



YOUR MAGAZINE FOR AIR FORCE WEATHER

OBSERVER

Jul/Aug 01

Hurricanes and Typhoons
AFW tracks,
predicts,
protects

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On the Cover: A perspective view of Hurricane Fran, Sept. 4, 1996. Image courtesy of the Laboratory for Atmospheres, NASA Goddard Space Flight Center.

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OBSERVER

AIR FORCE DIRECTOR OF WEATHER
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Langley AFB, Va., firefighters used boats to evacuate more than 200 residents from base housing when Hurricane Floyd unloaded 15 inches of rain Sept. 16, 1999. Langley received the equivalent of four months rainfall in less than 24 hours causing a reservoir to overflow into base housing.

U.S. Air Force photo by Tech. Sgt. Jack Braden

HURRICANE SEASON

Every year more than 80 tropical storms will form around the world, and on average, about 45 of these storms will form hurricanes or typhoons. These storms may affect more than 70 million people living within potential tropical cyclone zones. The resulting storm surges, high winds, flooding and tornadoes can cause massive damage and loss of life. The annual loss of life can total in the hundreds, and damages may run into billions of dollars. Hurricane and Typhoon season is serious business, Air Force Weather's business.

Today, with protection of our military members, bases, and high-dollar assets at a premium, AFW forecasting plays a more vital role than ever before. Preparation for the tropical cyclone season is the best approach for decreasing the dramatic numbers that come about in damage and human loss. In recent decades, hurricane warnings have given people the extra time needed to put together supply kits, board up and secure houses, and

evacuate aircraft and people before the storm hits.

Still with all the warnings and improved forecasting, tropical storms are extremely unpredictable. The strength, size, and path of a storm are all liable to change within hours. Hurricanes can range greatly in size and intensity. The smallest hurricane to be recorded was the Tropical Cyclone Tracy, which hit Australia in 1974, with a diameter of just 30 miles. The largest, Typhoon Tip in 1979, grew to be 675 miles in diameter. Tropical cyclones can also intensify or weaken within a few hours causing storm surges and flooding to be more serious than early predictions.

Forecasting for tropical cyclones is improving every day, warnings are becoming more accurate, and correspondingly, damage and death are being averted. To read more about how AFW forecasters track and predict the path of these intense cyclones, turn to page 11.

(Introduction by Keely Burns, AFW PA assistant)

AETC
weather
operations:
Command
Director's
first year
reflections

By Lt. Col. Mike Hoofard
Air Education and Training
Command Director of Weather

With orders in hand, I headed off a year ago for a new assignment at Headquarters Air Education and Training Command weather staff. I had previously supported the old SAC heavies and the NORAD air defense mission; taught basic weather to navigator trainees; counted, repaired, and modified widgets at the Sacramento Air Logistic Center, Calif.; and pushed a lot of paper at the Air Force Weather Director and PACAF weather staffs. But what about operational weather support to the AETC flying training mission?

Sounded pretty simple and straightforward to me. In fact, I vaguely remembered support to an AETC Accelerated Copilot Enrichment detachment at my first duty station back in the mid-to-late 70s. The KC-135 copilots would fly T-38s to increase stick time, skills, and experience. We gave the detachment commander a verbal brief and flimsy Monday through Friday and sent them on their way. Hmm...do seem



to remember Fridays being a pain with those cross-country missions. After about three tries, the T-38 crew and forecaster would finally manage to separate out destinations from areas of low IFR conditions, icing, or thunderstorms. But, overall, I remembered it as a pretty simple mission; lots of flying around the flagpole and then the time consuming Friday exodus. Sight picture looks good—lock!

On my arrival at the AETC staff, I learned that the transition of the Command's weather flights to reengineered weather operations was in its infancy — only Maxwell AFB, Ala., had completed the transition. So what was the concept of operations for reengineered AETC weather flights? With the operational weather squadrons handling the airfield forecasts, watches, warnings, and the transient workload, what was left for the weather flights except a few local verbal and 175-1 briefs? After all, how much tailoring do you need for flying around a flagpole and going cross country?

One of my first newcomer appointments was a courtesy visit with the big boss, the AETC/DO. What was that he said—“AETC is the third largest Air Force in the world and Laughlin AFB, Texas, is the second busiest airfield in the Air Force”? Wow, are there really that many planes in the Command and is the

sortie rate that high? Wonder if I need to recheck that sight picture? Ok, a quick check of the Command's aircraft inventory shows the typical undergraduate flying training wing has 4 flying squadrons, 3 types of aircraft, and over 200 jets on the ramp (Laughlin at over 300 jets). Randolph has an instructor pilot and undergraduate navigator training wing, 7 flying squadrons, 6 types of aircraft, and 162 jets on the ramp. Then, there are the follow-on pilot training wings at Altus (C-5, C-17, C-141, KC-135), Little Rock (C-130), Tyndall (F-15), and Luke (F-16). Of these advanced schools, Luke takes the record with a total of 9 flying squadrons and 200 jets. Ok, ok...so there's a heavy briefing workload, but I bet it's pretty straightforward at the undergraduate training level with little tailoring required.

So how in the world do they get all those jets around the flagpole? Guess I better call the weather flight commanders and find out where all those undergraduate student pilots fly. “Well sir,” the flight commanders reply somewhat puzzled, “the students train in the same kind of places the rest of the Air Force flies...you know: military operating areas, low-level routes, etc. They fly all across the state and adjacent ones as well.” “Oh yeah, I knew that...and, uh let's see, per Reengineering 101, the weather flight puts out the specific execution forecasts based on available OWS guidance and mission tailoring requirements. Do ya'll get very involved in this tailoring business?” “Right sir, and if it will help, we'll send you a list of the critical weather thresholds we tailor for, based on student training restrictions and aircraft sensitivities.”

Oh boy, two publications and a six-page summary arrive for my enlightenment. Just using the T-38 as

See AETC, Page 26

Chief's Mentoring: Promotions mysteries revealed

**By Chief Master Sgt.
Penny Braverman**
AFW Chief Enlisted Manager

"How do I get promoted?" is one of the most frequent questions I am asked. We all know the basics required for promotion, but some people feel there is a hidden promotion process in the Air Force that the chiefs or colonels control. Well, you are right and wrong. In many ways there are controls on promotions, but most of this control is in your ballpark.

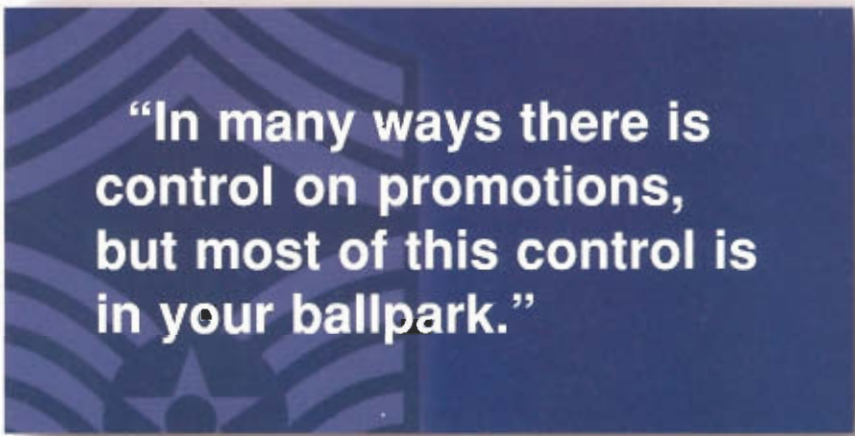
First and most importantly, you have the most control through testing and what you accomplish in your career. Let me expand this concept. I'll start with testing by asking a few basic questions: "Did you study? How did you study in reference to time and material? Are you covering the material for your test or getting more into it than needed?" These are just a few simple questions to ask yourself. If you follow the study code in the front of AFP 36-2241, Vol. 1, Promotion Fitness Exam, you will study the correct material at the correct level. As to study habits, well, I find most people's habits are set from their childhood school years. However, if you feel you have weak study habits, you can take courses on how to study for higher education from a local

high school, college, and sometimes the local education office.

The next area you have control over is your career. You are offered opportunities to attend Professional Military Education, and should attend all levels. Prior to attending, you may have an opportunity to complete the course by correspondence. Completing the course this way will prepare you to attend the in-residence course. If there is a selection process to attend the course early in residence, completion by correspondence will allow you an edge in the competition. There are no guarantees, but it shows initiative. Also along this line is civilian

on. No job is a dead end, and all positions are what you make of them.

Finally, your boss has control over your Enlisted Performance Reports and awards, which effect promotion scores. But you also have some input into this area. You usually provide inputs for the writing process, so you need to review the rated areas so you completely understand the information needed. An example that comes to mind is the awards program categories. When an award is written, you should have at least one item in each area – never leave an area blank. Be sure to provide the inputs for all the categories. The same concept works for EPRs. Your job informa-



"In many ways there is control on promotions, but most of this control is in your ballpark."

education. As a minimum, you should be progressing toward your Community College of the Air Force degree and then possibly a four-year degree from a college – degrees add to a stronger package when competing for awards or promotions.

You also need to consider your assignments – where you've been, current assignment, and where you plan to go next. You need to show breadth of experience, so you'll have to move occasionally. Make sure you get different operational and staff assignments with different size units. Spread your experience base out to include an Army unit, Joint assignment, Operational Weather Squadron job, Weather Flight job, NCOIC, MAJCOM or FOA position, and so

tion is important – be as specific as possible with all your accomplishments. Provide all awards won and any off duty involvement to show the whole person concept. Keep in mind, if this information is not provided, you are relying on your supervisor/boss to have a complete picture of your life at work and in the local community, and you must be willing to accept your anything written. Work with your supervisor and keep the communication lines open.

Hopefully, now you can see why you have or have not been promoted recently, or if you are looking for that first promotion, you are better prepared to work toward your goals. Your career is in your hands. Make it the best you can. ✨

U.S. CENTCOM METOC reaches out

U.S. Central Command weather staff supports missions and U.S. security interests

By Capt. Mark LaJoie and Michael Petrocco
USCENTCOM

U.S. Central Command, located at MacDill AFB, Fla., is the unified (joint) command responsible for U.S. security interests in a 25 nation, 6.5 million square mile region, stretching from the Horn of Africa through the Arabian Gulf Region and into Central Asia. It is one of the nine geographic or functional joint commands activated by direction of the Goldwater-Nichols Act.

USCENTCOM has a multi-faceted mission to support regional stability, ensure free market access to regional resources, support the Middle East peace process, and to counter the proliferation of weapons of mass destruction, drugs, terrorism and environmental damage.

The headquarters staff is comprised of more than 900 military personnel from each of the armed services. As a unified command, USCENTCOM is unique and distinct from all others on several fronts. First, as a unified headquarters, USCENTCOM is geographically separated from its Area of Responsibility; over 7,000 miles by air and about 8,600 miles by sea. Second, the command is a headquarters element only. No combat forces, aircraft, tanks or ships are assigned. Instead, five component commands – CENTAF, MARCENT, ARCENT, NAVCENT, and SOCCENT, provide USCENTCOM with warfighting support and engagement capability to

oversee ongoing operations such as OPERATION SOUTHERN WATCH, OPERATION DESERT SPRING, and maritime intercept operations. The components are task-organized under standing joint task forces and forces forward-deployed to the AOR. They play a vital role in enhancing the synergy required to achieve national and theater objectives. Due to the above challenges, USCENTCOM is the only command with a mission to deploy as a warfighting headquarters.

The senior METOC Officer, Lt. Col. Scott Funk, leads the USCENTCOM METOC staff. This position is a rotating tour between the Air Force and the Navy. The staff also includes Lt. Cmdr. Dave Whalen and Capt. Mark LaJoie and Mike Petrocco (Air Force). The team's duties are extremely diverse and they are expected to pull their weight not only as METOC specialists, but also as joint operations staff officers. The METOC staff supports the command on a broad spectrum of issues ranging from METOC to joint readiness and current operations. As HQ USCENTCOM METOC managers, we coordinate METOC support requirements with all the services, unified commands, strategic and regional weather concerns as well as the various component staff weather officers. We also develop and implement the CINC's METOC concept of operations by coordinating joint METOC doctrine, reviewing and drafting regulations and plans, and



validating Time Phased Force Deployment Data. As a collateral duty, we function as the command focal point for assessing the CINC's combat readiness posture through the Joint Monthly Readiness Review Process. We are required to also keep abreast of the status of all ongoing operations and serve as operations briefer for the CINC, DCINC and visiting dignitaries. METOC staff officers serve on the crisis action team in the roles of team chief, executive officer and information operations in addition to providing METOC support. One officer regularly performs operations center duties, serving as USCINCCENT's senior representative in CJCS emergency action conferences, interfacing with the National Military Command Center and monitoring all U.S. and allied operations in the AOR.

Serving at USCENTCOM requires far more than simple weather expertise. It's about knowing and understanding every aspect of operations – from combat readiness to air, ground and naval operations. HQ USCENTCOM is a challenging but satisfying assignment offering a unique perspective on current and joint operations. ♣

3-D motion graphics enhance AFN's Weather Broadcasts

By Paige Rowland

Air Force Weather Agency
Public Affairs Director

American Forces Network viewers in the Pacific Region began seeing graphically enhanced forecasts on the network's "Weather Update" shows June 12.

Three-dimensional motion graphics and animated icons are some of the big changes for the new shows, aimed at bringing a "touch of home" to service members, government civilians and their families stationed in more than 170 countries around the world.

"The latest changes are really equal to what you would see on a major network," said Melvin Russell, director, American Forces Radio and Television Service.

"We pride ourselves in providing the same entertainment, news and sports you would get in the states, and weather is part of that 'touch of home' we provide," said Russell.

Viewers will also notice the Air Force Weather Agency shield more prominently displayed throughout the shows, giving AFWA a greater visual presence in the revised show format.

Prior to 1998, regional and local weather reports were non-existent at all but a very few of the largest AFN outlets in countries where American troops and their families were deployed. This changed when AFRTS partnered with the Air Force Weather Agency, Offutt AFB, Neb., in early 1998 and created the American Forces Network Weather Center in AFWA.

"We want viewers to know we're military weather forecasters providing them with the most accurate weather information available in the military," said Staff Sgt. Darrin Hughes, AFNWC producer and forecaster. "We're proud of our contributions to AFRTS and their quality of life initiatives," said Hughes.

The new show format follows a number of significant technical upgrades made to the AFNWC by AFRTS. The studio improvements allow the forecaster to spend more time on the meteorology behind the forecast while still being able to produce a graphically appealing product.



Photo by Tech. Sgt. Miles Brown

Staff Sgt. Julie Clark, AFN Weather broadcaster, records the voice-over for a show with the new 3-D motion graphics.

Enhancing the quality of the weather segments is an ongoing effort by AFRTS and AFWA that progresses with the technology available. In the near future, producers hope to get the weather shows on the web. "The streaming technology is not quite what it needs to be," said Russell, "but we are moving there very quickly."

The two-minute "Weather Update" shows are in addition to "Extended Forecast" and "AMC Space-A" forecast shows that AFWA produces daily. These weather shows air throughout the day on all AFRTS television services. They make up 10 percent of the original broadcast content that AFRTS intersperses with stateside news, sports and entertainment programming on the network, and have become an indispensable part of AFN programming.

"It's great to have the AFWA weather professionals working with our broadcast professionals. The show really takes a combined effort to make it a success," said Russell.

The Atlantic and Europe "Weather Updates" transitioned to the new show format in August. ♡

AFW Professional Reading List hits streets

By Tech. Sgt. Miles Brown
Air Force Weather Public Affairs

The Director of Air Force Weather, Brig. Gen. David L. Johnson, presented the first AFW Professional Reading List June 19 at the Offutt AFB, Neb., base library.

The reading list was developed much like the Air Force Chief of Staff's Professional Reading Program for Air Force members. The Chief's readings are designed to stimulate thinking and promote the professional growth of Air Force Professionals.

"I am pleased to present our first AFW Professional Reading List to further enhance AFW personnel professional development," states General Johnson in a letter designating the reading list.

The 26-publication list contains operational, technical and literary works ranging from entry level to advanced level readings. This list is not all-inclusive, and the Director expects the list to evolve and grow in the years ahead.

An updated list may be found on the AFWA homepage. The AFW History office, DSN 272-8682, is also ready to assist unit libraries to acquire any or all the publications found on the list. ✪



Photo by Airman 1st Class Charles Haymond

Brig. Gen. David L. Johnson, Air Force director of weather, presents the first AFW Professional Reading List June 19 at the Offutt AFB, Neb., base library.

Air Force Weather Professional Reading List

Entry Level Readings:

- 1) *"The Weathermen Let Them Fly"* by Ewing Franklin Brown (ISBN No. 0-9640988-0-6)
- 2) *"Clouds in a Glass of Beer"* (Simple Experiments in Atmospheric Physics) by Craig F. Bohren (ISBN No. 0-4716248-2-9)
- 3) *"Isaac's Storm"* by Erik Larson (ISBN No. 0-375-70827-8)
- 4) Air Force Weather (A Brief History, 1937-2000) AFWA/HO Pamphlet
- 5) Air Weather Service in SE Asia 1961-1976 (Air Weather Service History Office Pictorial Account)
- 6) Air Weather Service: Our Heritage, 1937-1987
- 7) Air Weather Service, 1937-1977, An Illustrated Chronology
- 8) Weather and War, Office of MAC History (December 1974)
- 9) Leadership: A Treatise for AWS Commanders (A Project Warrior reprint - 1955)

Intermediate Level Readings

- 10) *"Thor's Legions"* by John Fuller (ISBN No. 0-933876-88-2)
- 11) *"America's Weather Warriors 1814-1985"* by Charles Bates & John Fuller (ISBN No. 0-89096-240-5)
- 12) *"Getting the Message Through"* by Rebecca Robbins Raines (ISBN No. 0-16-045351-8)
- 13) *"The Raid"* by Benjamin F. Schemmer (ISBN No. 0-06-013802-5)
- 14) *"Military Geography" (How Geography, Weather & Other Factors Effect Outcome)* by John M. Collins (ISBN No. 1-5790600-2-1)
- 15) *"Forecast for Overlord"* by J.M. Stagg (ISBN No. 0-7110025-1-7 also 0-3930533-5-6)
- 16) *"Typhoon: The Other Enemy"* by Capt. (ret) C. Raymond Calhoun (Naval Institute Press) (ISBN No. 0-8702151-0-8)
- 17) *"Flying the Weather, The Story of Air Weather Reconnaissance"* by Otha C. Spencer (ISBN No. 0-9653600-9-1)
- 18) *"Every Man A Tiger"* by Tom Clancy with (Gen) Chuck Horner (ISBN No. 0425172929)
- 19) *"Batting The Elements"* by Harold A. Winters with Gerald E. Galloway, Jr., William J. Reynolds and David W. Rhyne (ISBN No. 0-8018-5650-X)
- 20) *"Mission Accomplished" The Air Weather Service during Desert Shield/Desert Storm* by Dr. William Nawyn (Air Weather Service History Office Special Study)
- 21) *Air Weather Service and Meteorological Satellites, 1950-1960* (Air Weather Service Historical Study No. 5)
- 22) *Air Weather Support to the United States Army - Tet and the Decade After* (AWS Historical Study No. 8)
- 23) *Some Meteorological Aspects of the D-Day Invasion of Europe, 6 June 1944* (Proceedings of a Symposium, May 19, 1984, Fort Ord, CA, published by AMS)
- 24) U.S. Department of Defense, *Rescue Mission Report*, Washington, D.C. (The Department, Aug. 23, 1980) The unclassified version of the Iranian rescue mission report, also referred to as the Holloway Report.

Advanced Level Readings

- 25) *Weather Effect on Army Operations (Weather in WWII)*, Vol. I, July 16, 1952 to Sept. 15, 1956 (Unable to locate an ISBN No.)
- 26) *Weather Effect on Army Operations (Weather in WWII)*, Vol. II, July 15, 1954 to Sept. 15, 1956 (Pacific Theater) (Unable to locate an ISBN No.)

AFWA volunteers fill big



Team AFWA members join celebrities, corporate sponsors and golfers to raise money for Cystic Fibrosis

By Tech. Sgt. Miles Brown
Air Force Weather Agency
Public Affairs

When is the last time you took a day of leave to volunteer all day outside in the heat to help battle the leading genetic killer of children in the world?

That is just what more than 20 volunteers from the Air Force Weather Agency did June 25 to help raise money for the Cystic Fibrosis Foundation during the 2001 Boomer Esiason Foundation Nebraska Golf Classic at the Quarry Oaks golf course just south of Omaha.

The golf event, along with the charity auction the night before, raised more than \$250,000 for the foundation.

"We have to make sure these

contributors are treated right and the event is run professionally. The volunteers work hard to make sure everything is done right, from start to finish," said Jeff Hatfield, the event coordinator and father of two boys with CF.

Hatfield added that the event could not be this successful without the tireless efforts of the handful of volunteers working the course.

The volunteers made sure the 260 golfers from around the Midwest were treated well during their round of golf. They provided cold drinks, snacks, hole spotters and anything else required to make the day run smooth and ensure everyone had the best time possible.

The AFWA volunteers, headed by Bonnie Kristensen, chose to give their time instead of making a

monetary contribution to the fight against this deadly disease.

"For me, it's a very personal thing. I lost a dear friend to CF," said Kristensen. "For everyone that volunteered, this was an opportunity to help with the fight to find a cure for this deadly child and young adulthood disease. Even though our people didn't give money, they donated their time, which can be even more valuable."

This is the fourth year the event has featured Boomer Esiason, the NFL's most prolific left-handed quarterback and father of a child with CF, and the event has grown every year.

"I am so glad to see all the sponsors, participants and volunteers come out not just to see the celebrities, but because they want to be here



Bonnie Kristensen talks with Boomer Esiason on the 8th tee box during the 2001 Boomer Esiason Foundation Nebraska Golf Classic June 25. More than 20 AFWA volunteers worked the tournament which raised more than \$250,000 for the fight against Cystic Fibrosis.

Photo by Tech. Sgt. Miles Brown

Volunteers continued

and help make a difference,” said Boomer.

“If we can raise more than a quarter of a million dollars here in the Midwest, we must be doing something right, because that’s a lot of money.”

Cystic fibrosis is a genetic disease that affects the glands that produce secretions, specifically, the lungs and digestive tract. Over time, the lungs and digestive tract clog and bacteria grow which destroy the lung tissue, ultimately leading to death.

All the proceeds from this event go to the foundation’s Therapeutics Development Program, expediting the process that brings new cystic fibrosis drugs to market for the tens of thousands of young people stricken with this devastating illness. ♡



Photo by Tech. Sgt. Miles Brown

Jennifer Gibson and Derrick Sochor, AFWA volunteers, assist the golfers with sports drinks and snacks during the 2001 BEF Golf Classic.



Cartoon by Tech. Sgt. Lou Pell

Hurricane Hunters look back on busy year/forward to new aircraft

By Maj. John Gordon and Val Hendry
53rd Weather Reconnaissance Squadron
Keesler AFB, Miss.

"Another busy, productive year for the 53rd Weather Reconnaissance Squadron," remarked National Hurricane Center director Max Mayfield. Indeed, the 2000 Atlantic hurricane season was above average, with eight hurricanes, seven tropical storms, and four tropical depressions. Since no hurricanes struck the US this year, it may have seemed like a "quiet" year to most folks, but our ten aircraft still flew 80 missions, totaling 918 hours, to monitor the most threatening storms.

Data collected by the Hurricane Hunters improves the forecasts of Tropical Cyclones by about 25 percent, and sometimes the squadron makes a more dramatic impact.

On Sep. 11, NHC Hurricane Specialist Dr. James Franklin wrote in his 5 p.m. discussion, "We are reminded once again that there is no substitute for aircraft reconnaissance observations. While the Dvorak Satellite Technique estimated an intensity of 35 knots, the recon found a large area of winds at the 1000 ft level in excess of 60 knots, and even a small area of winds in excess of 75 knots on the edge of the convection." This disturbed weather band quickly escalated to Tropical Storm Florence, and was upgraded the following day to hurricane.

Hawaii bound in July! One of the fringe benefits of working with tropical storms is staging from the tropics. We quickly moved several aircraft and a team of aircrews and maintainers to monitor Hurricane Daniel for the Central Pacific Hurricane Center. Hurricane Daniel strengthened to a 125-mph storm as it approached Hawaii, but its strong winds and rain fortunately remained offshore as it gradually weakened and passed just to the north of the islands. We flew a total of six missions on this storm.

The year began and ended with our lesser-known job of flying winter storms, in support of the National Center for Environmental Prediction. The beginning of the year found our crews in Hawaii, flying ahead of winter storms in the Pacific. At year's end, the squadron flew several missions ahead of an incipient Nor'easter; the resulting winter weather warnings "saved" New Year's Eve in New



Photo courtesy of the 53rd WRS
Sunset over the Gulf of Mexico, as seen from the Hurricane Hunters WC-130H during the ride home from Hurricane Gert to Keesler AFB, Miss.

York, as the city mobilized to clear a paralyzing blanket of snow just in time for 500,000 revelers to pack Times Square. Critical data, such as pressure, winds, temperature, and dew point were gathered both horizontally and vertically to help initialize the 12Z and 00Z model runs for NCEP. The array of dropsondes pinned down the conditions for intensification.

Throughout 2000, the WC-130J model test program continued in earnest. The Hurricane Hunters received some of the first J-model Herks in the Air Force. Over the next few years, the J model aircraft are programmed to replace the H-model C-130, joining a legacy of Hercules aircraft that have been the stalwart of the Hurricane Hunters since the mid 1960s. These J-models can reach the 250-mb level, perfect for winter storms and synoptic flow missions.

Last year also saw the release of the hit movie "The Perfect Storm". The plane depicted in the film utilized movie computer imagery and actors. In reality, our crews flew several missions into Hurricane Grace in 1991. A few days later, near Newfoundland, we rejoined the remnants of the storm, later immortalized as "The Perfect Storm".

TYPHOONS BEWARE:

The Joint Typhoon Warning Center is Watching You

By Capt. Chris Cantrell
17OWS/Joint Typhoon Warning Center, Hickam AFB, Hawaii

Three destroyers capsized, seven other ships seriously damaged, 146 aircraft blown overboard or jettisoned, and 778 men lost. On Dec. 18, 1944, Typhoon Cobra's estimated 100-knot winds unexpectedly decimated Admiral Halsey's Task Force 38 as it rendezvoused in the Eastern Philippine Sea to conduct a refueling operation. Just a day prior, weather conditions in the operating area did not raise suspicion that something was brewing; and Fleet Weather Center at Pearl Harbor, Hawaii, gave no indication of a looming storm.

Routine weather observations at that time consisted of land-based station reports by Radio Kwajalein and Radio Manus, 12-hour-old

weather reports from aircraft operating out of the Marianas, Ulirhi and Palau; and six hourly analyses and two daily forecast broadcasts to the fleet by FWC. Despite all of this, no one was able to give Task Force 38 warning of the approaching typhoon. Tiny Typhoon Cobra had slipped past the observing eyes of ship weathermen, land-based weather stations, and aircraft reconnaissance.

From 1945 to 1958, the Typhoon Tracking Center on Guam was one of two Air Force and three Navy units responsible for tropical cyclone reconnaissance and warning in the Pacific. In the fall of 1959, the Commander-in-Chief, Pacific Forces successfully petitioned and gained approval from the Joint Chiefs of Staff to establish a joint Air Force/Navy typhoon warning center. CINCPAC directed the formation of

the Joint Typhoon Warning Center on May 1, 1959, and 27 days later, FWC/JTWC issued the first tropical depression warning from a Quonset hut on Nimitz Hill, Guam.

The JTWC was initially chartered to provide warnings to affected U.S. government agencies on all TCs in the western North Pacific west of 180 degrees longitude, determine typhoon reconnaissance requirements and priorities, prepare annual typhoon summaries, and conduct TC forecast and detection research as practicable. Two officers and three enlisted personnel from each Service prepared those first warnings, issued four times daily out to 48 hours. Since that time, JTWC's mission remains largely unchanged, however, the area of responsibility has expanded dramatically to include the entire Pacific and Indian Ocean basins.

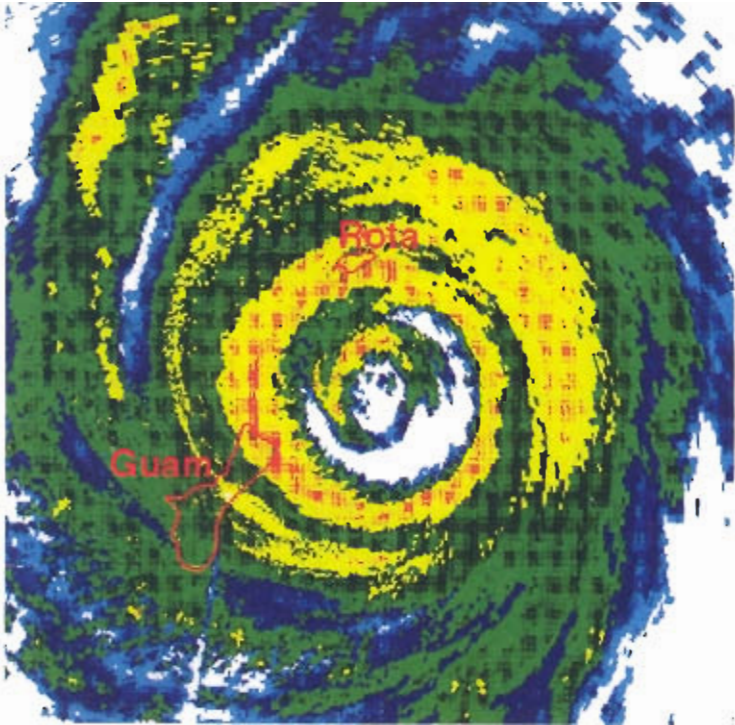
Prior to 1987, JTWC depended on aircraft reconnaissance as well as satellites to monitor TCs. Due to budgetary considerations, the last aircraft reconnaissance flights in the western North Pacific ceased after Oct. 1, 1987. Since that time, satellites have been the primary tools to reconnoiter the 110 million square miles in JTWC's area of responsibility.

Today, JTWC relies on a variety of platforms to metwatch and perform position and intensity analyses of tropical cyclones. These include geostationary satellites owned by the U.S., Japanese, and Europeans; polar orbiting satellites owned by the DoD, NOAA, and NASA; and the equator-



Photo by Scott Dommin

Scott Dommin takes his last photo of dying Typhoon Forrest that hit the west Pacific Ocean in September, 1983. Shown here is the right side of the eye wall.



Radar image of Super Typhoon Paka just northeast of Guam Dec. 16, 1997.

rial orbiting Tropical Rainfall Measuring Mission satellite owned by NASA.

The complex process of forecasting TCs begins with the JTWC satellite analyst, using data from the various satellite platforms to determine the most accurate position and intensity estimate possible. This can be a challenging task when a TC is in its initial formation stage. The first significant storm of the 2001 western North Pacific season, Tropical Storm 03W (Gimaron), presented the satellite analysts with such a challenge.

"The system was very disorganized and hard to find in infrared imagery as it was developing in the Philippine Sea just east of Mindanao," said Staff Sgt. Ralph Parker. "It is important to use all your available resources. In this case, microwave imagery from the TRMM satellite was able to see through the obscuring cirrus, allowing me to see the low level cloud lines and identify the center of circulation."

Accurate satellite fixes also provide critical TC information to numerical weather prediction models. JTWC

conducts four position and intensity estimates a day that provide numerous NWP models with estimates of TC position, intensity, and size, called a "bogus." The more accurate the satellite fix, the more accurate the model bogus will be. In turn, the more accurate bogus leads to better model forecasts.

The introduction of a bogus into NWP models has drastically reduced the forecast track error of models over the past decade. Increased

computer power, which allows higher resolution models to be run, has also contributed to more accurate TC track prediction.

Once the METSAT analyst determines TC position and intensity, the Typhoon Duty Officer is ready to begin the process of evaluating model data and issuing the warning. This highly detailed process takes more than two hours from start to finish. The TDO uses a newly developed software program called the Systematic Approach Forecast Aid to evaluate NWP models. SAFA is a computer-based, TC forecast expert system designed to systematically identify dynamic model errors and produce tropical cyclone forecasts. These forecasts are developed following a computer-based process, which includes a thorough interrogation of numerical model fields and development of a Numerical Consensus tropical cyclone track prediction. The NCON track prediction blends all available dynamic model guidance using a simple ensemble blend to produce a single tropical cyclone track. These NCON predictions are used to guide the production of the

JTWC official tropical cyclone track forecast. The SAFA process uses a simple algorithm to compare the dynamic model TC track predictions in an effort to identify potentially erroneous predictions. Once these errors are identified, a thorough review of the associated model fields is conducted. This review is used to identify possible systematic model errors that may contaminate the dynamic model prediction presented by one or more of the dynamic models used in the NCON ensemble. Once systematic model errors are identified, the tropical cyclone forecaster dismisses the erroneous model predictions and creates a Selected Numerical Consensus to guide production of the official forecast.

Once the NWP models have been evaluated for accuracy and the final track has been determined, the TDO produces a 72-hour forecast that includes positions, intensities, and wind radii. In addition to SAFA, the TDO has another Unix-based program called the Automated Tropical Cyclone Forecasting system. This system assists in tracking the storm, running numerous climatological and statistical forecast aids and creating warning text messages and graphics. The TDO has a very demanding job as the warning process is repeated every six hours for all storms greater than 25 knots in the western North Pacific, and greater than 35 knots in all other areas of the AOR. Regardless of the number of storms being warned on at any given time, the TDO still must issue warnings for each storm within the two and a half hour warning window. Last year alone, JTWC issued approximately 1500 warnings on 85 tropical cyclones.

The major challenge JTWC faces today is forecasting TC intensity.

See Typhoon, Page 30

Models, Models everywhere ...literally

The AFWA Applied technology division predicts tropical storm development in 85 percent of the world's tropical zones

By Capt. Scott Hausman
Chief, Meteorological Models Branch
Air Force Weather Agency

Mention Homestead AFB, Fla., and we unavoidably recall memories of Hurricane Andrew and the unthinkable destruction it caused. While we obviously cannot prevent hurricanes, we certainly can protect AF personnel and mitigate impacts to resources from such destruction by accurately tracking these deadly tropical cyclones.

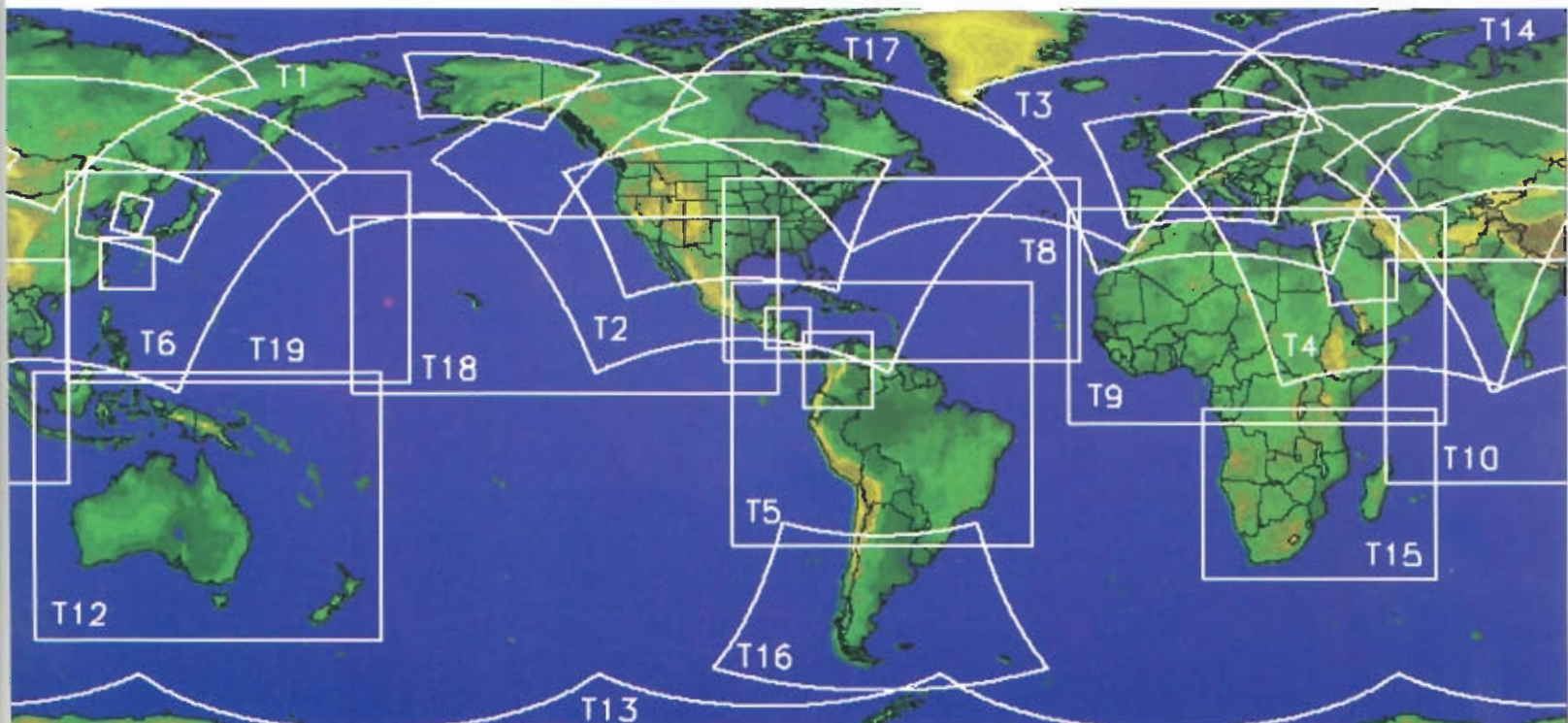
Hurricane tracking is, in part, the mission of the Applied Technology Division, DNX, at HQ Air Force Weather Agency, Offutt AFB, Neb. DNX transitions technology from the research and development community into Air Force Weather operations. It is composed of the Meteorological Models Branch, DNXM, which is responsible for all AFW analysis and forecast models; and the Technology Exploitation Branch, DNXT, which leverages cutting-edge technologies for weather operations and creates the model visualizations found on the Joint

Air Force and Army Weather Information Network.

To predict tropical storm development, the Fine Scale Models team of DNXM uses the Mesoscale Model 5 at 45-kilometer resolution to generate forecasts over nine theaters, which cover 85 percent of the tropics. These forecasts extend to 72 hours and are produced twice daily.

Inside three of the MM5 theaters are smaller regions, or nests, with 15-kilometer resolution. One of these nests is fixed and supports missions over South America, while the other two nests are relocatable and are used to forecast tropical cyclones over the Western Pacific and Atlantic Oceans. The Meteorological Satellite Applications Branch, XOGM, monitors tropical storm activity and places the relocatable nests accordingly.

When a tropical cyclone warning is issued, XOGM tracks the position and intensity of the storm using a program called *Tracker*, which DNXM developed. *Tracker* detects the storm center in the MM5 forecasts by locating the minimum sea-level pressure. It then generates a bulletin listing the latitude, longitude, maximum surface wind speeds, and minimum sea-level pressure at six-hour intervals out to 72 hours. This bulletin is sent to the Typhoon Duty Officer at the Joint Typhoon Warning Center, Pearl Harbor Naval Base, Hawaii, and to the



The current global MM5 window configuration, as of May 29, 2001.

Hurricane Prediction Center, Miami, Fla.

Both JTWC and HPC produce a consensus track forecast by comparing MM5 and other model track forecasts from the Navy, and from the U.S. and Japanese National Weather Services. According to statistics collected by JTWC, the tracks predicted by MM5 are comparable to those from the other services.

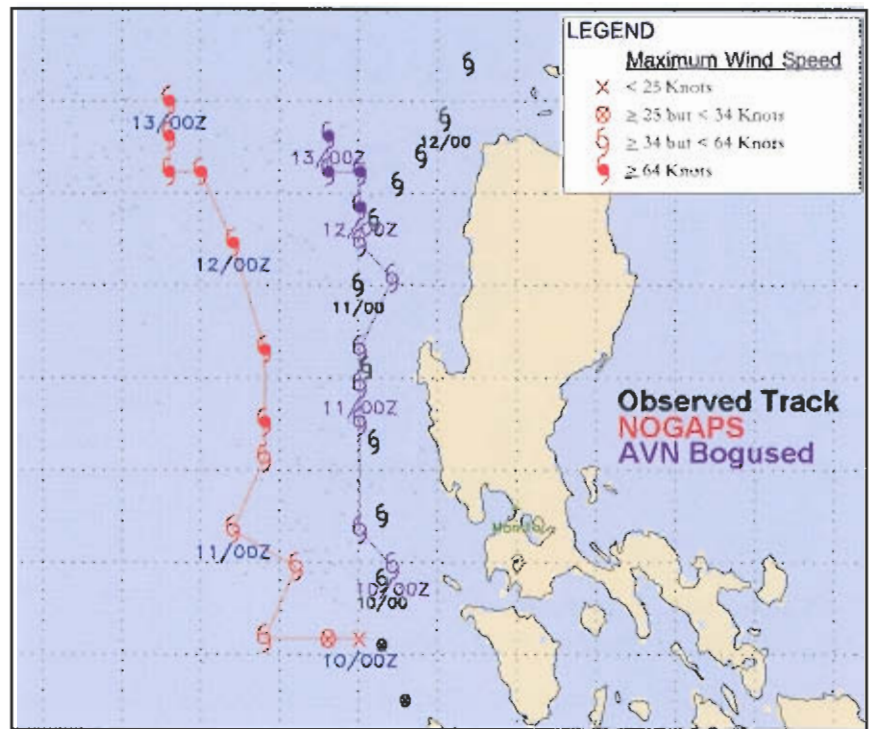
To produce the best possible track forecasts, DNXM is continuously pursuing the latest modeling techniques. For example, forecast models often fail to generate observed tropical storms. To overcome this failure, the storm is often inserted, or “bogused”, into the model’s initial condition.

In the past, DNXM used the Navy Operational Global Atmospheric Prediction System initial forecast to initialize MM5, because it contained bogused storms. With the assistance of the National Center for Atmospheric Research, the FSM team has recently incorporated a bogusing scheme into MM5. With this new capability, tropical storms are more accurately initialized and the dependence on NOGAPS alone for initialization is eliminated.

The bogusing scheme has dramatically improved the track forecasts produced by MM5. The image at the top of the page shows the observed track of Tropical Depression Three in the Western Pacific just west of Luzon in the Philippines. This observed track is compared to the forecast tracks produced by MM5 when NOGAPS and AVN with bogusing are used for initialization. The forecast with bogusing is nearly identical to the observed track. According to Dr. Scott Applequist, who has been testing the bogusing scheme, the method has consistently improved the track forecasts, especially for weaker storms.

Ultimately, the MM5 tropical storm forecasts are useless if not presented in a form useful to the field forecaster. DNXT visualizes the MM5 forecasts using Vis5D and GrADS – located on JAAWIN.

Look for more improvements to MM5 and its output in the near future. Currently, DNXM is investigating improved tropical storm bogusing schemes being developed by Florida State University and the Cooperative Institute for Research in the Atmosphere using a 4-dimensional variational data assimilation scheme, termed “4D-VAR”. This effort is part of a larger program to incorporate a greater variety of weather observations into



This image shows the observed track of Tropical Depression Three in the Western Pacific just west of Luzon in the Philippines. This observed track is compared to the forecast tracks produced by MM5 when NOGAPS and AVN (with bogusing) are used for initialization. The forecast with bogusing is nearly identical to the observed track.

the models, much like other operational centers (NCEP, UKMO, ECMWF, JMA). Maj. Ed Bensman, Chief of the Applied Technology Division, stated “...this 4D-VAR scheme will allow us to use the fire hose of information that will flood this agency over the next 10 years as new satellite sensors aboard the NPOESS and next generation GOES satellites come onboard. Smartly managing this flow of information is the key. These new satellite data will be as revolutionary to Numerical Weather Prediction as the rawinsonde was when it was first introduced into global analyses.”

Also, to further improve the track and intensity forecasts by better simulating the interactions between the storm and sea, DNXM is working with the Environmental Technology Lab to couple MM5 with the Princeton Ocean Model.

Eventually, DNXM plans to use a moveable nest to follow the tropical storm and forecast its fine-scale structure. This will eliminate our dependence on large, fixed 15-kilometer nests, allowing the nests to move with the storm. DNXT is also investigating the latest visualization techniques to improve the utility of the MM5 tropical storm forecasts.

The models team continues to leverage technology, improve products, and form partnerships to track and predict tropical storm paths. With our help, AFW units around the world can give the warnings that save lives. ♪

Eyes on the “EYE”s

U.S. Southern Command weather team focuses on hurricane preparedness, keeping command leaders ahead of catastrophic tropical storms

By Tech. Sgt. Lee Roberts

U.S. Southern Command Public Affairs

In recent years, Hurricanes Mitch, Georges and Keith left trails of death and destruction throughout Latin America. In the path of Hurricane Mitch in 1998, a category-five storm, entire towns were washed away and more than 11,000 people lost their lives in Honduras, Nicaragua, El Salvador and Guatemala. The U.S. Southern Command in Miami, a unified command responsible for all U.S. military activities in the Caribbean, Central and South America, aided these nations through humanitarian relief efforts, providing supplies, medical support and transportation.

Behind the scenes, the command's weather forecasters kept commanders abreast of the storm's movement and forecast track – vital to planning evacuation timelines, evaluating potential deployment locations and determining safe pre-positioning of relief forces near the storm's greatest impact area. Without these timely and accurate forecasts, the storm's impact would have been even more catastrophic and U.S. relief efforts hindered.

Each year, SOUTHCOM's Meteorology and Oceanography Branch works closely with the National Hurricane Center in Miami, the 53rd Weather Reconnaissance Squadron at Keesler AFB, Miss., and other meteorologists throughout South Florida, Central and South America, and the Caribbean to advise military commanders throughout the region and to provide accurate weather forecasts so communities have time to prepare for approaching storms.

According to Air Force Capt. Deeann Emery, SOUTHCOM staff meteorologist, forecasting hurricane storm tracks in the command's area of responsibility is an important mission because of the unpredictability and destructive nature of hurricanes.

“Each major hurricane that strikes is a tragedy,” Emery explained. “However, with timely information and preparation, the command is able to forecast where a storm will hit, be there to provide assistance, and help the host nation get through the disaster.”

Emery noted that SOUTHCOM also coordinates with the Meteorology and Oceanography officers attached to the command's subordinate Air Force and Navy command weather centers, the 25th Operational Weather Squadron at Davis-Monthan AFB, Ariz., and the Naval Atlantic Meteorology and Oceanographic Center at Norfolk, Va. These weather units provide additional forecasts for winds, rainfall totals and other hazards associated with storms that may affect specific areas and countries within SOUTHCOM's area of responsibility.

At the headquarters in Miami, the Meteorology and Oceanography Branch takes precautions to protect the people and facilities when a storm threatens south Florida. The staff maintains a website and a Community Hotline where SOUTHCOM members and their families can get the latest weather forecast and important hurricane preparation information. The website contains details on what to put into a hurricane survival kit,

See SOUTHCOM, Page 30

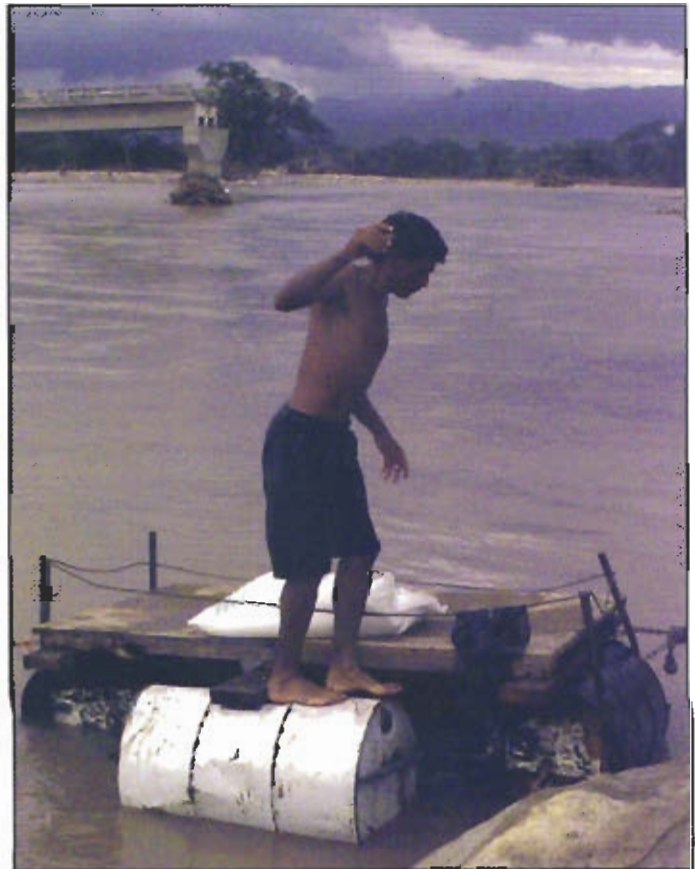


Photo by Staff Sgt. Jeff Troth

A Honduran loads a bag of food onto a makeshift ferry to cross Rio Humuya, which doubled its size during Hurricane Mitch. The widened river knocked out a bridge stranding 2,000 families from the city of Comayagua.

Just another typhoon season in Japan

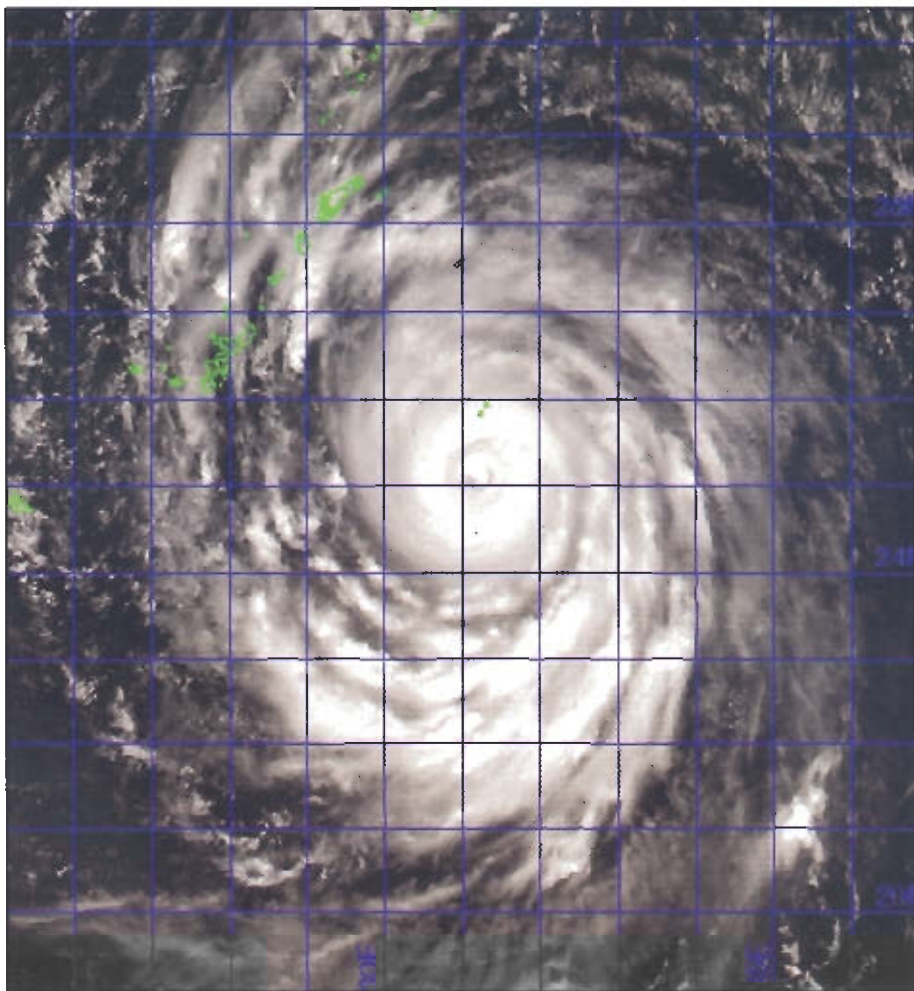
By A1C Robin Bedford

18th Weather Flight, Kadena AB, Japan

As members of the weather career field, we may sometimes forget how much of an impact our observations and forecasts can have on the daily lives of those in our community. We, at the 18th WF, Kadena AB, Japan, are reminded of this fact every year from the beginning of June through the end of November, also known as “typhoon season.” This past season, observers and forecasters tracked thirty systems in the Pacific. Of the thirty storms, eight were tropical depressions, twelve were tropical storms, seven were typhoons, and one was a super typhoon. Eleven of these systems affected operations at a high level on Kadena. Typhoon Jelawat and Super Typhoon Saomai were the worst of the storms threatening our island.

Typhoon Jelawat made its way to Okinawa in early August, packing winds of 100 knots with gusts to 125 knots. Forecasters at Kadena AB predicted that the storm would strike Okinawa approximately three nautical miles north of Kadena AB at around 3 a.m. Staff Sgt. Rodney Jacobs, the duty forecaster during Typhoon Jelawat, recalls the storm actually hitting the northern part of Okinawa, about 20 miles north of the base, in the early a.m. Because of accurate forecasting, the base successfully evacuated 20 aircraft, closed schools, and ensured wing safety with a mandatory lock-down.

“The priority for the weather flight during a typhoon is to do its part to ensure flight safety and resource protection,” according to



GMS-5 visible image of Super Typhoon Saomai, Sept. 11, 2000, just southeast of the island of Okinawa, Japan. The storm's winds reached 140 knots with gusts to 170 knots.

Staff Sgt. Andre Williams, weather forecaster.

The observer's primary responsibilities during a typhoon include observing and reporting current conditions; updating the public with current information via television, phone recordings, and internet; and answering some of the many phone calls we receive during adverse conditions.

After Jelawat shut down operations for two days, Civil Engineering assessed damages before allowing Kadena residents onto the streets. Mike Culver, deputy commander of the 18th Civil Engineer Squadron, said that the landscaping received the most damage on base.

“We had tree limbs fall and a

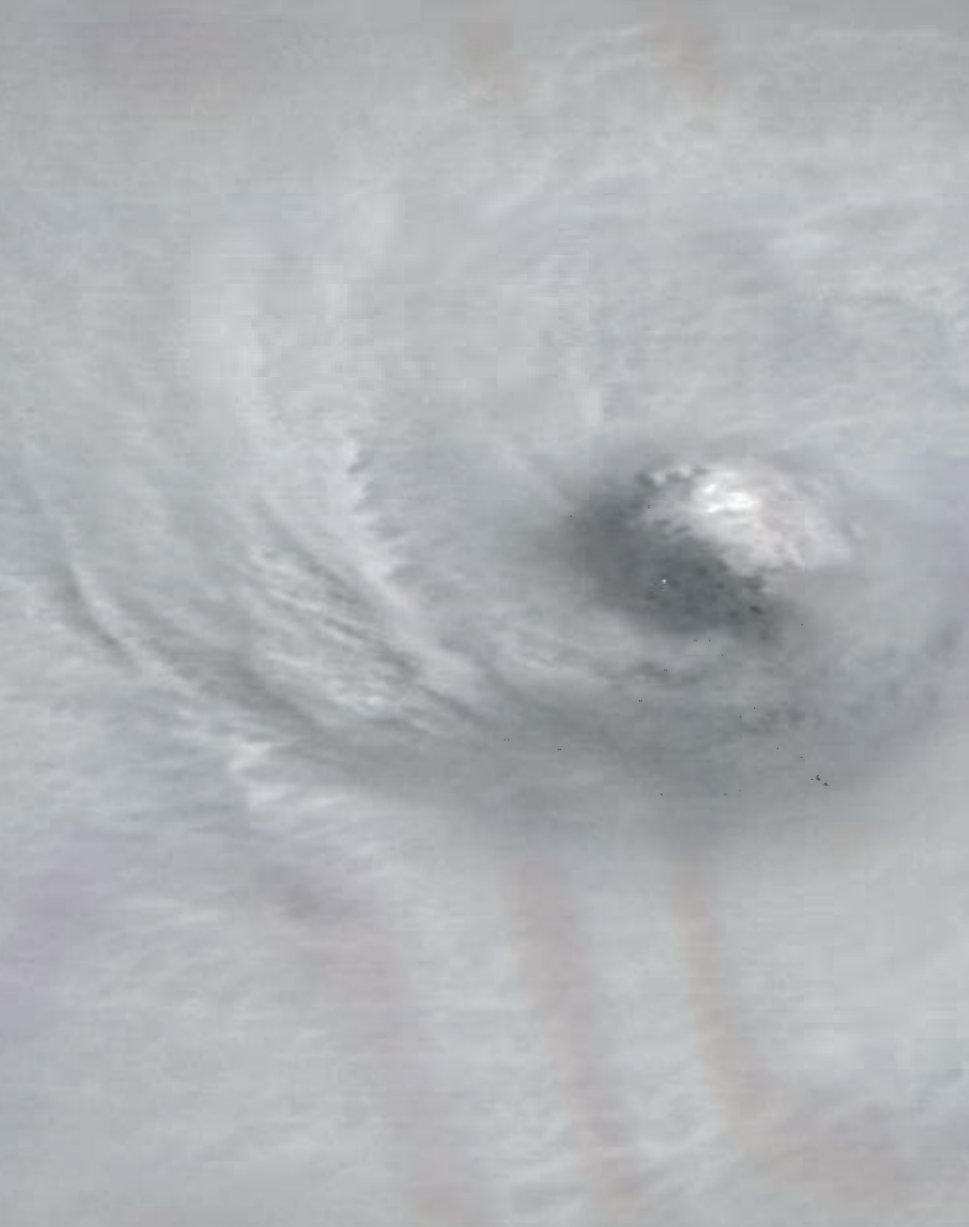
couple of trees toppled,” he said.

Only one U.S. military housing area reported a power outage, as opposed to more than 19,000 homes without power off base. There were no other reports of damage on Kadena thanks to ample warning time given for the high winds.

“It just amazes me how well this base is built to withstand typhoon force winds,” remarked Master Sgt. Ronald Keene, Chief of 18th Weather Station Operations. “We had typhoon force winds for more than 12 hours with not so much as a power fluctuation or loss of phone lines in most areas, and when we got into the recovery stages, the Wing spent only a few hours cleaning the base.

See Japan, Page 24

Stalking Killer St



storms

The METSAT Team watches the world, searching for the start of potentially deadly tropical storms

By Mr. Paul McCrone

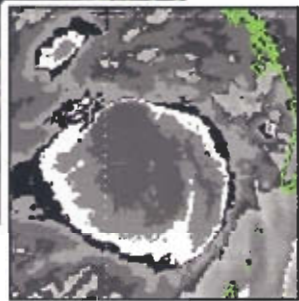
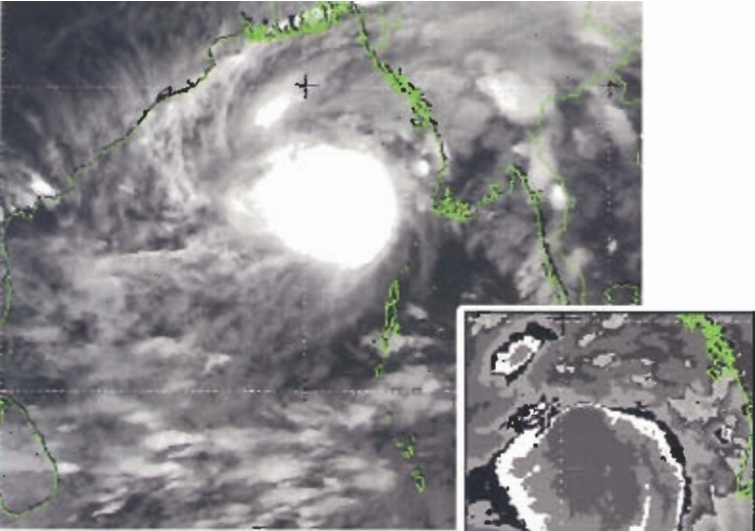
Chief Forecaster,
Meteorological Satellite Applications Branch
Air Force Weather Agency

Deep in the tropics, a cluster of thunderstorms begins to develop, showing increasing signs of organization. Ominous lines of convective cells form into a central, rotating system, with high winds becoming increasingly focused near the center of the circulation – a tropical storm is born!

Global tropical cyclone surveillance is one of the many missions of the Meteorological Satellite Applications Branch at Headquarters Air Force Weather Agency, Offutt AFB, Neb. METSAT Applications also transitions technology from the research and development community into Air Force tropical weather operations. It is composed of our shift analysts, who are responsible for all storm reconnaissance, and updating AFWA's forecast model – the MM5 – with up-to-date initial conditions data. The METSAT technique development staff leverages the latest cutting-edge technologies for satellite weather operations. This group has developed much of the software for the satellite images normally seen on the Joint Air Force and Army Weather Information Network.

A typical challenge facing AFWA analysts is the lack of well-defined features to position the center (an eye is visible in less than 25 percent of tropical cyclone observations). Without an obvious eye feature, the task of finding the location becomes much more difficult. Furthermore, cloud canopies often mask the surface circulation, and nighttime infrared limitations only magnify the problem.

Center positions are – at best – subjective estimates when high-level cloudiness shrouds the circulation. However, precision is critical, since destructive winds are concentrated around the center. This makes it necessary to have independent evaluations from separate agencies to gauge the confidence of the storms' initial position and intensity. The tropical cyclone forecaster feeds the resulting points of scatter into statistical



Tropical Cyclone 05B, Oct. 1999, rumbles through the Bay of Bengal. This image from the European METEOSAT-5 satellite system demonstrates the difficulty associated with finding the circulation center of a cyclone. The inset image shows the same infrared image with specialized enhancement. In both cases, the center is difficult to pinpoint.

regression techniques, which determine an objective solution, assisting in the final placement of the center. This has been demonstrated as the best way to reduce forecaster bias, minimize position errors, and improve overall quality. Inaccurate position and intensity errors can degrade forecast accuracy significantly as far out as 36 hours. These errors may result in false alarm warnings, causing unnecessary resource protection for DoD forces ashore or afloat. Impacts may range from costly ship sorties and rerouting to base preparation measures, including aircraft evacuation.

To pinpoint tropical storm development, AFWA analysts use the latest multi-spectral satellite data. They apply detailed, systematic evaluations of the imagery,

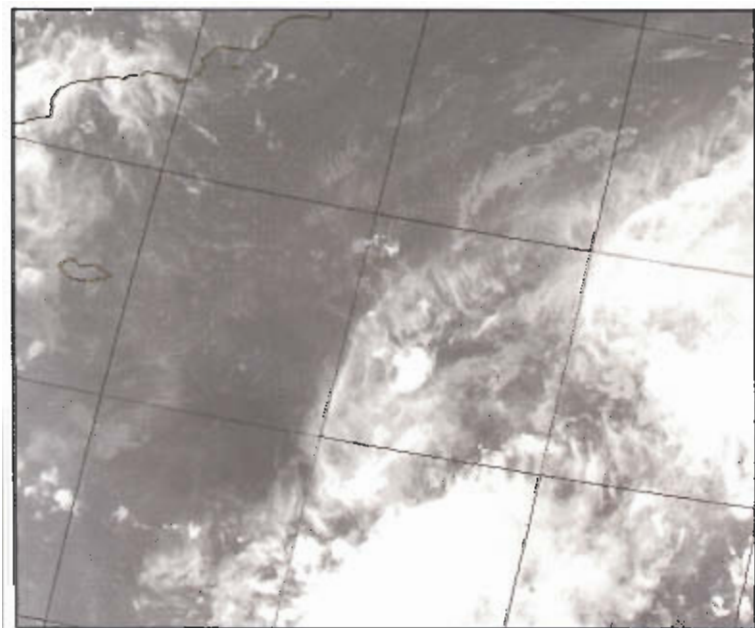
which are sent to the Joint Typhoon Warning Center in Pearl Harbor Hawaii, and the National Hurricane Center in Miami, Fla.

These analyses consist of satellite-derived estimates of the low-level circulation center, in addition to evaluations of maximum sustained wind speeds with the spatial extent of damaging winds. Maximum wind speed is determined every six hours of a cyclone's life cycle. Position updates are sent to JTWC every three hours. These estimates are critical for the tropical cyclone warning centers because direct surface measurements over data sparse ocean regions are infrequent at best.

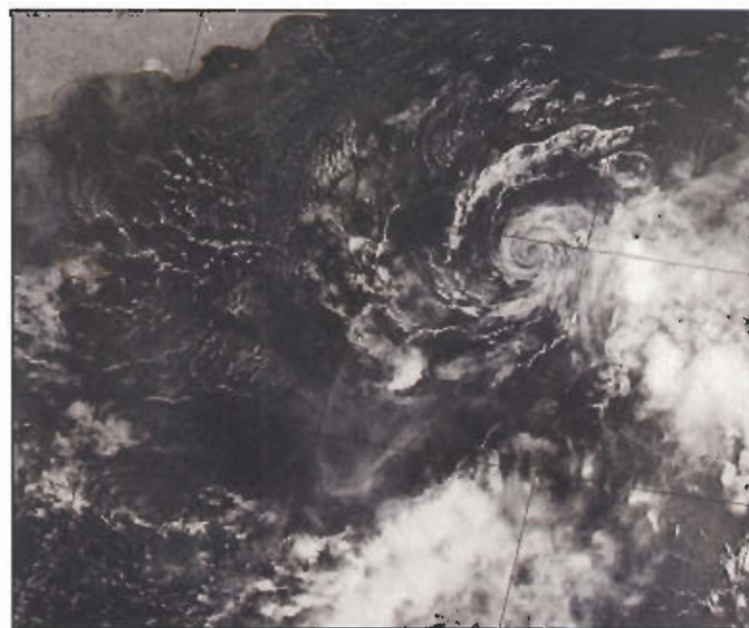
Expensive aircraft reconnaissance is limited to only portions of the western North Atlantic. Other ocean basins are void of such detailed data gathering. To help make up for this shortfall, AFWA collects stored Defense Meteorological Satellite Program data from key readout sites in Thule, Greenland and Fairbanks, Alaska. This polar-orbiting imagery, in conjunction with U.S. and foreign geostationary data received by SATCOM, ensures global coverage of detailed temporal and spatial imagery.

AFWA satellite applications section also serves as the alternate site for JTWC Satellite Operations. If a contingency occurred (power outage, equipment problems, etc.), sat-apps would take the helm, leading the Pacific and Indian Ocean reconnaissance efforts. AFWA would then transmit its surveillance bulletins to the alternate JTWC located at the Naval Pacific Meteorology and Oceanography Center, Yokosuka, Japan.

To produce the best possible tropical cyclone reconnaissance information, AFWA is continuously pursuing the latest METSAT imaging techniques and technologies.



Tropical Cyclone 01A from 1997 in the North Arabian Sea. This infrared image is from the Defense Meteorological Satellite Program.



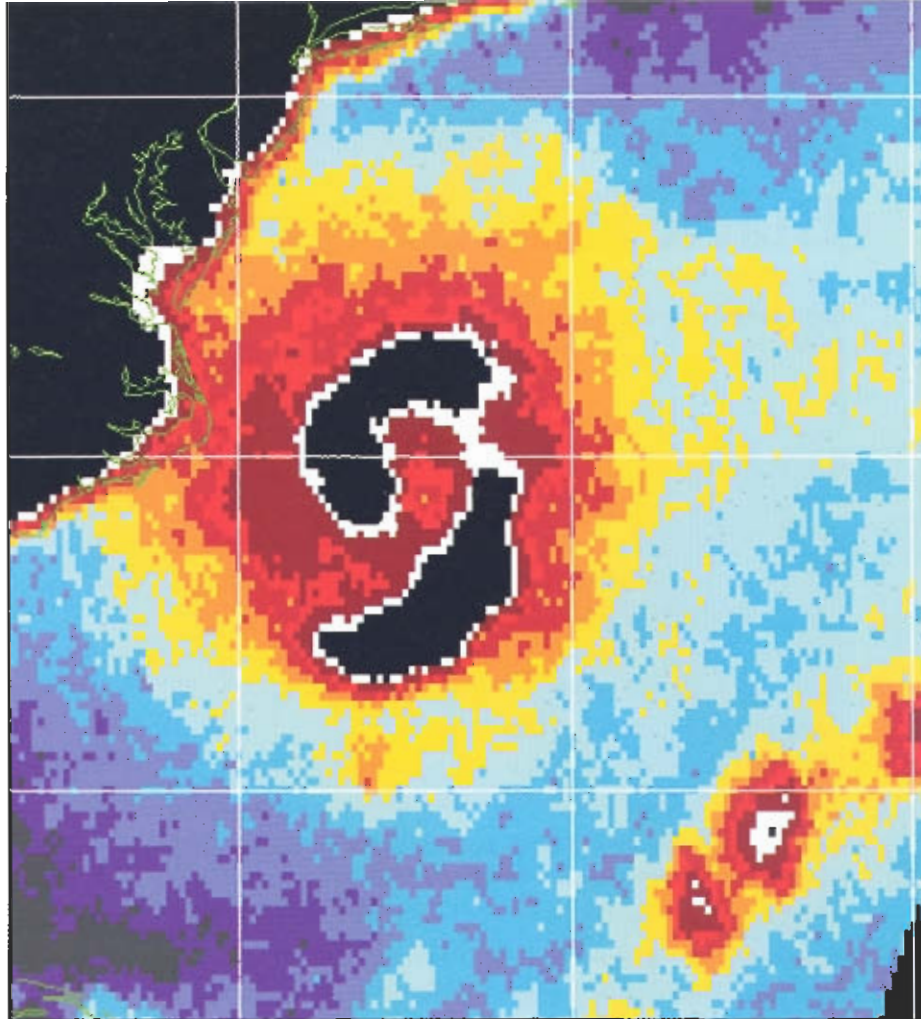
This image is the same storm using the Operational Linescan System. This night-time visible image shows the center more clearly.

For instance, sat-apps is working to incorporate the Mark IVB satellite system for relay into our operations. This will greatly increase the amount of direct readout data available for the surveillance mission. Also, efforts are underway to take advantage of the new data sources from the NASA Earth Observing System satellites. Platforms such as the Tropical Rainfall Measuring Mission and QUIKSCAT wind scatterometer are being used in real time to help JTWC accomplish its mission.

It doesn't end there. The new NOAA Advanced Microwave Sounding Units, currently on board the NOAA-15 and 16 satellites, are giving researchers exciting new capabilities to objectively determine the minimum sea level pressure of tropical cyclones. METSAT Applications is pursuing techniques like this for future operational support to the tropical cyclone warning centers.

Additionally, sat-apps currently produces SSMI-based estimates of gale wind distribution that surrounds strong tropical cyclones. The third image displays color-shaded indicators of high wind – the damaging winds are coded in red. AFWA sat-apps is the only organization that produces SSMI-derived estimates in real time to support the warning centers.

Another product used at AFWA is the low-moonlight capability from the DMSP satellite's Operational Linescan System. With just a small amount of moonlight, the DMSP can see visual-quality images during the nighttime hours. When most other satellites are blind due to darkness, the DMSP OLS still sees highly detailed imagery. The images at the bottom of the previous page are IR pictures over a tropical cyclone. The second image shows the nighttime shot over the storm. Notice how the center of the cyclone becomes much more obvious in the moonlight image. AFWA is the sole group that operationally uses this imagery in tropical cyclone surveillance on a routine basis worldwide. Sat-apps also ship AFWA DMSP imagery directly to the Joint Typhoon Warning Center for their use. This moonlight imagery is very valuable. "This capability really helps us at night, when we only get the infrared imagery. The center is typically harder to find in IR data," according to Mr. John Massura, METSAT Applications Branch meteorological satellite analyst.



Hurricane Felix threatens the Eastern seaboard on the U.S. This image is from the Defense Meteorological Satellite Program, using the Special Sensor Microwave Imager. This image details the extent of the gale force winds surrounding the hurricane. Damaging gale force winds are in red color shades. The black and white area in the middle shows regions where intense rainfall is taking place, thus obscuring the surface wind signal. The small red and white areas to the southeast of the storm are intense thunderstorms that produced locally heavy rain.

Look for the Applications Branch to improve its operations by using the new Objective Dvorak Technique. Developed by the University of Wisconsin, ODT gives a part computer/part manually generated calculation of tropical cyclone maximum winds. This new capability will enable more frequent intensity calculations, leading to earlier detection of rapid intensification or weakening trends.

The AFWA METSAT Applications team remains always watchful, monitoring the tropics for potential development of tropical systems. Last year alone, AFWA sent 5,395 surveillance bulletins in connection with 157 different tropical disturbances worldwide. These manually produced analyses, as well as other products, are transmitted to JTWC and NHC immediately to help these agencies accomplish their mission. The ultimate goal is resource protection, supporting "...operational units in making decisions on ship movements, aircraft sorties and operational planning..." by issuing forecasts and warnings of these dangerous storms. ♪

A Day in the Life: Black Horse Combat Weather Team

By Tech. Sgt. Jeffery Light

NCOIC, 6th Cavalry Brigade Combat Weather Team

The phone rings at 4:15 a.m. In a haze, you answer to hear those dreaded words: "Recall!"

That's how the drill usually starts for members of the 6th Cavalry Brigade Combat Weather Team, Det. 2, 607th WF at Camp Humphreys, Korea, and it's the beginning of a long day that turns into an adventure. Deploying and providing weather support for 6 CBAC mission is both challenging and rewarding, and it's one of Det. 2's wartime taskings here at "The Hump."

The 6 CBAC CWT provides 24-hour weather support to the 6th Cavalry Brigade Staff. These decision makers control the battle and require accurate and timely weather support to choose targets and plan strikes. The team also coordinates and directs support of two subordinate CWTs in forward-deployed areas; specifically the 1st and 3rd Aviation Squadrons of the 6th Cavalry Brigade. The AH-64 Apache pilots are briefed the weather conditions that will affect all aspects of their mission. Forecasters develop electro-optical targeting forecasts as well as mission execution forecasts for both over-water and land targets. Around-the-clock weather support is required of the 6 CBAC team to ensure data flows to the forward teams

and in turn, is briefed at the Brigade level.

From Camp Humphreys, the team rolls out with an Integrated Meteorological System vehicle and a HMMWV packed with equipment to include a Small Tactical Terminal, Quick Reaction Communication Terminal, Tactical Very Small Aperture Terminal, New Tactical Forecast System, MOS kit, TMQ-34, TMQ-33, and 10K generator. Weapons are drawn and full "battle-rattle" – LBE, kevlar helmet, gas mask, etc., is worn at all times by the team's five members.

The days out in the field are challenging to say the least. Lack of the normal comforts of home makes living in field conditions quite a challenge! However, necessity is the mother of invention, and ways to combat the adverse conditions are creative to say the least. Tent living and MRIs are part of a hard day's work, but after a tough 12-hour shift, some beef in teriyaki sauce with vegetables and a cor really hit the spot!

Once in your cot, sleep comes fast as you are exhausted from a hard day's work. Just when you hit your deepest sleep, you're jolted by the sound of explosions and gunfire. You're camp is being attacked! Grabbing your weapon, you run to your fighting position and stay low with your head down, watching for aggressors. Ground burst simulators go off all around you and the sound of gunfire is everywhere. You think to yourself... "and I thought I'd only be taking obs!" Deploying with "Black Horse" is truly an eye-opening experience filled with training opportunities of all sorts.

The deployment can last for a few days or a few weeks. Time seems to pass differently in the field, much faster, and before you know it, you're in a convoy headed for home. Once you return, it's time to recover all the equipment and vehicles and reward yourself with a long hot shower. The mission here at "The Hump" is always an adventure. Deploying and providing the Army's weather support is a challenge that the team, recognized by the Pacific Air Forces Inspector General as "Outstanding Team" during the 7th Air Force ORI, meets well. ♣



Tech. Sgt. Mike Pietrzak, 6th CB CWT, conducts a convoy safety briefing with Staff Sgts. Angela Zephier and Carl Garcia, and Airman 1st Class Aaron Strickland.

Blue skies and stormy weather for Air Force team

Det. 1, 18th WS, Korea, provides weather support for the “Over The Shore” joint exercise

By Maj. Laurent Fox
U.S. Forces Korea
Public Affairs

CHILPO BEACH, Republic of Korea (ACCNS) – “Weather advisory: Expect sustained winds of 30 knots with gusts above 40 knots with accompanying heavy rain at times. Sea wave height will reach approximately eight feet. Recommend all watercraft go to safe port and secure all loose items.”

This isn't a coastal weather report from your local television channel, but a recent forecast from Det. 1, 18th Weather Squadron, on a May deployment to Chilpo Beach in the Republic of Korea.

Three members of the detachment, Maj. James Cotturone Jr., Tech. Sgt. Daniel Tucker and Senior Airman Joseph Taylor, provided weather support for the Combined Joint Logistics Over The Shore exercise.

The detachment, an Air Combat Command unit based at Fort Eustis, Va., issued the severe-weather advisory before a fierce spring storm hit this small stretch of beach on the southeastern coast of South Korea.

Fortunately, the Combined Joint Task Force heeded the advisory and

was prepared for the worst during this key exercise.

“The Army wanted to put up a modular pier to use for offloading equipment from the ships,” said Tucker. “We gave them an advisory 48 hours before the storm hit and they decided to hold off on constructing the pier. Our advisory

helped save a lot of potential trouble for the Army crews.”

Army Col. Robert Wright, chief of CJTF operations, echoed those thoughts. “They helped us in getting three ships out of harm's way and to a safe port before the storm hit. We also moved our smaller watercraft and tightened down the camp.”

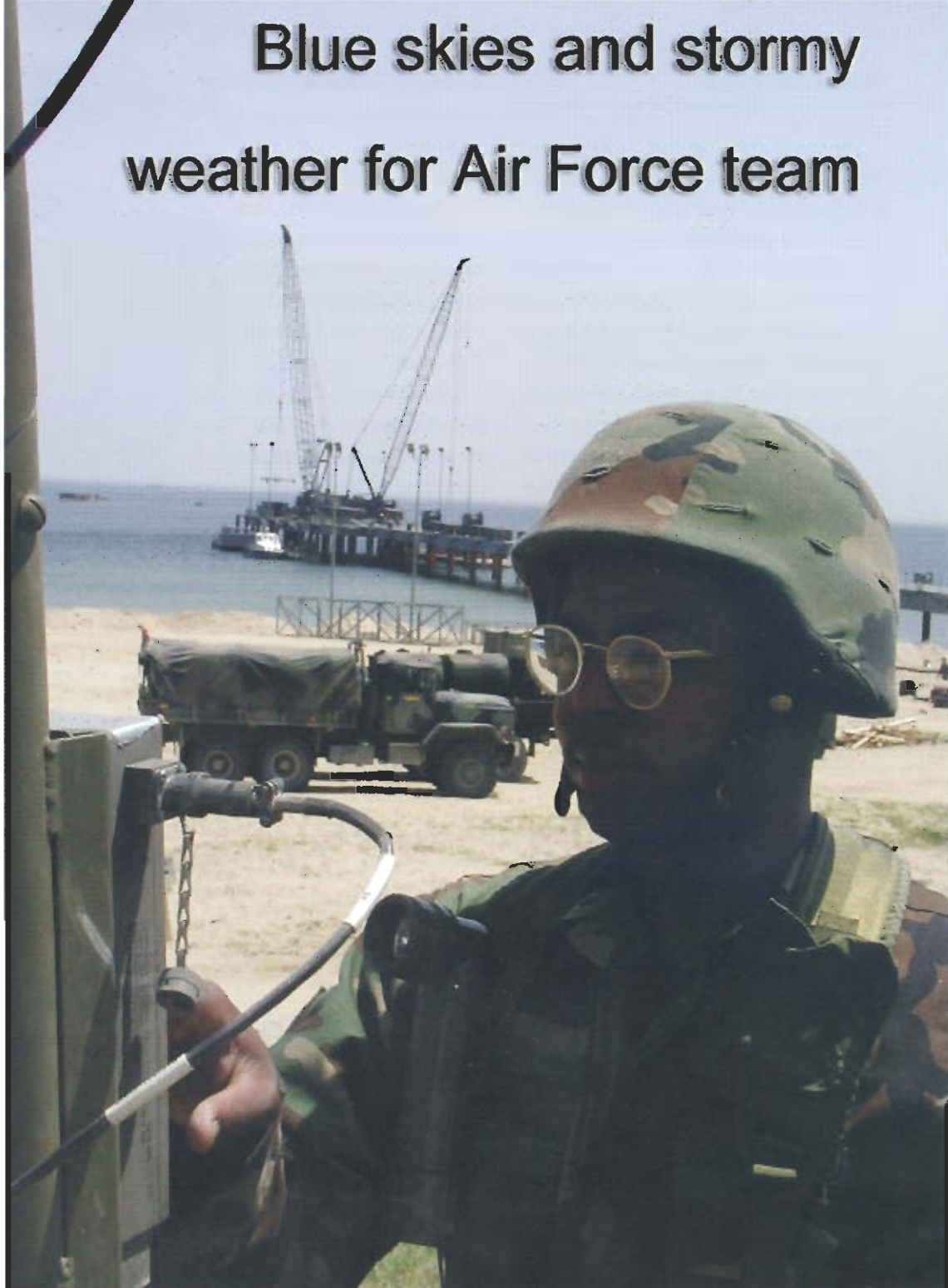


Photo by Maj. Laurent Fox

Tech. Sgt. Daniel Tucker checks the wind velocity on Red Beach during the Combined Joint Logistics Over The Shore exercise in South Korea. The exercise ran from May 10 through June 6.

Korea continued

In the exercise, people offload equipment and supplies from a ship anchored off the coast onto smaller specialized watercraft that delivers it to a floating or fixed pier constructed specifically for the operation.

Then the cargo is moved across a minimally prepared beach site and onward to the host nation's transportation infrastructure. U.S. forces would conduct this type of operation if port facilities weren't available in a contingency or a natural disaster.

This year's exercise was the largest bare-beach delivery of military equipment on the Korean peninsula since the Korean War, when U.S. troops landed behind the enemy lines at Inchon.

Maj. Cotturone is the commander of Det. 1 and the task force's meteorological and oceanographic officer.

A weather officer for 13 years, he has deployed many times in support of the Army.

"We are just three Air Force weather guys with two Naval meteorological environmental team augmentees providing 24-hour weather support for almost 1,500 Navy, Army and ROK forces," said Cotturone.

This edition of the Combined Joint Logistics Over The Shore exercise was the first that used combined U.S. and ROK forces. Cotturone said the weather crew wasn't fazed by the challenges of working with several different services and two countries.

"Based on some lessons learned from previous exercises, we were able to tailor our weather products for each customer without any problems at all. It worked out great," he said.

In addition to meteorological

forecasts, the weather team makes oceanographic reports, helping commanders decide whether to continue or suspend water operations. If wave heights reach a certain level, the exercise commanders will suspend most of the water operations.

"It's up to the weather forecasters to help predict these impending sea levels and give enough warning to the operators," said Cotturone.

Working in a joint-service environment is nothing new for this weather detachment. Though they are aligned under ACC's 18th Weather Squadron at Ft. Bragg, N.C., they are attached to the Army's 7th Transportation Group at Ft. Eustis in southeastern Virginia. The detachment supports airfield operations at Ft. Eustis' Felker AAF and helps with mission planning for watercraft training missions. ♪

Japan, continued from Page 17

Operations were back to normal very quickly."

Keene also remembered that, "after Super Typhoon Bart, which gave us 126-knot winds, I was convinced of the strength of Kadena's 'typhoon proof' buildings. It gives us a comforting feeling knowing that as long as our families, friends and coworkers stay inside their homes, they will be safe. It allows our flight to concentrate all our efforts on getting the aircraft evacuated on time, and it also allows us to spend more time fine-tuning the forecast for our customer."

The other major storm to invade Okinawa was Super Typhoon Saomai. Only a month after Typhoon Jelawat, Super Typhoon Saomai swept within ten nautical miles of Kadena AB.

With winds of 140 knots gusting to 170 knots near the Super Typhoon's center, the Kadena weather flight felt pressure to provide accurate forecasts and current data.

"When Typhoon Saomai was down by Guam, I forecasted it coming within ten miles of Kadena, and the nearest point of approach was nine miles to our north," said Tech. Sgt. George Catron, 18th WF forecaster.

Catron recalls the typhoon season as a "very exciting time" in which he was able to test his skills against the experts by trying to predict the track the path of an

incoming storm as accurately as the JTWC pros did."

Like Typhoon Jelawat, Super Typhoon Saomai kept Kadena residents in their homes for two days. Schools closed, and 24 aircraft evacuated the island.

With safety and resource protection being paramount, these precautions are necessary when Kadena forecasters are expecting such hostile conditions. "We prefer to error on the side of caution, because it is better to be safe than sorry," said Staff Sgt. Rodney Jacobs, weather forecaster, when asked about being worried about giving a false alarm.

"We depend primarily on satellite imagery to make our typhoon forecasts, and we must recommend evacuation of aircraft when a storm is threatening our resources and our safety," added Jacobs. Evacuation was a wise choice.

Typhoon season is one of the most exciting things about being a member of the 18th WF. "When we deliver a good product, we safeguard resources and countless lives; that makes us proud of what we contribute to our mission," said Master Sgt. Brian Wynn, Superintendent of the 18th WF.

Although we experience high expectations from our superiors and surrounding community, working a typhoon also reminds us of the important role that weather plays in military operations. ♪

IMAs to the rescue

Individual Mobilization Augmentees can give Air Force Weather units a real shot in the arm when units are hurting for experience

By Tech. Sgt. Miles Brown
Air Force Weather Agency Public Affairs

The Air Force Reserves have a few good people ready to step in and pick up the slack – they are known across the Air Force as IMAs, and in the weather field, Individual Mobilization Augmentees can add a wealth of knowledge and experience to needy units.

Weather IMAs wear many hats in their reserve roles. During wartime, augmentees may be activated to fulfill their warfighting job – weather forecasting for real-world situations. In peacetime, reservists must stay current in their warfighting job by serving one weekend day per month (inactive duty) and two weeks of active duty for a total of 24-26 days annually. Often the inactive days are served at a nearby base weather station/Combat Weather Teams, with the active time in the warfighting unit of assignment.

The IMA force for Air Force Weather consists of about 90 percent officers and 10 percent enlisted, with many of these people working in the weather career field in their civilian jobs, according to Col. Jim Hoke, Mobilization Assistant to the Commander of AFWA.

These weather professionals gain valuable experience from their military duty time, and they also offer a fresh look at the military weather challenges the Air Force faces every day, said Hoke. In the civilian world, Dr. Hoke serves as the Director of both the Hydrometeorological Prediction Center and Marine Prediction Center of the National Weather Service in Maryland.

“Being in the Reserves has been very synergistic for many weather people,” said Hoke. “Their military training and experience can be applied in their civilian jobs and vice versa. While on military duty, reservists have the ability to think out of the box when faced with difficult problems.”

Filling the shoes of an IMA takes a person capable of working on their own – **Individual**; ready to respond in a crisis – **Mobilization**; and willing to augment an active unit – **Augmentee**.

“The most important of these qualities is the ability to work independently,” said Hoke. “IMAs must be self-starters. Most augmentees serve as a reserve unit of one,



working closely with full time active duty weather people and not a Reserve unit.”

The IMA program offers reservists the opportunity to contribute more than the standard two active-duty weeks a year and one weekend day per month, according to Lt. Col. Beth McNulty, IMA deputy chief of training division of AFWA.

“The major commands have reserve ‘mandays’, paid for by the command, to supplement their manning,” said McNulty. Some augmentees can work months of active duty paid for by the major commands. “It is up to the reservist and the command IMA manager to schedule duty with an active duty weather unit to meet both the Air Force’s and IMA’s needs.”

Getting into the Reserve’s IMA program may seem difficult and the rules complex, but once you’re working as an IMA, the rewards can be great for both the reservist and the Air Force. “The rules governing the IMA world are elusive, unless you’re in the system,” said McNulty, a full-time National Weather Service forecaster in Glasgow, Montana. She added that if you’re considering leaving active duty, the first step to join the reserves is to talk to a reserve recruiter at your base.

Many of the questions about IMAs in AFW can be answered using the AFWA training page on the AFWA website, said McNulty.

IMAs and weather units can also visit the ARPC website at <http://www.arpc.org/> to learn more about IMA assignments and to contact the command managers.

Weather units across the world can take advantage of the IMA program; it just takes a little research and a reservist in your area or one ready to travel there. ♪

Master Station Catalog moves to HQ AFWA

By Tech. Sgt. Craig Lacy
Master Station Catalog Manager

Det. 7, Air Force Weather Agency, Tinker AFB, Okla., is undergoing monumental changes in the way they conduct business. The cornerstone of alphanumeric data processing at Det. 7 is the Master Station Catalog.

On or around November of 2001, the MSC will become part of the Air Force Weather Reengineering effort, and MSC functions will transfer to Air Force Weather Agency, Offutt AFB, Neb. This move paves the way for the MSC of the future with improved interoperability, flexibility and increased data fields.

The MSC is a one-of-a-kind listing of worldwide weather reporting locations. Currently, the catalog contains approximately 14,000 weather station entries. This data is maintained and updated to ensure accurate validation of Numerical Weather Models and Weapon Systems Databases. In modern database terms, the MSC acts as a data dictionary or catalog that contains the metadata, the details about data, on the weather information of the source station. A partial list from these data elements includes: station latitude, longitude, elevation, units of measure, types of instrumentation used, ICAO, frequency of reports, and data type. These data elements are necessary for proper classification and distribution of the multitude of alphanumeric products generated and disseminated by Det. 7. The MSC literally governs which stations are placed in their respective bulletins.

The data in the MSC is used for everything from setting up weather support for individual customers, to

successfully ingesting data into complex numerical weather prediction models, weather databases, and weapon systems databases. Therefore, accurate information in the MSC is vitally important to everyone using the catalog.

Maintaining this huge database is no small task. Det. 7's MSC Manager in the Data Acquisitions Section ensures the catalog reflects accurate locations and current availability of worldwide weather data. The MSC manager is constantly updating this database. Some common changes to the MSC occur when a reporting station is moved, closed, or alters the way it reports data. Other reasons include the discovery of new or additional reporting stations not previously known.

The Data Acquisitions Section must perform considerable research to detect and verify these changes, and then modify the MSC. Although the accuracy of the MSC is the responsibility of the MSC manager, communication of station changes plays a huge part in simplifying this job. Known inaccuracies should be promptly reported to the MSC manager to enable changes in the MSC. The MSC manager can be contacted at DSN 339-7628, commercial 405-739-7628 or email afwa.do@tinker.af.mil. After December, the manager can be reached at:

Current Requirements Branch
HQ AFWA/XORC
106 Peacekeeper Drive STE 2N3
Offutt AFB, NE 68113-4039
Commercial: 402-232-7857 DSN 272-7857
email: craig.lacy@afwa.af.mil ✉

AETC, continued from Page 4

an example, I end up with at least nine ceiling/visibility, five crosswind, and six flight hazard thresholds that impact what training may be accomplished, where training may be accomplished, and whether or not it can be conducted solo. Requirements vary according to the specific flying maneuvers being trained, such as the 10,000 ft of clear air space needed to conduct loops.

Then the flying and operational support squadron commanders

chipped in — their feedback was consistent. To meet today's pilot production requirements and do it safely, they must exploit the weather. Accurate, precise planning and mission execution forecasts for their entire area of operations are vital.

And so went the educating of "Forrest Hoop" this first year. AETC weather flights...you've got an absolutely key role in reengineered weather operations. Keep up the great work! ✉

If you like what you see in your *Observer* magazine, or have a suggestion to improve the publication, please send us an e-mail at:

observer@afwa.af.mil

You may write us at:

HQ AFWA/PA
106 Peacekeeper Dr., Ste. 2N3
Offutt AFB, NE 68113-4039

You may also call us at:

(402) 294-3115
DSN: 271-3115

Thank you for your support!

Questions from the field?

Answers from the Staff!

The Director of Air Force Weather, Brig. Gen. David Johnson, and his staff are working to dispel rumors and educate the career field on "hot issues" in weather. Questions may be submitted to the Air Staff via e-mail at afxow@pentagon.af.mil

Q. When I deploy, all of my folks go. No weather people are left here, but there is still a need for weather information because the whole base/post doesn't go. Who takes care of my home base/post?

A. Your supporting OWS will take care of them. For example, if your Army wartime customer deploys and you go with them, you should coordinate with your OWS on the types of support the OWS needs to provide to your Post while your unit is deployed.

Q. My customer doesn't want me to live in the flying squadron. What should I do?

A. Our experience so far has been that fighter units with an air-to-ground mission are excellent targets for moving in. You should do so. The other types of squadrons aren't quite that easy. You are better off spending time in those squadrons but you still physically remain at your old locations.

For example, the MEF forecaster for a squadron has just coordinated in the squadron and is now fully aware of their needs. He/she returns to where the quarterback resides (old BWS), develops the MEF, and then returns to the squadron to provide the MEF brief and again to debrief when the mission returns.

Q. How should I deal with transient crews?

A. The established policy is clear, but again some common sense applies. As you reengineer, you should have established a weather Kiosk in the flight planning area. Crews should also have easy access to the OWS via phone or web page.

We are developing a standardized visual aid explaining the process and the basics of reengineering for this purpose. Transient crews should use this service. Periodically, aircraft with quick turns pass through your base. C-21s are a notable example. If these crews are really pressed for time or have problems getting hold of the OWS, lend them a hand, provided you are available.

Again, this should be the exception, not the rule. Transient support goes to the hub. We are starting a Publicity Blitz education plan to bring aircrews up to speed.

Q. What are the current weather re-enlistment bonuses and how long will the weather bonuses stay around for airmen re-enlisting?

A. We just received an update and the bonuses are still valid (4.5 for 1st termers, 3 for 2nd termers, and 1 for career) and good through October 2001. The re-enlistment bonuses are reviewed semi-annually, so plan your re-enlistment accordingly. You should also note that the re-enlistment stats are looking good — we have beaten the AF average for two cycles and we do not know how much longer the bonuses will stay past the October 2001 date. If we hear of any changes to the bonuses, we will notify the MAJCOMs ASAP.

Q. When are we going to see another relief in AEF taskings?

A. We are evaluating AEF taskings all the time and things are getting better. Since Operation ALLIED FORCE ended, our "steady state" TDY requirements have dropped from 98 to 58 days. This includes taskings USAFE recently eliminated. Now that we have fielded the TMQ-53, we are looking at eliminating more taskings in EUCOM and CENTCOM. We are all part of the AF team — MAJCOMS will work this.

Q. It still takes a lot of work being the AMIS system manager. Are we going to get any relief?

A. As we work towards fielding AMIS 4 and as we develop requirements for AMIS 5, the workload requirements will continue to go down. Eventually, your wx application at the CWT will only be a web-based application. So the short answer is yes, relief is coming, but not in the next 12 months.

AFW's Newest Masters and Techs "Flying High"



Master Sergeant selects:

Glenn Adams, Yongsan, Korea
 Mark Adams, Ft. Knox, Ky.
 William Anders, Learmonth, Australia
 Carol Andersen, Hurlburt Field, Fla.
 Eric Apple, Asheville, N.C.
 Kirk Bailey, Ft. Ritchie, Md.
 Bruce Bellairs, Offutt AFB, Neb.
 Charles Bloodworth, Offutt AFB, Neb.
 Steven Brown, Offutt AFB, Neb.
 Edwin Budden, Sembach AB, Germany
 Frank Bumgarner, Offutt AFB, Neb.
 Kenneth Burgess, Ft. Wainwright, Alaska
 Paul Cafiso, Keesler AFB, Miss.
 Victor Carson, Offutt AFB, Neb.
 Gary Carter, Sembach AB, Germany
 Shane Castle, Davis-Monthan AFB, Ariz.
 Michael Chandler, Sheppard AFB, Texas
 Ray Christensen, Sembach AB, Germany
 Christopher Comte, Wright-Patterson AFB, Ohio
 Patrick Cope, Offutt AFB, Neb.
 Gerald Cordova, Incirlik AB, Turkey

Robert Cory, Asheville, N.C.
 Michael Dubrule, Maxwell AFB, Ala.
 Lyle Elliott, Asheville, N.C.
 James Farmer Jr., Patrick AFB, Fla.
 John Farris, Ft. Bragg, N.C.
 Garth Getgen, Yongsan, Korea
 Larry Groff, Tinker AFB, Okla.
 Mark Gustilo, Kadena AB, Japan
 Lance Halsey, Langley AFB, Va.
 David Haney, Elmendorf AFB, Alaska
 Todd Herman, Offutt AFB, Neb.
 James Kerzwick, Asheville, N.C.
 Craig Kirwin, Shaw AFB, S.C.
 John Kramer, Offutt AFB, Neb.
 Melvin Kunkel, Pope AFB, N.C.
 Donald Laframboise, Hickam AFB, Hawaii
 John Lamb, Yongsan, Korea
 David Law, Pope AFB, N.C.
 John Leurck, Osan AB, Korea
 Harry Lind Jr., Randolph AFB, Texas
 John Lindfors Jr., Ft. Bragg, N.C.
 Robert Love, Kunsan AB, Korea
 Jeffrey Marshall, Hanau, Germany
 Glenn Matthews, Shaw AFB, S.C.
 Michael Maytes, Spangdahlem AB, Germany
 Colin McCoy, Shaw AFB, S.C.
 Lawrence McCoy Jr., Scott AFB, Ill.
 Garth McCulloch, Ft. Rucker, Ala.
 Kelly Mcgee, Offutt AFB, Neb.
 Carianne Melnick, Offutt AFB, Neb.
 Gregory Myers, Mildenhall, United Kingdom
 Tammy Newman, Offutt AFB, Neb.
 Jimmy Odom, Keesler AFB, Miss.
 Stefan Padillo, Ft. Campbell, Ky.
 David Pagillo, Davis-Monthan AFB, Ariz.
 Daryl Pegram, Hill AFB, Utah
 Raymond Pelletier, Eielson AFB, Alaska
 Theodore Prichard, Honduras
 Daniel Radebaugh, Offutt AFB, Neb.
 Dennis Rice, Shaw AFB, S.C.

Scott Rikard, Offutt AFB, Neb.
 Randall Ritchie, Sembach AB, Germany
 Kent Schupp, Asheville, N.C.
 James Slisik, Learmonth, Australia
 Jeffery Smeby, Offutt AFB, Neb.
 Louis Straw, Offutt AFB, Neb.
 Kyle Teeselink, Davis-Monthan AFB, Ariz.
 John Thor, Offutt AFB, Neb.
 Ronald Thurow, Lakenheath, United Kingdom
 James Vinson, Ft. McPhearson, Ga.
 Keith Wagner, Camp Humphreys, Korea
 Leslie Westover, Offutt AFB, Neb.
 Jimmy Williams, Yongsan, Korea



Technical Sergeant selects:

George Anghelescu, Mildenhall, United Kingdom
 Brady Armistead, Pope AFB, N.C.
 Arnold Ascano, Keesler AFB, Miss.
 Amado Azua Jr., Sembach AB, Germany
 Brent Baker, Offutt AFB, Neb.
 Shawn Baker, Offutt AFB, Neb.
 William Barnwell, Ft. Bragg, N.C.
 James Barton, Tinker AFB, Okla.
 Gina Bates, Keesler AFB, Miss.
 Matthew Beveridge, Ft. Polk, La.
 Michael Bielas, Davis-Monthan AFB, Ariz.
 Glen Bordelon, Shaw AFB, S.C.

Thomas Briggs Jr., Whiteman AFB, Mo.
Randall Brooks, Hanau, Germany
Louis Brown, Sembach AB, Germany
Duane Bruce Jr., Ft. Wainwright, Alaska
Scott Butler, Keesler AFB, Miss.
Don Chambers, Schriever AFB, Colo.
Werner Champion, Keesler AFB, Miss.
Robert Chauvin, Yokota AB, Japan
Jose Chavarria, Camp Blanding, Fla.
Adam Christian, Hurlburt Field, Fla.
Craig Clark, Hunter AAF, Ga.
Julie Clark, Offutt AFB, Neb.
Michael Claxton, Offutt AFB, Neb.
Gary Clinton Jr., Keesler AFB, Miss.
Scott Creedon, Keesler AFB, Miss.
Thomas Cross, Hickam AFB, Hawaii
Michael Dannelly, Hurlburt Field, Fla.
Scott Darling, Malmstrom AFB, Mont.
Dax Davis, Edwards AFB, Calif.
Glen Demars, Kadena AB, Japan
James Dixon, Yokota AB, Japan
Nathan Dixon, Ft. Wainwright, Alaska
Michael Edelson, Shaw AFB, S.C.
Douglas Ehle, Ft. Carson, Colo.
Jeremy Entwistle, Lajes Field, Azores Portugal
Carlomango Erhardt, Yongsan, Korea
Duke Fahey, Barksdale AFB, La.
John Frank, Langley AFB, Va.
Mario Franklin, Offutt AFB, Neb.
Ronald Gacke, Offutt AFB, Neb.
Gregory Golojuch, Palchua, Hawaii
Roland Gonzalez, Vicenza AB, Italy
Donald Gossel, Eielson AFB, Alaska
David Granniss, Mildenhall, United Kingdom
Jeffrey Grimm, Hurlburt Field, Fla.
Thomas Hakes, Ft. Campbell, Ky.
Linda Ham, Learmonth, Australia
Wayne Hardesty, Nellis AFB, Nev.
Jason Hark, Sembach AB, Germany
Dean Harpster, undisclosed location
Carlton Hatfield, Anderson AFB, Guam
James Heinrich, F.E. Warren AFB, Wyo.
Angela Hilliardsellers, Tinker AFB, Okla.
Donald Holt Jr., Asheville, N.C.
Darrin Hughes, Offutt AFB, Neb.
Brian Jacobi, Hurlburt Field, Fla.
David Kellam, Asheville, N.C.
Darryl Kirby, Peterson AFB, Colo.
Dwayne Klinzmann, Heidelberg, Germany
Donald Kusz, Asheville, N.C.
Mark Kuttner, Davis-Monthan AFB, Ariz.
Leonard Laforest, Lajes Field, Azores Portugal
Krista Landreneau, Sembach AB, Germany
Clint Lauricella, Sembach AB, Germany
Brian Lawell, Kadena AB, Japan
Michael Leahy, Asheville, N.C.
Douglas Leas, Offutt AFB, Neb.
Gary Lewis, Schriever AFB, Colo.
Ricky Lipscomb, Keesler AFB, Miss.
Robert Lloyd, Seymour Johnson AFB, N.C.
Richard Lopes, Ft. Wainwright, Alaska
Robert Marlett, Mildenhall, United Kingdom
Edward Martin, Maxwell AFB, Ala.
Leon Maxwell, Giebelstadt, Germany
Scott McCormick, undisclosed location
Shane McIntire, Ft. Hood, Texas
William McMurtry, Hurlburt Field, Fla.
Kevin McNeely, Wurzburg, Germany
Ronald Meadows, Lajes Field, Azores Portugal
Jaime Mendez, Keesler AFB, Miss.
Mark Millen, Honduras
David Moman, Ft. Eustis, Va.
James Morello, Hunter AAF, Ga.
Anthony Morence, Moody AFB, Ga.
James Morris, Hunter AAF, Ga.
Bruce Moser, Minot AFB, N.D.
Allison Naylor, Asheville, N.C.
Larry Norman, Camp Humphreys, Korea
Scott Nych, Learmonth, Australia
Paula Owen, Offutt AFB, Neb.
Garry Patterson, Yokota AB, Japan
Phuoc Phan, Barksdale AFB, La.
Dorothy Posey, Kunsan AB, Korea
Ronnie Ramos, Keesler AFB, Miss.
Daniel Rawls, Aviano AB, Italy
Paul Reeves, Osan AB, Korea
John Rejnier, Seymour Johnson AFB, N.C.
John Robbins, Barksdale AFB, La.
Stephen Rutherford, Randolph AFB, Texas
Luis Saavedra, Sembach AB, Germany
Randy Sabin, Aviano AB, Italy
Kevin Safreed, Sembach AB, Germany
Charles Schmidt, Ft. Bragg, N.C.
Donald Shane Jr., Wright-Patterson AFB, Ohio
William Smith, Mountain Home AFB, Idaho
Jesse Soileau, Whiteman AFB, Mo.
Bennie Solberg, Yongsan, Korea
Tina Stott, Davis-Monthan AFB, Ariz.
Robert Sugden, Ellsworth AFB, S.D.
James Tart, F.E. Warren AFB, Wyo.
Jamey Tate, Offutt AFB, Neb.
Brian Thomas, Torii Station, Japan
Cameron Thomas, Peterson AFB, Colo.
Brian Thompson, Keesler AFB, Miss.
Milton Threet, Shaw AFB, S.C.
Robert Thur, Patrick AFB, Fla.
Matthew Timmermann, Keesler AFB, Miss.
Paul Torres, Andrews AFB, Md.
Benjamin Touchstone, Barksdale AFB, La.
James Tracy, Offutt AFB, Neb.
Seth Trent, Eglin AFB, Fla.
Phillip Turner, Keesler AFB, Miss.
Mario Viray, Keesler AFB, Miss.
Robert Wagner, Beale AFB, Calif.
Thomas Wenger, Ramstein AB, Germany
Victoria White, Giebelstadt, Germany
Michael Williams, Eielson AFB, Alaska
Robert Williams, Wheeler AAF, Hawaii
Roland Wilson Jr., Offutt AFB, Neb.
William Wilson, Sheppard AFB, Texas
Todd Winters, Lajes Field, Azores Portugal
Carter Wirtz, Ft. Wainwright, Alaska
Burtice Wood, Yongsan, Korea
Robert Wood, Sembach AB, Germany
Ralph Wright, Wiesbaden, Germany
Daniel Yanok, Robins AFB, Ga.

evacuation guidance, insurance requirements, pet care, staying at home tips, and includes a quick reference page. It also includes links to the National Hurricane Center, National Weather Service, and local FEMA sites. The objective of the site and the command's preparedness programs is to put information at people's fingertips so they can get prepared for tropical storms and hurricanes, and ultimately avoid unnecessary accidents and casualties.

When a hurricane threatens Miami-Dade and Broward counties, Emery and Lt. Col. Bill Delehunt, chief of Meteorology and Oceanography, provide forecasts that are critical in the command's decision to deploy the alternate command post and Command Group Alpha to Davis-Monthan AFB, Ariz. Supervisors use the information to release personnel who need to evacuate or hunker down with their families as the storm passes.

From December to May each year, Delehunt said the staff also takes a proactive approach to getting ready for the hurricane season, which runs from June 1 through Nov. 30.

The command prepares locally with Red Cross training classes at the

headquarters, and through engagement efforts with local government agencies and abroad in Latin America.

Recently, command weather officials facilitated a Caribbean Hurricane Awareness tour onboard a Hurricane Hunter C-130 designed to foster discussions and better communication between forecasters in the U.S. and Caribbean nations.

Weather forecasters, aircrew members and other officials from the 53rd Weather Reconnaissance Squadron, Kessler AFB, Miss., the National Hurricane Center, SOUTHCOM, Weather Channel Latin America and the Monroe County, Fla., FEMA coordinator took advantage of the tour held April 16 through 21.

The first stop on the tour was in Cancun, Mexico. There, the Mexican government held a hurricane awareness conference to discuss emergency management issues and preparedness for the upcoming hurricane season.

From there the group traveled to Kingston, Jamaica, where the government also held meetings to discuss emergency management. The group also stopped in Puerto Rico and St. Croix and spoke to the media about the upcoming hurricane season and what precautions to take.

"The trip was a great opportunity for the group to meet the host-nation

meteorologists and discuss how SOUTHCOM can assist them during a hurricane," Emery said. "We discussed a number of topics such as sharing information and maintaining communications as a storm approaches. We shared a lot of ideas and we offered to help them whenever possible," she added.

Emery said the tour was a success because "preparation" is always the key to surviving a hurricane.

"The Caribbean, like Miami, is a huge magnet for rainstorms and hurricanes. We can get hit from all sides anytime during the year, but especially during hurricane season. You never know when a big one can hit, so you have to pay attention and be prepared. This tour emphasized that point," she said.

The National Hurricane Center is predicting 10 hurricanes in 2001, and rest assured, SOUTHCOM is monitoring every storm system to give commanders time to prepare and plan for storms. With enough notice, the command can plan in advance to assist nations and communities that lie in the path of a hurricane.

"If our forecasts help to save even one life or help to protect even one family facing the destructive force of a hurricane like Mitch, then I know we've succeeded with our mission," Emery said. ♡

Typhoon, continued from Page 13

There are many on-going efforts by researchers in the community as well as internal efforts at JTWC aimed at meeting this challenge. Computer programs aimed specifically at meeting demand for improved intensity forecast accuracy are being developed by researchers and evaluated at JTWC. Also, as NWP model resolution increases, the accuracy of intensity forecasts by these models is expected to increase.

Tropical cyclone reconnaissance and forecasting have progressed significantly in the past half-century, and the JTWC remains at the forefront in incorporating new technology and resources to continually improve support.

Behind all these efforts are people – the outstanding performers at JTWC, the Navy and Air Force personnel across the Pacific who support our reconnaissance and forecasting functions, and the researchers and programmers, who help develop our knowledge base and tool kit to better forecast tropical cyclones.

Without an integrated effort, the challenging task of locating and forecasting the movement and structure of tropical cyclones would be considerably more difficult. The entire TC community will continue to focus all available science and technology on providing the best possible support to you, our customers, who stand in harm's way. ♡



Senior Airman Sarah Smith

11th OWS, Elmendorf AFB, Alaska
Job Title: Theater Weather Forecaster
Years in Service: 2

Hometown: Hay Springs, Neb.

Hobbies: Hiking, Running

Reason Joined the Air Force: To further my education and have unique experiences.

Personal Motto: Thank God every morning that you have something to do that must be done, whether you like it or not, and do it to the best of your ability.

Most Memorable AFW Experience: Flying in a UH-60 and setting up weather equipment in a simulated Army exercise with the Combat Weather Team at Ft. Wainwright, Alaska.

Major Accomplishments: Smith was a graduate from the first Initial Skills Course under the newly reengineered

weather career field. She arrived at the 11th OWS in late February 2000 and was enrolled in the new ten-volume CDCs, which she completed in only ten months, with a remarkable average of 90%. She garnered BTZ honors in 2001 and received her 5-level paperwork a full year ahead of the average. Sarah is now fully certified in all aspects of the 11th OWS operational posture.

WEATHER WARRIORS

Airman 1st Class Tiffany Perone

28th OWS, Shaw AFB, S.C.

Job Title: Apprentice, Weather Crew Operations

Years in Service: 2

Hometown: Carriere, Miss.

Family Status: Married to Edward Perone

Hobbies: Softball, Swimming, active in unit activities

Reason Joined the Air Force: I knew I wanted to go into the military, but was having trouble deciding which branch was the best for me. My grandfather decided that for me when an Army recruiter called. He told him I "wasn't there and not to call back."

The next day we went to see the Air Force recruiter in Biloxi, Miss. I'm glad my grandpa did that for me. I signed the dotted line and haven't had a regret since.

Personal Motto: You live, you learn

Most Memorable AFW Experience: I think the experience that sticks out in my mind the most is when my squadron commander, Col. Davis, arrived in the operations center. He announced to everyone on my flight I had passed my last CDC end of course test. I was so thrilled that I didn't have to do anymore, but finding out I was the very first forecaster in the command to finish their CDCs, made me proud, especially since so many people graduated from forecaster school ahead of me. I set my goal and followed through, for that I will always be proud.



SALUTES

Retirements

Lt. Col. Justin Culkowski, 621st AMOS, McGuire AFB, N.J.
Maj. Bryan Logie, 15th ASOS, Ft. Stewart, Ga.
Senior Master Sgt. Kim Van Vleet, 62nd OSS/OSW, McChord AFB, Wash.
Master Sgt. William Dennis Jr., Det. 11, 7th WS, Heidelberg, Germany
Master Sgt. Allan Easey, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Wanda Camacho, 15th ASOS, Ft. Stewart, Ga.
Tech. Sgt. Randall Gilless, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. David Quinn, Det. 10, 7th WS, Giebelstadt, Germany
Staff Sgt. James Tracy, HQ AFWA, Offutt AFB, Neb.

Awards and Decorations

MERITORIOUS SERVICE MEDAL

Col. Richard Clayton, HQ AFWA, Offutt AFB, Neb.
Lt. Col. David Goe, HQ AFWA, Offutt AFB, Neb.
Lt. Col. Paul Place, 20th OWS, Yokota AB, Japan
Maj. Steven Cahanin, HQ AFWA, Offutt AFB, Neb.
Maj. Michael Farrar, HQ AFWA, Offutt AFB, Neb.
Maj. Keith Hugo, HQ AFWA, Offutt AFB, Neb.
Maj. James Kratzer, HQ AFWA, Offutt AFB, Neb.
Maj. Bryan Logie, 15th ASOS, Ft. Stewart, Ga.
Maj. John Millhouse, HQ AFWA, Offutt AFB, Neb.
Maj. Eric Wyss, HQ AFWA, Offutt AFB, Neb.
Capt. Christopher Stock, HQ AFWA, Offutt AFB, Neb.
Senior Master Sgt. Jeffrey Kallas, HQ AFWA, Offutt AFB, Neb.
Senior Master Sgt. Kim Van Vleet, 62nd OSS/OSW, McChord AFB, Wash.
Master Sgt. Sylvia Edler, 15th ASOS, Hunter AAF, Ga.
Master Sgt. Barry Hastings, HQ AFWA, Offutt AFB, Neb.

Master Sgt. Robert Hirl, 20th OWS, Yokota AB, Japan
Master Sgt. Sam Kline, 15th OWS/WXC, Scott AFB, Ill.
Master Sgt. David Rose, HQ AMC/DOW, Scott AFB, Ill. (3rd OLC)
Master Sgt. Robert Steenburgh, 20th OWS, Yokota AB, Japan
Tech. Sgt. Craig Sechrest, HQ AFWA, Offutt AFB, Neb.

AIR RESERVE FORCES MERITORIOUS SERVICE MEDAL

Tech. Sgt. Terry Pollard, 165th WF, Louisville, Ky.
Tech. Sgt. Candace Pursel, 156th WF, Charlotte, N.C.
Staff Sgt. Steven Cole, 156th WF, Charlotte, N.C.
Senior Airman Stephanie Brooks, 156th WF, Charlotte, N.C.
Senior Airman Matthew Henline, 104th WF, Baltimore, Md.

AIR FORCE COMMENDATION MEDAL

Capt. John Crane, HQ AFWA, Offutt AFB, Neb.
Capt. Matthew Doggett, HQ AFWA, Offutt AFB, Neb.
Capt. Jonathan Thompson, HQ AFWA, Offutt AFB, Neb.
1st Lt. Jeffrey Hoffmann, 104th WF, Baltimore, Md.
1st Lt. Ryan Knapp, HQ AFWA, Offutt AFB, Neb.
2nd Lt. Joseph Ingram, 104th WF, Baltimore, Md.
2nd Lt. Myron Whitmore, 104th WF, Baltimore, Md.
Senior Master Sgt. Robert Thomas, 104th WF, Baltimore, Md.
Master Sgt. David Faust, 20th OWS, Yokota AB, Japan
Master Sgt. James Gary Jr., 104th WF, Baltimore, Md. (1st OLC)
Master Sgt. David Rose, HQ AMC/DOW, Scott AFB, Ill.
Tech. Sgt. Wanda Camacho, 15th ASOS, Ft. Stewart, Ga.
Tech. Sgt. Rachel Cox, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Robert Honadle, 20th OWS, Yokota AB, Japan
Tech. Sgt. Girard Hunter, HQ AFWA, Offutt AFB, Neb.

Tech. Sgt. Wayne Lacosse, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Paul Phillips, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Patrick Showell, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Gordan Certain, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Scott Darling, Det. 3, 7th WS, Illesheim AIN, Germany
Staff Sgt. Jeff Godemann, 20th OWS, Yokota AB, Japan
Staff Sgt. David Kellam, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Cecil Kelly, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Angela Hilliardsellers, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Bart Hopkins, Det. 3, 7th WS, Illesheim AIN, Germany
Staff Sgt. Jason Noe, 104th WF, Baltimore, Md.
Staff Sgt. Joel Nonnweiler, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Joseph Robenson III, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Elias Villanueva, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. William Ward, HQ AFWA, Offutt AFB, Neb.
Senior Airman Gisela Collazohuertas, HQ AFWA, Offutt AFB, Neb.
Senior Airman Leslie Hymel, Det. 3, 7th WS, Illesheim AIN, Germany
Senior Airman Keith Maslowski, 15th OWS, Scott AFB, Ill.

ARMY COMMENDATION MEDAL

Lt. Col. Debra Carroll, 200th WF, Richmond, Va.
Maj. James Miller, 207th WF, Indianapolis, Ind.
Master Sgt. Vincent Delaney, 207th WF, Indianapolis, Ind. (2nd OLC)
Staff Sgt. Randall Brooks, Det. 2, 7th WS, Hanau, Germany
Staff Sgt. William Curley, Det. 3, 7th WS, Illesheim, Germany
Staff Sgt. Jacklyn Raynor, Det. 2, 7th WS, Hanau, Germany
Staff Sgt. Troy Walker, Det. 12, 7th WS, Vicenza AB, Italy
Senior Airman Brett Barton, Det. 2, 7th WS, Hanau, Germany

AIR FORCE ACHIEVEMENT MEDAL

1st Lt. Jennifer Meadows, 20th OWS, Yokota AB, Japan
Master Sgt. Duane Limberg, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. George Booker, HQ AFWA, Offutt AFB, Neb.
Tech. Sgt. Robert Cory II, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Daniel Ackerman, 104th WF, Baltimore, Md.
Staff Sgt. Daniel Athanasaw Jr., 200th WF, Richmond, Va.
Staff Sgt. John Cunningham, 104th WF, Baltimore, Md. (1st OLC)
Staff Sgt. James Dixon, 20th OWS, Yokota AB, Japan
Staff Sgt. Rickie Davis Jr., 57th OSS/OSW, Nellis AFB, Nev.
Staff Sgt. Shawn Durkin, 104 WF, Baltimore, Md. (2nd OLC)
Staff Sgt. Kyle Gayan, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Daryl Gibson, 200th WF, Richmond, Va.
Staff Sgt. Jamie Peralta, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Leticia Peterson, HQ AFWA, Offutt AFB, Neb.
Staff Sgt. Jeffrey Schultz, HQ AFWA, Offutt AFB, Neb.
Senior Airman Bradley Cogdill, HQ AFWA, Offutt AFB, Neb.
Senior Airman Samir Fahoum, 15th ASOS, Ft. Stewart, Ga.
Senior Airman Michael Main, HQ AFWA, Offutt AFB, Neb.
Senior Airman Patrick Mudimbi, HQ AFWA, Offutt AFB, Neb.
Senior Airman Justin Mulholland, 15th OWS, Scott AFB, Ill.
Senior Airman James Perkins, HQ AFWA, Offutt AFB, Neb.
Airman 1st Class William Benford, HQ AFWA, Offutt AFB, Neb.
Airman 1st Class Kawain Brown, 15th ASOS, Ft. Stewart, Ga.

ARMY ACHIEVEMENT MEDAL

Master Sgt. John Cobb, 207th WF, Indianapolis, Ind.
Staff Sgt. Lowell Ivy, 200th WF, Indianapolis, Ind.
Airman 1st Class Christine Keeley, Det. 9, 7th WS, Hohenfels, Germany

Education

WEATHER CRAFTSMAN COURSE

Senior Master Sgt. Michael Bennett, 125th WF, Tulsa, Okla.

Staff Sgt. Terrill Allies, 110th WF, St. Louis, Mo.

Staff Sgt. James Brown, 45th WS, Cape Canaveral AFS, Fla.

Staff Sgt. James Clark, 314th OSS, Little Rock AFB, Ark.

Staff Sgt. Staci Coleman, Det. 10, 7th WS, Giebelstadt, Germany

Staff Sgt. David Elliot, Det. 3, 7th WS, Illesheim AIN, Germany

Staff Sgt. Travis Harrington, 1st WS, Ft. Lewis, Wash.

Staff Sgt. Penelope Hatton, 7th OSW, Dyess AFB, Texas

Staff Sgt. Steven Ketterhagen, 126th Weather Flight, Milwaukee, Wis.

Staff Sgt. John Lee, Det. 3, 10th CWS, Ft. Carson, Colo.

Staff Sgt. David Mack, Det. 2, 10th CWS, Ft. Campbell, Ky.

Staff Sgt. Lois Marin, 3rd OSS, Elmendorf AFB, Alaska

Staff Sgt. Robert Martinez, 60th OSW, Travis AFB, Calif.

Staff Sgt. Jason Noe, 104th WF, Md.

Staff Sgt. Stephen Obar, 46th WS/CC, Eglin AFB, Fla.

Staff Sgt. Lara Owczarski, 116th WF, Camp Murray, Wash.

Staff Sgt. Clinton Presley, 78th OSS, Robins AFB, Ga.

Staff Sgt. Jeremy Reynolds, 71th OSS, Vance AFB, Okla.

Staff Sgt. Jennifer Shields, 75th OSS/OSW, Hill AFB, Utah

Staff Sgt. Carol Sweatt, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. Joshua Turnier, 355th OSS/OSW, Davis-Monthan AFB, Ariz.

TROPICAL WEATHER ANALYSIS AND FORECASTING

Staff Sgt. Rosswald Guevarra, 14th OSW, Columbus AFB, Miss.

Staff Sgt. Dwayne Klinzmann Jr., 17th OWS, Hickam AFB, Hawaii

Staff Sgt. Donna Nowalski, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. Lanny Parker, (USMC), Twenty Nine Palms MCA, Calif.

FORECASTER COURSE

Staff Sgt. Malik Barnes, 412th OSS, Edwards AFB, Calif.

Staff Sgt. Cynthia Hohalek-Jurgens, 18th WS, Ft.

Bragg AIN, N.C.

Staff Sgt. James Moullet, 21st ASOS/ASW, Ft. Polk AIN, La.

Staff Sgt. Patrick Gray, 35th OSS, Misawa AB, Japan

Staff Sgt. Mark Stover, 1st WS, Ft. Lewis, Wash.

Senior Airman Gary Brooks, 28th OSS/OSW, Ellsworth AFB, S.D.

Senior Airman Regan Leighton, HQ AFWA, Offutt AFB, Neb.

Senior Airman Joshua Lewis, Det. 5, 10th CWS, Ft. Bragg AIN, N.C.

Senior Airman Gerald Mcpherson, 509th OSS/OSW, Whiteman AFB, Mo.

Senior Airman Matthew Myers, HQ AFWA, Offutt AFB, Neb.

Senior Airman Scott Spinka, 195th WF Channel Islands ANGS, Calif.

Senior Airman Stanley, 62nd OSS, McChord AFB, Wash.

Senior Airman Darroll Walsh, 305th OSS, McGuire AFB, N.J.

Senior Airman Angela Zampich, 19th ASOS, Ft. Campbell AIN, Ky.

Airman 1st Class Lethal Coe, Mountain Home AFB, Idaho

MST1 Ray Terry, CG, Airsta Clearwater

ANG COMBAT WEATHER COURSE

Master Sgt. Rosario, 152nd AOF, Syracuse, N.Y.

Staff Sgt. Donald Wilhelm, 107th WF, Selfridge ANGB, Mich.

Senior Airman Eric Lawrence, 207th WF, Indianapolis, Ind.

Senior Airman Thomas Richards, 121st WF, Andrews AFB, Md.

Airman 1st Class Jacob Darling, 208th WF, Minneapolis, Minn.

WRTC FOT

Staff Sgt. Rodney Webber Jr., 146th WF, Coraopolis, Pa.

Staff Sgt. Arianna Hendricksen, 203rd WF, Anneville, Pa.

Senior Airman Nathaniel Gillock, 203rd WF, Anneville, Pa.

AIRMAN LEADERSHIP SCHOOL

Staff Sgt. Donna Nowalski, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. Roxann Taylor, HQ AFWA, Offutt AFB, Neb.

Senior Airman Richelle Bigata, 57th OSS/OSW, Nellis AFB, Nev. (Distinguished Graduate)

Senior Airman Rory Kling, 2nd OSS/OSW, Barksdale AFB, La.

Senior Airman John Rivera, 9th OSS/OSW, Beale AFB, Calif.

NCO ACADEMY

Tech Sgt. Kelly McGee, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. Bryan Carlson, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. James George, HQ AFWA, Offutt AFB, Neb.

Staff Sgt. Patrick Walker, HQ AFWA, Offutt AFB, Neb.

SENIOR NONCOMMISSIONED OFFICER ACADEMY

Master Sgt. Lawrence Gross, HQ AMC/DOW, Scott AFB, Ill.

Promotions

Promotions to:

Lieutenant Colonel

Thomas Lambert, HQ AMC/DOW, Scott AFB, Ill.

Chief Master Sergeant:

Bob Haines, 76th OSS/OSW, Kelly AFB, Texas

ANG Promotions

Promotion to:

Colonel

Fred Johnson, HQ USAF/XOW-CGG, Pentagon

Captain

Kimberly Buttrick, 202th WF, Otis ANGB, Mass.

Danielle Lewis, 7th WS/DOY, Heidelberg, Germany

Master Sergeant

Richard Furman, 165th WF, Louisville, Ky.

Andrea Preston, 204th WF, McGuire AFB, N.J.

Technical Sergeant

Gregory Schmidt, 202th WF, Otis ANGB, Mass.

Paul Wendt, 110th WF, St Louis, Mo.

Staff Sergeant

Melani Hurst, 15th ASOS, Ft. Stewart, Ga.

Malvin Johnson, 200th WF, Richmond, Va.

Amy Whiteman, 204th WF, McGuire AFB, N.J.

Coin Corner



Capt. Robert Wacker, HQ AFWA, Offutt AFB, Neb., earned his coin as the Chief of METSAT Requirements Branch. His efforts directly impact AFWA support to National Programs by ensuring all AFW's METSAT requirements are maintained to support warfighters around the globe.



Kerry Joens, HQ AFWA, Offutt AFB, Neb., earned his coin for his work in the development of AFMAN 15-135 and AFMAN 15-129. He was identified by the AFW/XOWP staff as a "special contributor" to the development of AFMAN 15-135.



Karen Harder-Sittel, HQ AFWA, Offutt AFB, Neb., received her chief's coin for her instrumental work creating upper-level hazard forecasts for the mission returning 24 aircrew members from their detention on Hainan Island.

