SERVICE MEDAL

Col. Michael Bedard, 45th WS,
Patrick AFB, Fla.
Lt. Col. Michael Dennis, 18th
WS, Fort Bragg, N.C.
Capt. Steve Barlow, 35th OSS,
Misawa AB, Japan

MERITORIOUS SERVICE MEDAL

Lt. Col. John Coulter, 28th
OWS, Shaw AFB, S.C.
Lt. Col. Michael Dennis, 18th
WS, Fort Bragg, N.C.
Maj. Steven Christy, HQ
AFWA, Offutt AFB, Neb.
Lt. Cmdr. Robert Stanton, HQ
AFWA, Offutt AFB, Neb.

Senior Master Sgt. Jon Carillon,
159th WF, Camp Blanding, Fla.
Senior Master Sgt. Duane Limberg,
HQ AFWA, Offutt AFB, Neb.
Senior Master Sgt. Randy Nelson,
HQ AFWA, Offutt AFB, Neb.
Master Sgt. Patrick Barcelona,
28th OWS, Shaw AFB, S.C.
Master Sgt. Michael Cassady,
AFCCC, Asheville, N.C.
Master Sgt. Robert Cory, HQ
AFWA, Offutt AFB, Neb.
Master Sgt. Terry Upchurch,
159th WF, Camp Blanding, Fla.

JOINT SERVICE COMMENDATION MEDAL

Master Sgt. Dennis Ramsdell,
18th WS, Fort Bragg, N.C.
Tech. Sgt. Michael Casey, 159th
WF, Camp Blanding, Fla.
Staff Sgt. Joseph Taylor,
AFTAC, Patrick AFB, Fla.

AIR FORCE COMMENDATION MEDAL

Capt. Mindy Chavez, 45th WS,
Patrick AFB, Fla.
Capt. Charles Harding, HQ
AFWA, Offutt AFB, Neb.
Capt. Samuel Moore, HQ
AMC, Scott AFB, Ill.
Capt. Regina Tate, HQ AFWA,
Offutt AFB, Neb.
1st Lt. James Mitchell, 28th
OWS, Shaw AFB, S.C.
1st Lt. Henry Wurster, 28th
OWS, Shaw AFB, S.C.
2nd Lt. Brian Miller, 28th
OWS, Shaw AFB, S.C.
2nd Lt. Sarah Moss, 28th OWS,
Shaw AFB, S.C.
Senior Master Sgt. Alvin Hill,
HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Milette Bawek, HQ
AFWA, Offutt AFB, Neb.
Tech. Sgt. David Elliott, HQ
AFWA, Offutt AFB, Neb.

Tech. Sgt. James Jones, 45th
WS, Patrick AFB, Fla.
Tech. Sgt. Roscoe Moore, HQ
AFWA, Offutt AFB, Neb.
Tech. Sgt. Jason Nuy, Det. 11,
Heidelberg, Germany
Tech. Sgt. Kevin Safreed, 28th
OWS, Shaw AFB, S.C.
Tech. Sgt. Bennie Solberg, 28th
OWS, Shaw AFB, S.C.
Tech. Sgt. Richard Stage,
AFCCC, Asheville, N.C.
Tech. Sgt. Richard Throgmorton,
28th OWS, Shaw AFB, S.C.
Tech. Sgt. Shane Wagner, 18th
WS, Fort Bragg, N.C.
Tech. Sgt. Brian Wild, HQ
AFWA, Offutt AFB, Neb.
Staff Sgt. Daniel Ciuro, 45th
WS, Patrick AFB, Fla.
Staff Sgt. Negel Fredericks, HQ
AFWA, Offutt AFB, Neb.
Staff Sgt. Carlton Holt,
AFCWC, Hurlburt Field, Fla.
Staff Sgt. Sara Rought, 18th
WS, Fort Bragg, N.C.
Staff Sgt. Melissa Safreed, 28th
OWS, Shaw AFB, S.C.
Staff Sgt. Kenneth Viault, 28th
OWS, Shaw AFB, S.C.
Staff Sgt. Duane Willson, 28th
OWS, Shaw AFB, S.C.

ARMY COMMENDATION MEDAL

Capt. Cory Barack, 18th WS,
Fort Bragg, N.C.
Master Sgt. Richard Fry, Det. 2,
7th WS, Hanau, Germany
Master Sgt. Claude Tranter,
18th WS, Fort Bragg, N.C.
Tech. Sgt. Jason Colon, 18th
WS, Fort Bragg, N.C.
Staff Sgt. Robert Coe, 18th WS,
Fort Bragg, N.C.
Staff Sgt. Sara Rought, 18th
WS, Fort Bragg, N.C.

Staff Sgt. Benjamin Tusha, Det. 11,
7th WS, Heidelberg, Germany
Staff Sgt. Nathan S. Willems,
Det. 2, Hanau, 7th WS, Germany
Staff Sgt. Travis Wooten, Det. 1,
7th WS, Wurzburg, Germany

JOINT SERVICE ACHIEVEMENT MEDAL

Tech. Sgt. Owen Shockley, 18th
WS, Fort Bragg, N.C.

AIR FORCE ACHIEVEMENT MEDAL

1st Lt. Kaleb Nordgren, 28th
OWS, Shaw AFB, S.C.
2nd Lt. Jody Chevalier, 28th
OWS, Shaw AFB, S.C.
Master Sgt. Jimmy Dingle, 28th
OWS, Shaw AFB, S.C.
Tech. Sgt. Jeremiah Beckmann,
HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Jeffrey Peterson,
HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Brenda Degroot,
AFCCC, Asheville, N.C.
Staff Sgt. Charlton Holt,
AFCWC, Hurlburt Field, Fla.
Staff Sgt. Charles Malone, 28th
OWS, Shaw AFB, S.C.
Staff Sgt. Scott Manning,
AFCCC, Asheville, N.C.
Staff Sgt. Juan Pluguez, 28th
OWS, Shaw AFB, S.C.
Staff Sgt. Jason Stockslager,
AFCCC, Asheville, N.C.
Senior Airman Corinne Callins,
28th OWS, Shaw AFB, S.C.
Senior Airman Matthew Ciampa,
28th OWS, Shaw AFB, S.C.
Senior Airman Seann Clark,
HQ AFWA, Offutt AFB, Neb.
Senior Airman Aaron Dominique,
28th OWS, Shaw AFB, S.C.
Senior Airman Daniel Duscher,
28th OWS, Shaw AFB, S.C.
Senior Airman Michael Eudy,
HQ AFWA, Offutt AFB, Neb.

Senior Airman Shara Evans,
28th OWS, Shaw AFB, S.C.
Senior Airman Mark Faulkner,
28th OWS, Shaw AFB, S.C.
Senior Airman Joshua Finkelstein,
28th OWS, Shaw AFB, S.C.
Senior Airman Jeffrey Gropp,
28th OWS, Shaw AFB, S.C.
Senior Airman Sara Hadlock,
28th OWS, Shaw AFB, S.C.
Senior Airman David Jones,
28th OWS, Shaw AFB, S.C.
Senior Airman Rachel Marshall,
28th OWS, Shaw AFB, S.C.
Senior Airman David Mills,
28th OWS, Shaw AFB, S.C.
Senior Airman Curtis Robison,
28th OWS, Shaw AFB, S.C.
Airman 1st Class Calvin Evans,
HQ AFWA, Offutt AFB, Neb.

ARMY ACHIEVEMENT MEDAL

Staff Sgt. Braulia Mora, 18th
WS, Fort Bragg, N.C.
Staff Sgt. Yaphet Rodriguez,
18th WS, Fort Bragg, N.C.
Senior Airman Lee Shipley,
Det. 2, 7th WS, Hanau, Germany

FLORIDA CROSS

Senior Master Sgt. Jon Carillon,
159th WF, Camp Blanding, Fla.

FLORIDA DISTINGUISHED SERVICE MEDAL

Master Sgt. Terry Upchurch,
159th WF, Camp Blanding, Fla.

FLORIDA COMMENDATION MEDAL

Senior Airman Daphne Violette,
159th WF, Camp Blanding, Fla.

FLORIDA MERITORIOUS SERVICE RIBBON

Lt. Col. Stephen Longobardi,
159th WF, Camp Blanding, Fla.
Maj. Christopher Vandersip,
159th WF, Camp Blanding, Fla.
Master Sgt. Nicholas Barnhardt,
159th WF, Camp Blanding, Fla.
Master Sgt. Carlos Delanuez,
159th WF, Camp Blanding, Fla.
Tech. Sgt. David Brown, 159th
WF, Camp Blanding, Fla.
Tech. Sgt. Michael Casey, 159th
WF, Camp Blanding, Fla.

Tech. Sgt. David Giddens, 159th
WF, Camp Blanding, Fla.
Staff Sgt. Rodney Menezes,
159th WF, Camp Blanding, Fla.
Senior Airman Tyson Everett,
159th WF, Camp Blanding, Fla.
Senior Airman Carlos Urrutia,
159th WF, Camp Blanding, Fla.
Senior Airman Robert Wert,
159th WF, Camp Blanding, Fla.
Senior Airman Alan Wilkerson,
159th WF, Camp Blanding, Fla.

AIR FORCE GROUND SAFETY AWARD

Mr. William Roeder, 45th WS,
Patrick AFB, Fla.

2005 NWA AVIATION METEOROLOGY AWARD

Technology Exploitation Branch,
HQ AFWA, Offutt AFB, Neb.

ARTHUR S. FLEMMING AWARD FOR OUTSTANDING CAREER CIVIL SERVICE IN THE FEDERAL GOVERN- MENT NOMINEES

Mr. Kyriakos Theophanous, HQ
AFWA, Offutt AFB, Neb.
(Administrative Category)
Maj. Paul Roelle, Det. 11, 7th
WS, Heidelberg, Germany
(Applied Science Category)

EDUCATION

AIRMAN LEADERSHIP SCHOOL

*Leadership Award Winner and
Distinguished Graduate*
Senior Airman Orlan Sollano,
HQ AFWA, Offutt AFB, Neb.

WEATHER FORECASTER APPRENTICE

Tech. Sgt. Carl Citrine, 15th
OWS, Scott AFB, Ill.
Tech. Sgt. Joseph Dailey, 11th
OWS, Elmendorf AFB, Alaska
Petty Officer 3rd Class Jason
Conklin, Naval Ice Center,
Washington, D.C.
Airman 1st Class Toni Bajkowski,
26th OWS, Barksdale AFB, La.
Airman 1st Class Andrew Bauer,
25th OWS, Davis-Monthan
AFB, Ariz.

Airman 1st Class Jeffery Belisle,
21st OWS, Sembach AB, Germany
Airman 1st Class Ryan Bergeron,
21st OWS, Sembach AB, Germany
Airman 1st Class Kyle Blair,
15th OWS, Scott AFB, Ill.
Airman 1st Class Deonta Brooks,
25th OWS, Davis-Monthan
AFB, Ariz.
Airman 1st Class Brent Callari,
25th OWS, Davis-Monthan
AFB, Ariz.
Airman 1st Class James Ellis,
21st OWS, Sembach AB,
Germany
Airman 1st Class John Fanning,
21st OWS, Sembach AB,
Germany
Airman 1st Class Nathan
Fenstermaker, 25th OWS, Davis-
Monthan AFB, Ariz.
Airman 1st Class Jarad Guerrero-
Salinas, 28th OWS, Shaw AFB, S.C.
Airman 1st Class Kyle Gustavson,
25th OWS, Davis-Monthan
AFB, Ariz.
Airman 1st Class Dustin Her,
25th OWS, Davis-Monthan
AFB, Ariz.
Airman 1st Class Clint Huff,
26th OWS, Barksdale AFB, La.
Airman 1st Class Jonathan Jones,
21st OWS, Sembach AB, Germany
Airman 1st Class Jonathan Meurer,
21st OWS, Sembach AB, Germany
Airman 1st Class Matthew Money,
26th OWS, Barksdale AFB, La.
Airman 1st Class Matthew Mullins,
15th OWS, Scott AFB, Ill.
Airman 1st Class Jessica-Nicole
Peterson, 25th OWS, Davis-
Monthan AFB, Ariz.
Airman 1st Class Michael Peterson,
21st OWS, Sembach AB, Germany
Airman 1st Class Jason Pierce,
26th OWS, Barksdale AFB, La.
Airman 1st Class Pollyanna Puckett,
21st OWS, Sembach AB, Germany
Airman 1st Class Travis Sanford,
25th OWS, Davis-Monthan
AFB, Ariz.
Airman 1st Class Matthew Sargent,
21st OWS, Sembach AB, Germany
Airman 1st Class Jay Semple,
25th OWS, Davis-Monthan
AFB, Ariz.

Airman 1st Class Jesse Sewelson,
26th OWS, Barksdale AFB, La.
Airman 1st Class Tiffani Sineath,
26th OWS, Barksdale AFB, La.
Airman 1st Class Jared Smith,
26th OWS, Barksdale AFB, La.
Airman 1st Class Brad Strong,
21st OWS, Sembach AB, Germany
Airman 1st Class Charles Sullivan,
28th OWS, Shaw AFB, S.C.
Airman 1st Class Eric Tidd,
28th OWS, Shaw AFB, S.C.
Airman 1st Class James Urban,
26th OWS, Barksdale AFB, La.
Airman 1st Class Michael Wendland,
25th OWS, Davis-Monthan
AFB, Ariz.
Airman Cara Carrothers, 26th
OWS, Barksdale AFB, La.
Airman Dustin Clarke, 25th
OWS, Davis-Monthan AFB, Ariz.
Airman Jere Gossert, 26th
OWS, Barksdale AFB, La.
Airman Andrew Johnson, 25th
OWS, Davis-Monthan AFB, Ariz.
Airman Ryan Kegler, 25th
OWS, Davis-Monthan AFB, Ariz.
Airman Matthew Omundson,
15th OWS, Scott AFB, Ill.
Airman Nathaniel Rohaly, 26th
OWS, Barksdale AFB, La.
Airman Roberto Romero, 26th
OWS, Barksdale AFB, La.
Airman Christopher Watts,
28th OWS, Shaw AFB, S.C.

JUMPMASTER COURSE

Capt. Cory Barack, 18th WS,
Fort Bragg, N.C.

BASIC AIRBORNE COURSE

Maj. Dave Coxwell, 18th WS,
Fort Bragg, N.C.
Senior Airman Jonathon Henderson,
18th WS, Fort Bragg, N.C.

LAND SURVIVAL SCHOOL

Capt. Cory Barack, 18th WS,
Fort Bragg, N.C.
Capt. Justin Palmer, 18th WS,
Fort Bragg, N.C.
Senior Airman Jonathon Henderson,
18th WS, Fort Bragg, N.C.

MASTER GUNNER' COURSE

Staff Sgt. Jefferson Helfrich,
18th WS, Fort Bragg, N.C.

