

# Observer

*The Magazine for Air Force Weather*

Mar/Apr 03



## **Solar X-ray Imager**

**SXI Ready to  
Detect Solar Storms**

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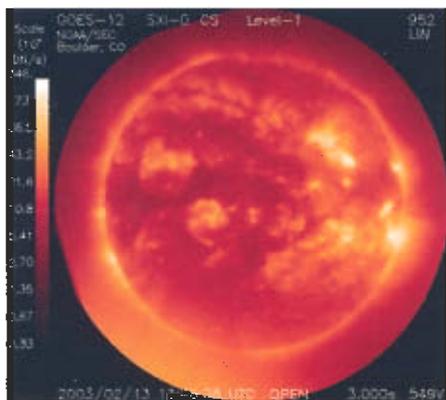
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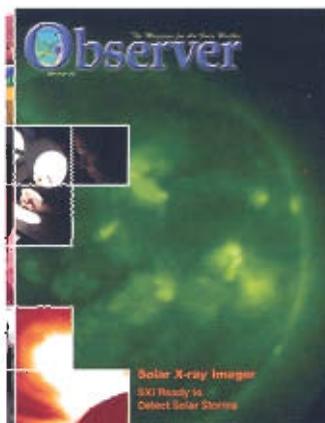
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## On the Cover:

A coronal structure image from the nation's newest environmental satellite, GOES-12, equipped with an advanced Solar X-ray Imager that supplies real-time solar images. SXI is ready for operations according to NOAA and NASA, and enables scientists to detect solar storms that could impact billions of dollars worth of assets. See page 14 for more information on SXI. (Image courtesy of the National Geophysical Data Center, NOAA)



## Observer

**AIR FORCE  
DIRECTOR OF WEATHER**  
Brig. Gen. David L. Johnson

**AIR FORCE WEATHER  
AGENCY COMMANDER**  
Col. Charles L. Benson, Jr.

**PUBLIC AFFAIRS**  
Paige D. Hughes  
Jodie A. Grigsby  
Christy L. Harding

**OBSERVER EDITOR**  
Master Sgt. Miles Brown

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

CMCL: (402) 294-3115  
DSN: 271-3115

Observer E-mail:  
[Observer@afwa.af.mil](mailto:Observer@afwa.af.mil)

AFW Public Access Site:  
<https://afweather.afwa.af.mil/>

# Weather on Display

**By Paige Hughes**  
Air Force Weather  
Public Affairs



Photo by Paige Hughes

Volunteers working the Air Force Weather booth at the American Meteorology Society conference, Long Beach, Calif., complete the final touches on the display. The AMS conference is geared toward weather professionals, attracting meteorologists from all over the world.

**A**t least seven times a year, all around the country, the Air Force Weather exhibit is set up to promote awareness and support for the career field. The display, which can be configured to fit a 100 sq. ft.

space up to a 400 sq. ft. space, is manned with Air Force Weather's finest individuals who volunteer to work the long hours. Their job for the exhibit is to capture the attention of would-be weather recruits and to inform the general public of Air Force Weather's vital role in the defense of this country.

The exhibit year for the AFW Display kicked off the first week in February at the American Meteorological Society's annual meeting in Long Beach, Calif. During that same week, a smaller display was up and running at the Government on Display, Mall of America,

**See Display, page 10**



Photo by Jodie Grigsby

Senior Airman Allen Thill, 208th Weather Flight (ANG), St. Paul, Minn., talks to a young person about a career in Air Force Weather during the Government on Display Exhibition, held at the Mall of America, Minneapolis, Minn.

# Chief's Mentoring: Career Planning Always Good Idea

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

Not many of us plan our entire career ahead of time, but you may want to do just that to ensure peace of mind. In this past year, you probably saw numerous separations and retirements and watched people work through the separation process. As these people prepared to separate or retire, I noticed a lot of these smart, capable, and reliable people scramble for education and training as they prepared to start a new life in the civilian sector and I saw the look of fear as they faced their civilian life.

It does not matter whether you plan to stay in the military or move on to civilian employment, you should plan your career or careers ahead so you can transition smoothly. So let's look at how you can accomplish this task easily.

You must first decide what you and your family want from your current job in the Air Force. Do you want to get that government retirement check and benefits? Just stay in long enough to get education and experience? Do you just want to travel a bit before settling down? We all know the military life is very different and difficult, and it takes special people and families to deal with the changes, moves, deployments, and

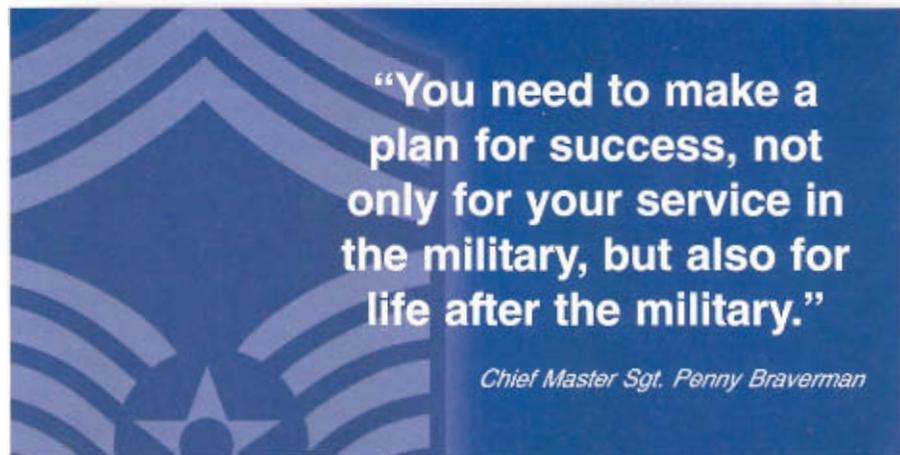
issues that occur throughout a career. Once you decide what you want from the military, you need to make a plan for success, not only for your service in the military, but also for life after the military.

No matter which road you travel in life, there are a couple of general rules that can apply to your career choice. You should set career goals for the short and long term, keeping in mind a few areas that may be key to a successful career. You may consider areas such as:

- *What career area do you want to work in?*
- *How about a second career in a different area?*
- *How do you define success?*
- *Do you need more education – a degree, technical training, etc?*
- *How will you live when you retire?*
- *Do you know what your income, benefits, health insurance will be after retirement?*
- *Where do you plan to eventually settle down?*
- *How does your family play into all your decisions?*

such as work environment, accessibility to classes or courses you need, promotion rates, family issues, etc. Establishing your timeline is just a first blush on what you feel you can achieve and it is your starting point of your career. You may need to adjust your timeline to reflect unforeseen circumstances, but it is best to try to keep as close to it as possible, especially in the short term.

The last step in the process is to reevaluate your goals. To most people, evaluating their goals may seem an easy task, but most people will find re-looking at their goals is actually much harder than it appears. Check short-term goals first – your adjustments in the short-term areas should be minimal to none, because this is the next one to five years. Your long-term goals may require annual adjustments based on where you are in your life and plans. Even though your goals may need adjusting, you should try to keep these adjustments to a minimum – it helps to ensure you stick to your plan as closely as possible.



These are but a few areas to consider. You should start by making a similar list of questions tailored to your career, including the answers that best address you and your family's goals. Once you have the answers, you may want to arrange them based on the importance you assign each, say from the most important or must accomplish to the least important.

The next step in the process is to set estimated time lines into your career plan for completion of your goals. Be realistic and consider factors

You will find having goals to work toward will help making critical life decisions easier. Your money, education, family, and work expectations will also fall into place as you work toward your goals. The satisfaction you get when you achieve your highest expectations is one of the greatest feelings of fulfillment. This fulfillment and sense of pride in your work will be evident to all around you, from family and friends to your coworkers and bosses. The best advice I can give to you is, "plan ahead and excel!" ☺

# AFWA

## Perspective:

# Military Still Trusted to “Do the Right Thing”

By Col. Charles L. Benson, Jr.  
AFWA Commander

Harvard University's Institute of Politics conducted an October 2002 poll of 1,200 undergraduates. The results of the poll were reported in a recent edition of *The Wall Street Journal*. Nine out of ten respondents described themselves as “very” or “somewhat” patriotic. The results were rewarding ... and sobering ... for those who serve in the Armed Forces.

The students listed the military as their most trusted institution. Seventy percent indicated they trusted the military to **do the right thing** “all or most of the time.” The military was followed in trustworthiness by the President (58 percent) and Congress (52 percent.) Ironically, the media came in dead last at just 12 percent.

For those of us serving our nation, including every military and civilian member serving in Air Force Weather, these results should be a source of encouragement. The results also bring an obligation – to sustain our reputation to “do the right thing.”

“Do the right thing” is at the heart of enlisted and officer training, including professional military education. Even our Air Force core values start with *integrity first*, in other words, “do the right thing.” While this value system is deeply ingrained in our military culture, we may encounter occasions when doing the right thing may not be a priority for some reason. Here are some factors that may contribute to these situations.

### Personal Gain or Convenience

There are situations where the temptation for personal gain or convenience can overwhelm a person's good judgment. There are plenty of examples of court-martial convictions for people who attempted to gain a few extra dollars through fraudulent travel voucher claims. There are other circumstances we may face that are more subtle. Using a government copier to make copies of documents unrelated to Air Force business is convenient, but it can have serious consequences. Besides an improper use of government resources, subordinates observing such practices may begin to question your judgment – and this

cost is far more expensive than saving a couple of dollars in commercial copying charges.

The famous German philosopher, Immanuel Kant, even went as far as to claim an act can't be considered moral if its motive is for personal gain. The bottom line – ensure our decisions are based on service to the Air Force, not personal gain or convenience.

### Desire To Remain Popular

There are occasions when doing the right thing may not be popular with your peers. Under the pressure of the basic human desire to be liked, it is easy to “go with the flow,” even if we know “going with the flow” isn't right. Be known as the person who stands for fair play, even if it isn't popular with your peers. Be the person to speak up and say “We owe them the courtesy of coordination” if your office is discussing a plan affecting another unit or organization.

In its worst form, the desire to remain popular can manifest itself in cronyism – relationships built around keeping your close friends happy. Over time, such an approach will indeed keep close friends happy ... but others will see right through this tactic, and it can become a liability in dealing with others. Keeping friends happy at the expense of doing the right thing can lead to resentment and permanent loss of trust by our subordinates – so be careful.

### “Boss Said To Do It” Syndrome

Serving in the military means we obey the direction of the officers, NCOs and civilian leadership in our chain of command. When we receive direction, presuming it is legal, we carry out our tasks to get the job done. However, there may be occasions when new information has changed the original equation our superior(s) used in making a decision. In such cases, it would be irresponsible not to inform the chain of command of the new information.

Let's consider a simple hypothetical case. An Air Force wing commander gives the okay to launch a high-priority mission. Just before takeoff, maintenance personnel see fuel leaking profusely from the aircraft. I doubt the operations group commander would respond by saying “The boss said to launch this airplane, so we're launching it.” In this example, we all know the takeoff would be postponed if fuel was observed leaking from the aircraft. Proceeding with the launch may not only destroy the aircraft at a great monetary loss, it could also threaten the lives of the aircrew.

Every day experiences may not always be so clear-cut. If new information has entered a situation that brings into question the legality, safety implications, or operational assumptions used in formulating direction you've received, then seriously consider informing your chain of command. Do it professionally, and make sure you have your facts straight. Even if your inputs don't change the original decision, you can sleep well knowing you did all you could. If your actions do change the thrust of an original deci-

See AFWA, next page

sion and prevent disaster. I suspect your chain of command would be deeply grateful!

### **Compromise Approach To Making Tough Decisions**

The art of compromise has its value. Compromise is perhaps most common in the worlds of politics and business, where decisions sometimes are made on not just a yes/no basis, but on a matter of degree – how much money to appropriate, how many stores to build, etc. But compromise is not the answer for every decision. In combat operations, compromise can get people killed. There are still yes/no decisions that must be made. There are still right vs. wrong situations in the world. When a time for one of these decisions comes along, be prepared to make it. If you don't, subordinates may figure out your approach is to "split the difference" to avoid making a tough call.

A cousin of compromise is the deliberate use of vague or evasive communications to avoid making, or keeping, a commitment. We all know the feeling we get when we follow-up on a concrete matter with someone, only to sense the other party isn't being straight with us. In the military, there is little room for double meanings in what we say or **write**. Be someone who looks people in the eye. When you **make** a commitment, keep it. As our current Commander in Chief, President George W. Bush, said **before** he took office, "Our administration will be one in **which** a promise made is a promise kept."

None of us are perfect, but staying cognizant of these four factors may make it easier to put ourselves in a position to "do the right thing." When your career is over, you can rest assured you served your country with honor. You can take some comfort in knowing you dealt fairly with people – even when you disagreed with them. You will have set an example your family will be proud of, and one both your subordinates and superiors respect.

You can also pay a price for doing the right thing. You may be accused of "not playing the game." You may lose some friends along the way (if you do lose friends for doing what is right, they probably weren't true friends anyway).

One of our country's greatest Presidents, Abraham Lincoln, knew this all too well. He was severely criticized during the Civil War years – and was denounced by getting compared to almost everything from a clown to a monster. He acknowledged the strain of making principled decisions was not easy. In 1864, he said, "I desire to so conduct the affairs of this Administration that if, at the end, when I come to lay down the reins of power, I have lost every friend on earth, I shall have at least one friend left, and that friend shall be deep down inside of me."

I'm sure the Harvard poll will be taken again this October, and who knows – perhaps public confidence in America's military will be higher than 70 percent by then.

And maybe, just maybe, the higher rating is because some of the respondents knew a military or civilian member in Air Force Weather, who could always be trusted to "do the right thing." ♪



### **XO Airman of the Year**

*Senior Airman Adam Finley, a database programmer for the Air Force Weather Agency, diagrams database flow with Tech Sgt. Rick Edwards. Finley is the Air Force Deputy Chief of Staff for Air and Space Operations' 2002 Airman of the Year. Lt. Gen. Ronald E. Keys, Air Force XO, presented the award to Finley during a recent visit to Offutt AFB. Some of Finley's accomplishments include: developing a database structure and interface for the Special Sensor Microwave Satellite Imager and Sounder project which increased storage and processing of data by 30 percent; correcting flawed space weather data storage routines to reduce processor utilization by 75 percent and storage requirement by more than 97 percent; and supporting regional Special Olympics, Offutt's Sub-for-Santa, and earning his CCAF degree.*

# ACC Weather Operations: Operations Support, Manning Top Priority List

**By Col. Mark Welshinger**  
*Chief, HQ ACC Weather Operations Division*

Support to Operations NOBLE EAGLE and ENDURING FREEDOM, along with improving manning at Air Combat Command weather units, continue to be the command's top weather priorities. Of course, these two priorities are not mutually exclusive.

The ACC contributions to ONE/OEF, from Operational Weather Squadrons, Combat Weather Teams, and Guard and Reserve forces continue to be critical to meeting mission requirements. When ONE/OEF commenced, the dramatic increases in workload placed a great deal of stress on some stateside weather operations, so both Guard and Reserve personnel quickly provided essential support to meet the shortfall. As the conflict continued, Guard and Reserve personnel began filling forward-deployed taskings, providing outstanding weather support to units throughout Southwest Asia.

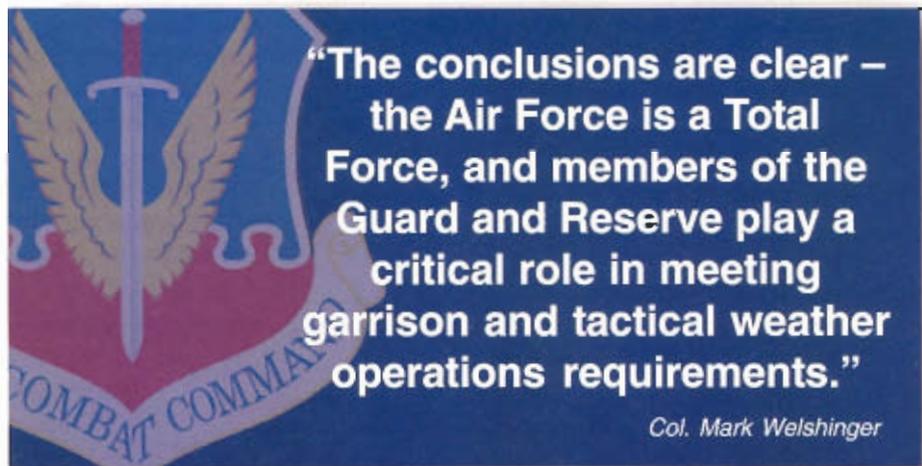
As of the writing of this article, the numbers of Guard and Reserve weather forces involved in ONE/OEF were significant: 46 Guard and 16 Reserve personnel were activated to support the Global War on Terrorism. Of these, 16 Guard personnel were still mobilized (for their second year) at the 28th OWS, five more were forward deployed on 90-day rotations in support of OEF, and two Reservists were still activated.

There is a continuing need for the Total Force effort: Six Guard units have been tasked for 14-day rotations to support NORAD's Western Air Defense Sector, and we continue to use Guard volunteers for 90-day rotations in

support of OEF and Operation SOUTHERN WATCH. Also, as the buildup of forces continues throughout the CENTCOM AOR, we are in the process of mobilizing additional Guard and Reserve weather forces. The conclusions are clear – the Air Force is a Total Force, and members of the Guard and Reserve play a critical role in meeting garrison and tactical weather operations requirements.

As far as weather manning in ACC, we continue to see improvements in this area. One of our goals is to get each Combat Weather Team up to the worldwide average of 85 percent in 5-skill level personnel. Along with normal assignment actions, we are working the 5-skill level manning improvements by command leveling weather technicians from the ACC Operational Weather Squadrons to CWTs.

Command leveling weather technicians from OWSs to CWTs will be an ongoing process. As AFPC works normal assignment actions, moving personnel from OWSs to CWTs, personnel moving to their first CWT must attend the Air Education and Training Center's Combat Weather Team Operations Course. However, these normal assignment actions do not always fill all of the seats in the CWTOC. AFW does not want to turn in any CWTOC seats due to CWT manning improvements that still need to



be realized. Command leveling actions from OWSs to CWTs provides a viable avenue to both fill all of the CWTOC seats and improve CWT manning. ACC, with three CONUS OWSs, plays a vital role in command leveling actions.

Another area we are focusing on is 7-skill level manning at our OWSs. With the implementation of the new Air Force Manpower Standard, 7-skill level authorizations have increased at our three OWSs. With these increased authorizations, we have already begun to see an improvement in 7-skill level manning through command of entitlement actions.

The implementation of the AFMS and the flow of 5-skill level personnel out of our OWSs to CWTs are all part of Air Force Weather reengineering. In ACC, we are doing

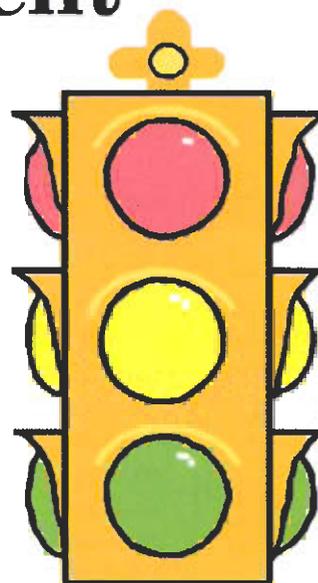
*See ACC, page 18*

# Use of Government Resources Test

When is use of government resources authorized or not permitted?

**You take the test!**

By Lt. Col. Kevin Witte  
AFWA Inspector General



*Personal Use - Not related to the mission (Not authorized)*

*Personal Use - Supportive to the mission (Permitted with supervisor's approval)*

*Official Use - Directly related to the mission (Permitted)*

Let's talk about ethics and the proper use of government resources. Most of us have known for a long time that we may use government resources only for authorized purposes. However, most of us have assumed that the only authorized purposes are the green light of official use – use of resources directly related to the accomplishment of the mission.

Certain personal uses may be authorized; however, these uses are very limited, and so we have the cautionary yellow light – personal use of resources in support of mission, with supervisor's permission. These exceptions exist to help make people more efficient at work. In other words, the government recognizes that it is often impossible for personnel to totally ignore their personal matters during the workday. It is much less disruptive to allow an employee to make a car maintenance appointment from their desk, than leaving the workplace to find a public phone.

Of course, the bulk of personal use is the red light – not authorized. Let's look more closely at when personal use may be authorized. Personal use of government resources may be authorized by an employee's supervisor, (assuming the supervisor is above a GS-11 or a commissioned military officer) if it is supportive of the mission.

When deciding if the personal use of government resources is authorized or not, a balance test is usually involved. The value to the Government must be weighed against the costs to the Government. Additional factors, such as susceptibility of abuse, visibility, and inappropriateness

must also be considered.

The bottom line – for any use of government resources to be authorized, it must be for the benefit of the Government. For more questions on this subject, see your supervisor, contact your base ethics officer, or see your local Inspector General. ♪

## The Test:

1. The use does not adversely affect the performance of official duties by the employee or the organization
2. The use is of reasonable duration and frequency
3. The use is made only during the employee's personal time, such as after duty hours
4. The use serves a legitimate public interest (such as reducing disruptions to the workplace, enhancing professional skills, supporting DoD community relations)
5. The use does not reflect adversely on the DoD or violate a statute or instruction
6. The use creates no significant additional cost to the DoD

## Personal use of government resources guiding principles:

**Rule #1:** Government resources are for the benefit of the Government.

**Rule #2:** Sometimes, the Government benefits by allowing its employees to use Government resources. Some approved benefits may include:

- Makes employees more efficient
- Improves employee morale
- Increases public's confidence in its officials

# New TAF and Metrics Implementation: “Coming Soon to an Installation Near You”

**Master Sgt. Larry Groff**  
*Career Field Readiness Manager*

Over the past several years the weather career field has undergone major changes in the way it does business. As we near the end of the reengineering path, the time to reengineer Air Force Weather metrics is upon us. When most people hear the word metrics, they automatically have flashbacks to the days of the Quality Air Force program, which involved the additional duty of quality controlling weather observations and Terminal Aerodrome Forecasts by hand – I remember those days, do you? Today’s modern technology can take the pain out of completing the metrics process and eliminate manual procedures through automation.

For more than ten years, AFW has struggled to define what and how we need to measure. This past year, Senior AFW leadership took a hard look at how we accomplished metrics in the past and what benefits future metrics should provide the career field. A new plan for metrics developed slowly which not only affects metrics but how AFW completes and issues a TAF. As we approach implementation of the new AFW metrics program, Brig. Gen. David L. Johnson, the Air Force director of weather, wants everyone to have an understanding of both the TAF and metrics programs so the transition is easier for the career field. The revised AFI 15-114 will be the cornerstone of AFW metrics – we’re shooting to have the regulation

change out in April 2003. Until then, this article provides a brief overview of the new TAF and metrics programs and explains the TAF changes and the three metric reporting areas – technical performance, operational effectiveness, and functional resource readiness.

## Technical Performance Reporting

### TAFVER

The general said, “The days of AFW measuring performance in forecasting 1,500 feet ceilings and three miles visibility must change – we are better than that! We’re capable of forecasting what we think will happen not what the weather category we think the operator needs to fly. Let the Operational Weather Squadron team, the OWS and CWT working together, forecast what they think will happen!”

Currently, each OWS team issues three TAFs for a 24-hour period and then the OWS team issues a new TAF every eight hours for each base – in addition, the OWS team amends each TAF to stay in the weather categories. Current metrics requires the OWS team to verify that TAF using preset weather categories as a hit or miss and management calculates a percent correct for a score based on the hits and misses.

*See Metrics, next page*

### Example of an old TAF:

```
KOFF 271818 VRB06KT 9999 SCT080 SCT250 QNH3000INS  
BECMG 1920 VRB05KT 9999 BKN080 620803 QNH2994INS  
BECMG 0506 VRB05KT 9999 FEW025 BKN090 620903 QNH3000INS T01/21Z TM08/13Z;
```

### Example of a new TAF:

```
KOFF 271818 VRB06KT 9999 SCT080 SCT250 QNH3000INS  
BECMG 1920 VRB05KT 9999 BKN080 620803 QNH2994INS  
BECMG 0506 VRB05KT 9999 FEW025 BKN090 620903 QNH3000INS T01/21Z TM08/13Z;  
281818 02Z 03020KT 21Z V3000 FG 21Z C025 TM05/20Z T05/12Z (New line)
```

*Examples of a Terminal Aerodrome Forecastnow, and a TAF as it will exist under the new Air Force Weather Metrics.*

In the future, a TAF is valid for a 48-hour period and will be scored hourly for accuracy. Once the program starts, the TAF will never be "issued" again as we know it today – the TAF becomes a continuous product that the OWS team updates for accuracy and timeliness to be more representative for the base or post. The format for the first 24 hours is similar to what we use today with one additional line added to code in the worst weather for the 25-48 hour of the TAF to include time of occurrence for winds (direction, speed, and gusts), ceiling, visibility and obstructions/weather, and temperature (Max and Min).

The pressure on the OWS team to amend no longer

applies because every hour the OWS team has the opportunity to improve the TAF. Before every hour the OWS team makes a determination if they can improve the ACCURACY and/or TIMELINESS of their TAF out through 48 hours or to let it ride and let the computer rollover the 24 and 48-hour line to be the next 24 and 48-hour point. If the OWS team lets the TAF ride, the computer changes the valid times and the meat of the TAF remains the same – so each hour the OWS team or computer updates a TAF that goes out to the 48-hour point.

As for metrics, we plan to measure the OWS team's performance using accuracy for every hour of the first 24 hours and for the worst weather in the 25-48 hours. This

*See Metrics, page 20*



*Photo by Jodie Grigsby*

*The Air Force Weather booth at the Government on Display Exhibition, held at the Mall of America, Minneapolis, Minn, was one of many displays. Numerous government agencies as well as all branches of the military were represented, demonstrating the commitment of all those in public service.*

**Display, continued from page 3**

Minneapolis, Minn. For the week, a combined crowd of approximately 155,000 learned the mission of Air Force Weather.

In April, the AFW display will be set-up outside at the annual Public Service Recognition Week, National Mall, Washington D.C. with an anticipated crowd of 200,000, many of whom are students. Other shows this year will include the Air Force Association meeting and the Offutt Air Force Base open house.

If you are interested in hosting the display at your public event or volunteering your time to exhibit, contact the Air Force Weather Agency office of Public Affairs at (402) 232-8166. ♡

# AFWA develops new MM5 surface visibility prediction algorithm

**By Evan Kuchera**

*AFWA Technology Exploitation Branch*

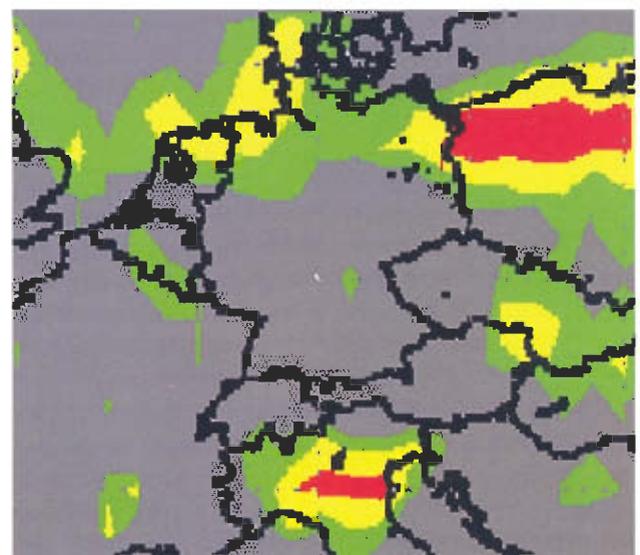
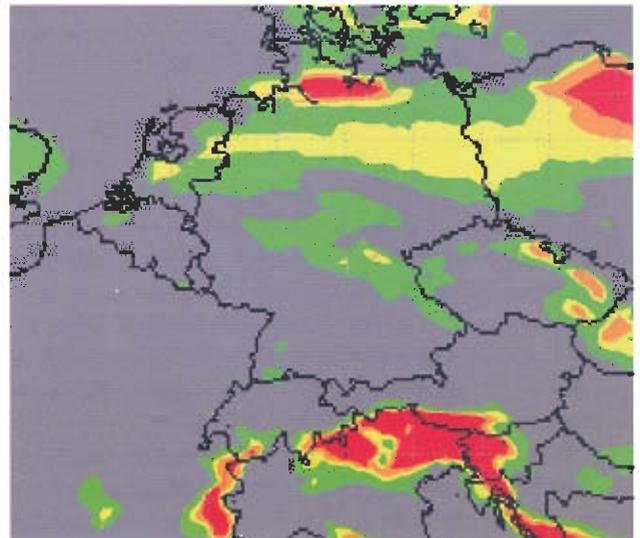
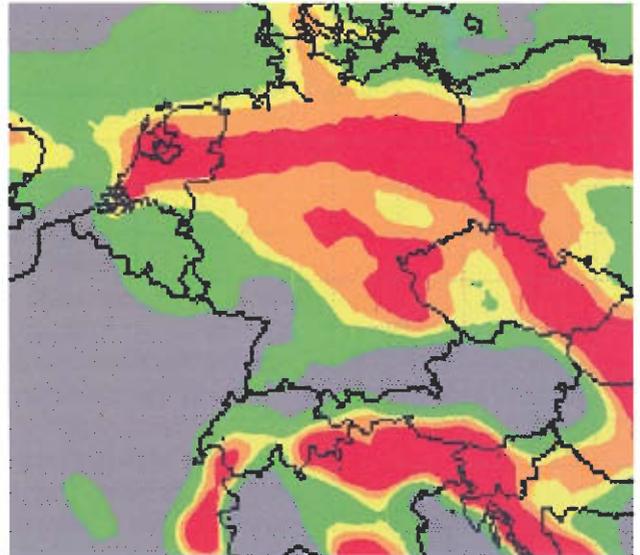
Low surface visibility can be disruptive to Air Force missions, and predicting it can prove to be quite challenging for forecasters. To assist the forecaster in this process, HQ Air Force Weather Agency's Technology Exploitation Branch has developed an improved meteorological model surface visibility algorithm. The new MM5 algorithm extracts the strengths of existing visibility algorithms and adds knowledge of synoptic meteorology to make a high quality surface visibility prediction. Long term testing over the CONUS shows the new algorithm to be a 30-50 percent improvement over existing algorithms. Qualitative testing over Japan/Korea, Alaska, and Europe also indicated the new algorithm is superior to its predecessor.

The new algorithm starts with a regression equation that provides a visibility value based on surface relative humidity – high relative humidity equals low visibility. In addition, other meteorological parameters examined are: low-level wind shear, mid-level cloud amount, boundary layer humidity, near-surface vertical motion, rain, and snow. The results of these evaluations are used to either increase or decrease the initial visibility forecast. While this new algorithm takes into account numerous visibility-impacting factors, it is not yet sophisticated enough to incorporate the effects of dust, smoke, or blowing snow.

The Joint Air Force and Army Weather Information Network surface visibility visualizations are not the only products benefiting from this new algorithm. You can see improvements in a host of products, including TAWS/NOWS Reachback, IGRADS' User-Defined Meteograms and Forecast Maps (when the visibility option is selected as a parameter), Electro-Optical Meteograms, and Army Low-Level Meteograms.

The Technology Exploitation Branch continues to expand and improve the capabilities of all MM5 models and forecast products. This improved visibility algorithm is just one example AFW people pushing the technology envelope of weather forecasting and ensure our forces continue to anticipate and exploit the weather for battle. ♪

*The following AFWA MM5 forecast from Jan. 2, 2003, shows how the new algorithm is a substantial improvement upon the existing algorithm. The first image (top) is a forecast of visibility over North Central Europe using an algorithm developed at the Forecast Systems Laboratory. The second image (middle) is a forecast using the new AFWA Technology Exploitation Branch's algorithm. These forecasts are compared with the AFWA visibility observational analysis (bottom). In this example, the FSL algorithm predicted excessively large areas of low visibilities the Netherlands, Germany, the Czech Republic, and the Slovak Republic. The new algorithm created a more accurate forecast, depicting smaller areas of low visibilities observed over Central Europe that day.*



# The Future of Numerical Forecasting

**By Maj. Scott Hausman**  
*AFWA Meteorological Models*

Imagine you're a forecaster deployed to a remote bare-base location, and the only data available to you is a local observation and an occasional satellite image – not much to work with. The wing commander immediately asks for a 72-hour planning forecast for an upcoming mission. What are you going to do? What are you going to use to make your forecast? Tea leaves? In that moment, you would give anything to have a set of charts from your favorite forecast model.

Since the birth of numerical weather prediction, forecasters have increasingly become dependent on model guidance to do their jobs. It's no wonder, given the steadily improving skill of global and regional NWP models. Only the experienced forecaster seems to have the edge over an exceptionally good model. Due to this growing dependency, it's absolutely imperative that we continuously develop or acquire the best models current technology can provide.

During the 90's, we invested more than \$90 million to build state-of-the-art numerical cloud and weather forecasting capabilities, leveraging the latest atmospheric and computer science.

The first of these capabilities is the Global Theater Weather Analysis and Prediction System, which has as its forecasting core the Mesoscale Model 5. Four-times daily, GTWAPS generates high-resolution weather forecasts

for 17 different theaters of operation, covering more than 70 percent of the globe. The second capability, which is the only one of its kind, is the Cloud Depiction and Forecast System II. This system scientifically merges the output from five geostationary and six polar-orbiting satellites to produce hourly, high-resolution, global cloud analyses, i.e., the World-Wide Merged Cloud Analysis. CDFS II then uses the WWMCA to initialize the Advect Cloud model to create global cloud forecasts.

Despite the technological advances gained from these new systems, both will gradually become obsolete if we fail to regularly infuse the latest technology. Inevitably, we will lose our ability to satisfy the increasingly more stringent operational requirements levied on these systems. To keep pace with the latest science and technology, we continuously hunt for innovative techniques that are ripe for operational application.

Most recently, we integrated a new data assimilation, or forecast model initialization, system into GTWAPS. The Three-Dimensional Variational Mesoscale Data Assimilation System – the first of its kind in the DoD. This system provides a more accurate analysis for initializing MM5 by incorporating the model physics into the analysis process and significantly increasing the number of observations assimilated.

Following its implementation, for

example, the number of CONUS observations assimilated swelled to over 40,000 – a six-fold increase! This number will continue to rise as new observation types (e.g., mesonets, profilers, new satellites) become available. For instance, when the National Polar-orbiting Operational Environmental Satellite System is launched in 2008, we anticipate the amount of satellite data will increase by two orders of magnitude, providing vital observations in data-sparse or data-denied theaters of operation. Envision the potential improvements to Operation ENDURING FREEDOM forecasts if instead of having no upper-air sounding over Afghanistan to initialize MM5 we had several hundred high-quality satellite-derived soundings.

Not only are we improving the data assimilation system of GTWAPS, but the forecast model itself. In an unprecedented partnership, the research and operational communities are developing the Weather Research and Forecast model, which incorporates the latest atmospheric and computer science. This highly-efficient, portable, cloud-scale forecast model is designed for the broadest possible application so as to accelerate the transition of new technologies from research into operations.

As with GTWAPS, new sources of satellite data will also improve the cloud analysis and forecasts of CDFS II. Current satellites only sense across 20 to 30 spectral bands, or channels. CDFS II compares the different channels to diagnose cloud properties; however, the limited number of channels restricts the diagnosis. In contrast, NPOESS will provide over a thousand channels. We plan to exploit this "hyper-spectral" data in order to diagnose more detailed cloud layer and type information.

Even current satellites, however, still offer potential improvements to CDFS II. Satellite visible and infrared imagery depict clouds by varying the intensity of each pixel in an image; however, no information regarding

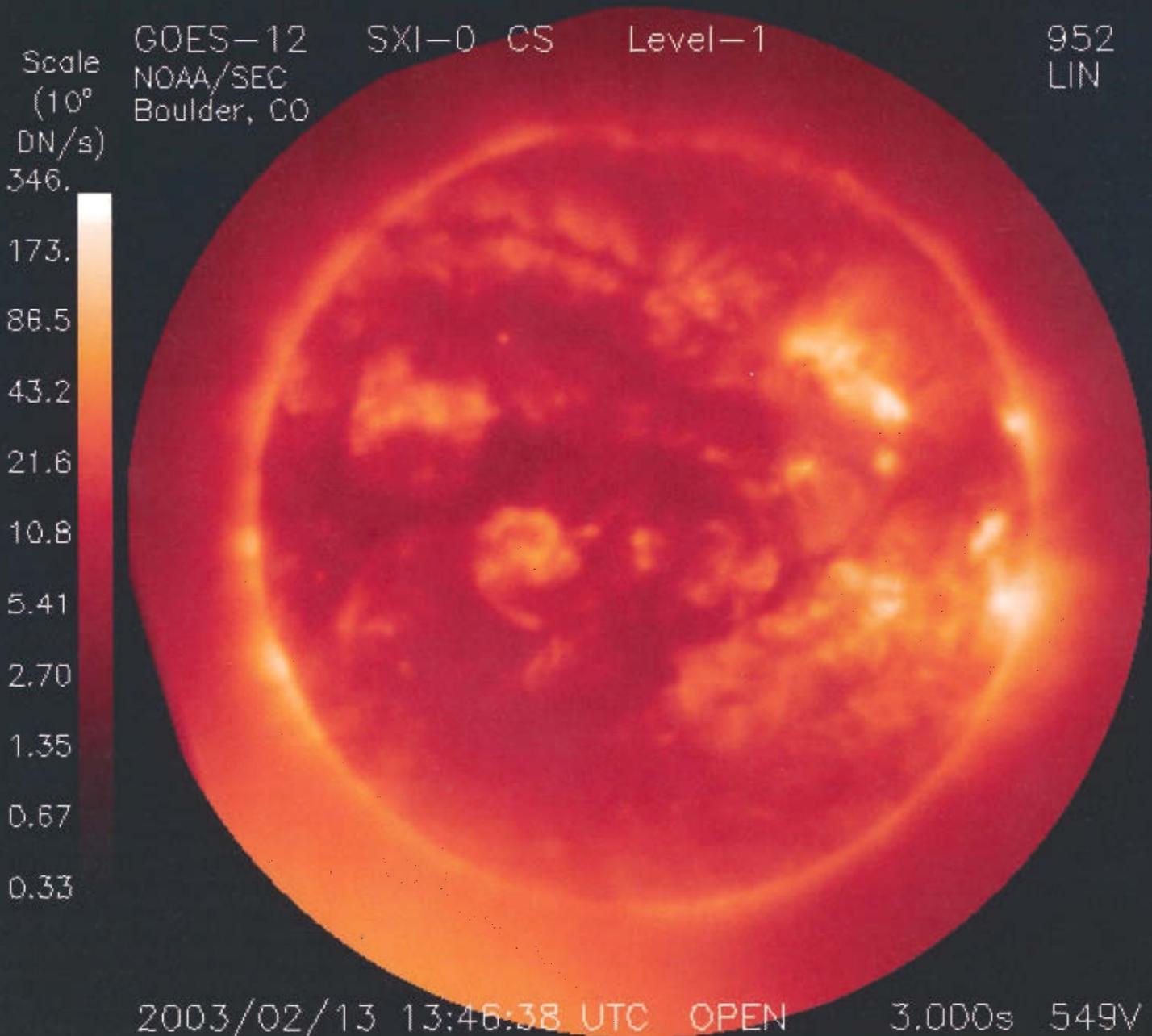
*See MM5, Page 22*



# SXI

The Nation's  
Newest  
Environmental  
Satellite  
Ready To Detect  
Solar Storms

By Pat Viets  
NOAA Public Affairs



The nation's newest environmental satellite, GOES-12, equipped with an advanced instrument for real-time solar forecasting, is ready for operations according to the Commerce Department's National Oceanic and Atmospheric Administration and NASA. The Solar X-ray Imager aboard the satellite enables scientists to detect solar storms that could impact billions of dollars worth of assets.

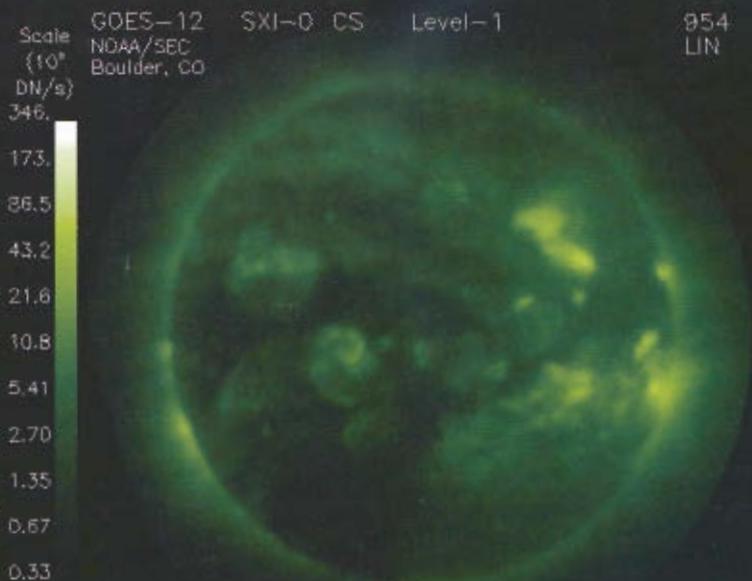
"The Solar X-ray Imager will provide the kind of improvements in space weather forecasting that satellite imagery did for tracking hurricanes," said retired Navy Vice Adm. Conrad C. Lautenbacher, Ph.D., undersecretary of commerce for oceans and atmosphere and NOAA administrator. "The Solar X-ray Imager will enable us to better protect both commercial and government assets in space and on the ground."

The instrument takes a full-disk image of the sun's atmosphere once every minute. NOAA and the U.S. Air Force will use the images to monitor and forecast the sources of space weather disturbances from the sun, enabling forecasters to forecast disturbances to Earth's space environment that can destroy satellite electronics, disrupt long-distance radio communications or surge power grids. The ability to monitor and forecast solar disturbances is valuable to operators and users of military and civilian radio and satellite communications systems, navigation systems and power networks, as well as to astronauts, high-altitude aviators and scientists.

"The SXI will detect and provide positions for 70 percent more X-ray flares than current ground observations," said Ernest Hilder, director of NOAA's Space Environment Center in Boulder, Colo. "Knowing flare longitude, a forecast can be made that would be accurate for a window of about 12 hours. Without the solar longitude of a flare, predictions of the time of maximum particle radiation can range up to 100 hours."

The military is increasingly dependent on the space environment as forces deploy across the globe in support of national interests. "As competent military professionals, we need to have space weather concerns mainstreamed into our thought process," said Brig. Gen. David L. Johnson, Air Force director of weather. The Air Force is the DoD provider for space environmental information. "We need to know when and where we have an advantage across all levels of military operations, and with the information provided by SXI, we're working to better integrate space weather into environmental situational awareness for warfighters," said General Johnson.

The SXI is a small telescope that makes use of advanced technology and grazing incidence optics that allow it to see the sun's outer atmosphere or corona in X-rays. This lets solar forecasters see phenomena they couldn't otherwise - such as coronal holes that cause geomagnetic storms, and to infer solar activity occurring behind the sun's edge, or limb. X-ray images are also more accurate



2003/02/13 13:44:39 UTC P\_MED\_A 3.000s 598V

Images courtesy of the National Geophysical Data Center, NOAA

A coronal structure image from the GOES-12 Solar X-ray Imager. The SXI images are available at <http://www.ngdc.noaa.gov/stp/stp.html>

than white light imagers for identifying the location of flares.

"NASA is excited about providing another fine tool for the NOAA team to use in weather operations, including space weather forecasts, said Martin A. Davis, NASA GOES program manager at Goddard Space Flight Center, Greenbelt, Md. GOES-12 represents a continuation of a 27-year joint program between NASA and NOAA.

The United States operates two environmental satellites in geostationary orbit 22,300 miles over the equator. GOES-12 was launched on July 23, 2001, and placed into on-orbit storage. Controllers at NOAA's Satellite Operations Control Center in Suitland, Md., are commanding the satellite out of storage and preparing it for operations to replace GOES-8. GOES-8 was launched April 13, 1994, to overlook the Eastern part of the United States and well out into the Atlantic Ocean. GOES-10 is currently overlooking the West Coast, the Pacific Ocean and Hawaii.

NOAA's National Environmental Satellite, Data, and Information Service operates the GOES series of satellites. After the satellites complete on-orbit checkout, NOAA assumes responsibility for command and control, data receipt, product generation and distribution. NASA's Goddard Space Flight Center manages the design, development and launch of the spacecraft for NOAA. The SXI was built by NASA's Marshall Space Flight Center in Huntsville, Ala.

The images taken by the Solar X-ray Imager will be available in real time to the general public on the Web, through NOAA's National Geophysical Data Center website at <http://www.ngdc.noaa.gov/stp/stp.html>

# Minefield Marathon

By Master Sgt. Mark Adams  
OL-C, 18th WS, Fort Knox, Ky.

*There I was with a group of about 200 of my friends and co-workers at a social gathering. We were all standing around making small talk, swapping stories and basically killing time when out of nowhere a thunderous explosion shook the ground! We could see a large plume of dirt and debris filling the sky only a few hundred feet from where we were standing. What would you do if you were in our shoes? Well that's just what we did – RUN!*



To be more specific we ran and ran, and by the time we quit running, we ran exactly 26.2 miles ... during the inaugural running of the "Minefield Marathon," Bagram AB, Afghanistan, Nov. 29 – the first marathon ever run in our "War Zone." As the explosion shook the ground and



*Above, runners race along the Minefield Marathon route as a C-17 Globemaster III taxis on the Bagram AB runway in Afghanistan.*

*Left, runners flanked on both sides by photographers as they start the race.*

Photos courtesy of U.S. Army Sgt. Reeba Critser



my feet were placed into motion I thought to myself "How many runners would ever have a chance to run a marathon held in a war zone?" The answer is 192, and I was lucky to be one of them!

The course is probably one of the more demanding marathon courses I've ever run. The elevation at Bagram Air Field is 4,888 feet above sea level, or nearly a mile high. On top of that, 15 miles of the race is literally run through minefields laid by the Russians and the Taliban during their occupation of Afghanistan. The race has strict rules and the minefields were clearly marked. I had to laugh to myself as I passed the first red triangular sign reading "Danger Mines." I thought, "This will be the only marathon where runners won't be cheating or cutting corners, doing so could not only result in disqualification, but could be deadly."

The race started in typical fashion, there were a few "Jack rabbits" that got their fame and glory of being out front. My strategy was to start slow and steady and to maintain about the same pace throughout the race, that method had worked for me in my past two marathons. Truthfully, the start of the race was planned. The explosion was actually a controlled detonation of an unexploded ordinance in a field near the starting line. As I headed down the dirt, gravel and blacktop roads, I was thinking the usual things that go through many marathoners minds. Did I train enough? Did I eat right?

Did I drink enough? Should I go to the bathroom one more time? How will I feel at the 20-mile mark? Will the weather hold? Am I going out too fast?

This marathon did have several differences from the typical grand spectacle. There were no huge crowds to cheer you on, no bands playing music to motivate you along the way. I didn't see any cheerleaders to pep you up as you trek along. There were no official photographers taking your picture to sell to you afterwards. We had no family to root for us as we crossed the finish line, although my wife and son were with me mentally the entire way. What I did encounter were memories that will last a lifetime and had to be experienced and not bought.

Instead of running through huge crowds we ran past a small village and sometimes saw the local children waving to us as we ran past. I would tell them "Salaam" or hello in Dari. They usually laughed and acknowledged me in return with a "How are you" in broken English. As I ran off, I would tell them "Khoda Hafez" or goodbye. As I made my way down the road, I passed several older Afghan men sitting in chairs with AK-47's in their laps.

At one point along the taxi-way, we had to run around a 15-foot crater located dead center of the taxi-way. That crater was probably from one of our own munitions dropped when we invaded the Airfield a year prior. Who would have thought Americans would be running a

*See Minefield, next page*

## Minefield, continued from previous page

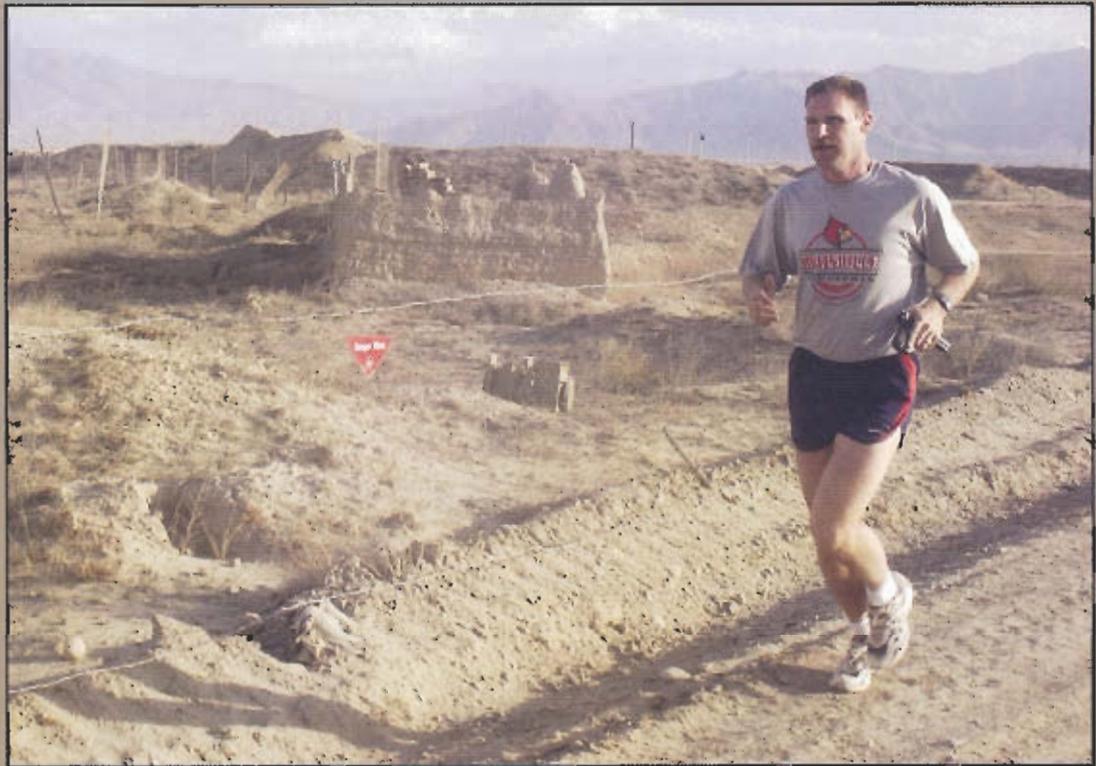
marathon around that same crater a year later.

Amidst the debris and battered landscape, however, the area surrounding Bagram is beautiful. The 17,000-foot snow capped Hindu Kush Mountain range encompasses the entire background. During the entire race, I could also look up at any given moment and see an American flag flying proudly along our route. If I ever got tired or weary I just looked up, spotted an American flag and remem-

bered why I was here. I thought of all the men and women who had made tremendous sacrifices to preserve the freedom we enjoy in America.

After the race there was no soaking in a steamy hot shower, we were strictly limited and are required to take "Navy showers." Get in, get wet, soap-up, rinse and get out. I cheated and soaked for a few extra seconds. We ran four and a half laps around the airfield, a 6.2 miles loop, to reach our goal – 26.2 miles and the sense of satisfaction for completing a "marathon in a minefield." ♪

*Master Sgt. Mark Adams trains for the Minefield Marathon while deployed to Afghanistan.*



*Photo courtesy of U.S. Army Sgt. Feeba Critser*

## ACC, continued from page 7

our part to execute Air Force Weather reengineering. From my early involvement in reengineering, to where we are today, it is truly amazing to witness the transformation of the career field. There have obviously been some growing pains along the way, but we are seeing the fruits of everybody's labors – and this includes overall improvement in ACC weather manning.

We are also working to complete and apply the Career Progression Group factors to the ACC implementation results of the new AFMS. The CPG is an Air Force level action that adjusts enlisted grades to keep each grade at the established thresholds established by Congress. As we work with ACC/XPM to implement the CPG for the weather force, this will eventually cause some units to see a decrease or roll down of enlisted ranks. For example, if a unit was authorized two Master Sergeants under the AFMS, one of these could be rolled down to a Technical Sergeant. Likewise, if a unit was authorized three Technical Sergeants, one or two Techs may be rolled down to

Staff Sergeant positions. These are just examples and each unit is looked at individually. The overall manpower authorizations for a unit will not change, but ranks and skill level could change.

A key factor to improving our manning across AFW is retaining as many personnel as possible. Current AFW reenlistment rates for first term airmen are 59 percent, second termers reenlist at 72 percent, and career airman at 89 percent. The Air Force goals for each of these categories are 56 percent, 75 percent, and 95 percent, respectively. First term rates are exceeding the AF goal; however, second term and career airman are below the AF goals. Hopefully, more and more airman will make the decision to remain in the world's greatest Air Force.

In summary, ONE/OEF and improved manning are top weather priorities in ACC. We salute all ACC weather forces for the outstanding weather operations being conducted – day in and day out. On the manning issue, we continue to work command leveling and command of entitlement actions, and we will continue to see ACC manning improve. ♪



# Newest Chiefs' actions earn promotion to highest enlisted rank

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

As we congratulate our newest Air Force Weather active duty and Air National Guard Chief Master Sergeant this year, I thought it would be appropriate to look at the accomplishments of these AFW members reaching the rank of Chief.

First, all completed their PME in residence, or where applicable, by correspondence. Most were Distinguished Graduate or better when graduating from those schools. Every one of the selects had a Community College of the Air Force associate's degree and one had master's degree. All have won awards at unit and MAJCOM levels and some have even won at Air Force level. Assignments were very similar as well. They all had some Air Force and Army unit experience; all were a CWSO at one point; two worked at MAJCOM headquarters; and four were Superintendents at Operational Weather Squadrons (operations, communications, and training). Basically, they progressively increased their responsibilities, got breadth of experience, completed the education requirements, and did the best they could in their jobs.

It is interesting to note, the ANG chiefs have been selected from among all operations units. The last three years, the ANG has been averaging three chiefs a year. They hold the position for two years, then retire or move into an ANG Chief billet. Chief Master Sgt. Paul Castillo is the first AGR to get chief stripes in the ANG. Again, congratulations to all. ✎

*The following AFW professionals were selected for promotion to the rank of Chief Master Sergeant:*

**Paul Castillo,**  
*WRTC, Camp Blanding, Fla.*

**Gerald Chambers,** 123WF  
*Portland, Org.*

**John Galliano,**  
*607th WS, Yongsan, Korea*

**Kenneth Kingsbury,**  
*25th OWS, Davis-Monthan AFB, Ariz.*

**Jacob Lee,**  
*USAFE OWS, Sembach AB, Germany*

**Marvin Million,**  
*28th OWS, Shaw AFB, S.C.*

**Barry Ortner,**  
*3rd WS, Fort Hood, Texas*

**Christopher Rambali,**  
*HQ ACC, Langley AFB, Va.*

**Robert Thomas,**  
*104WF, Baltimore, Md.*

## Full-time Weather Guardsman becomes first promoted to Chief

A Florida National Guardsman has become the first person in the traditional Air National Guard to be promoted to Chief Master Sergeant in the weather career field.

Chief Master Sgt. Paul Castillo, who has served as the Weather Readiness Training Center's director since 1998, was promoted in a ceremony at Camp Blanding, Fla., in January. In addition to the promotion, Castillo was awarded the Meritorious Service Medal.

Castillo's promotion is significant in that there are no full time or traditional Guardsmen in the weather career field in the Guard. He earned his E-9 position under the Deserving Airman program. Castillo competed against all E-8s in the state in the Florida Air National Guard.

Castillo served as first sergeant for the unit until additional staff members were hired. He oversees all of the operational and educational functions of the 120-day curriculum and the day to day operations of the WRTC.

"Chief Castillo's prodigious involvement in the WRTC has accelerated the Florida Air National Guard's contributions to the weather community and has brought great credit upon us all," said Col. Joseph Balskus, chief of staff for the Florida Air National Guard. ✎

means the computer verifies the forecast each hour on the hour automatically. Example: in an eight hour shift the OWS team (or computer if they let the previous forecast ride) issued eight separate TAFs that the computer will verify across all 48 hours for the selected criteria—this is 192 hours (8 shift hours of TAFs multiplied by 24 hours each) for the 24 hour part of the TAF and eight separate 25-48 hour TAF verifications. Now you see why automation is critical for this to succeed – manually calculations would be too cumbersome and time consuming.

Next, we looked at what criteria earn points and

developed the following as a start but we do expect changes in the points as we grow in this process. The measured areas are as follows: Ceiling 30 points, Visibility 30 points, Wind Direction 15 points, Wind Speed 15, Wind Gusts 10, Maximum and Minimum Temperature 10 points, Weather Type 5 points for each weather type. We plan to verify each TAF hour using the observation on the hour (automated is preferred) and the observing rules and let the computer calculate the data so the OWS leadership would not have to calculate data manually. Expect to see more on the points as the program develops but here are some examples as we see it today, and yes you can earn negative points. (See Initial Metric Point System below.)

## Initial Metric Point System

### **Ceiling heights:**

No ceiling forecasted and observed: 30 points

Surface to 5,000 feet: 1 point deducted from 30 for each 100 feet off

5,500 feet to 10,000 feet: 1 point deducted from 30 for each 500 feet off

10,000 feet to 25,000 feet: 1 point deducted from 30 for each 1000 feet off

### **Visibility:**

0 to 5000 meters: 1 point deducted from 30 for each 100 meters off

Greater than 5000 meters to 9999: 1 point deducted from 30 for each 1000 meters off

Forecast for 9999: max points of 30

### **Wind Direction:**

When the speed is less than seven knots: the OWS team earns 15 points

When the wind speeds are equal to or greater than seven knots: the OWS team loses 1 point off the 15 points possible for each ten degrees off for wind direction

### **Wind Speed:**

When wind speed is equal to or greater than seven knots: the OWS team loses 1 point off the 15 points possible for each knot off for wind speed

### **Wind Gusts:**

If forecasted gusts: the OWS team lose 1 point off the possible 15 points for each knot off

If no gusts forecasted: the OWS team earns 15 points

If no gusts forecasted and gusts occur: the OWS team loses a point for each knot off

### **Weather and obstructions to visibility:**

OWS team must forecast the correct weather type: none, liquid, freezing, frozen, obscuration, and/or other – each type earns 5 points for each correct type forecasted

If precip or obstruction is forecasted: the max points possible is 20 points

If precip or obstruction occurs but not forecasted: deduct 5 points for each type

### **Temperatures (Max/Min):**

Earns 5 points for the Max and 5 points for the Min temperature forecast for the first and second 24 periods – 1 point will be deducted for each degree off and zero will be given if the OWS teams temperature forecasts do not occur within a two hour window either side of what was forecasted

### **Worst Weather:**

Same point values for the criteria forecasted as in the first 24 hour period – the OWS team must have the occurrence within plus or minus two hours of the time listed for occurrence – or they OWS team receives zero points.

We are currently evaluating what, if any impacts, there would be on our weather communication systems. Specifically, we want to ensure that if our TAFs are updated every hour, the current communication systems can handle the change. Additionally, the information at the end of the TAF valid time will be the expected worst conditions for an additional 24 hours beyond the TAF valid time (in other words for 25-48 hours out).

#### **WARNVER**

Warning Verification continues to be part of technical performance reporting. Air Combat Command Director of Weather's automated WARNVER is our benchmark program. The verification looks at the capability which has an 85 percent standard for AFW; desired lead-time, at a 70 percent standard; and the false alarm rate, which has a 60 percent standard and OWS leadership uses a formula to determine if a WARNVER location is Green, Yellow, or Red. This is a great tool for OWS leadership to use to improve weather warning verification.

#### **Operational effectiveness reporting**

##### **MEFVER**

AFI 15-135 provides in depth detail on how every Combat Weather Team should develop a Mission Execution Forecast Verification program that works for them. The key to a successful MEFVER program is effective CWT leadership involvement with their operators and local support units. This requires a continuous concerted effort to obtain feedback from your operators and local support units to verify if the go/no-go mission execution forecast was on target. CWT leadership should work with their MAJCOMs as they develop their program. Standardization and Evaluation teams will assist in program improvement if further guidance is needed.

##### **SURVEYS**

Another area in operational effectiveness reporting concerns professional interaction. The goal in this area is to standardize how we measure our professionalism. Air Mobility Command Director of Weather developed a benchmark survey to measure customer service that meets AF/XOW guidance. The survey measures timeliness, accuracy, and courtesy. In addition, the operators and local support units can provide an overall score and provide leadership with contact information if desired. This survey will be available through the OWS web page and on the reverse side of the DD Form 175-1 - aircrew briefing. Automated email and random sample phone call solicitation will also be used. A wide range of surveys provides leadership the opportunity to evaluate our professionalism, reward superior work and correct deficiencies.

#### **Functional resource readiness reporting**

##### **MAN, TRAIN, & EQUIP**

Weather Resource Database is the newest tool for tracking AFW metrics. Instructions for reporting data in the WRD will be included in AFI 15-114. In the meantime contact your MAJCOMs to learn the reporting policy for

the unit, or access the AFWA web site to read the WRD CONOPS. The web-based database is a common user communication system linked to the AFWA official web site. It contains information on AFW units, personnel, equipment, and training. This database provides HQ AF/XOW staff, MAJCOM/DOWs, OWS and CWT leadership an automated way to retrieve the information they need to address organizing, training, and equipping issues.

The end state will definitely save time and resources. MAJCOM/DOWs will decide if the database will be updated by the individual units or by MAJCOM personnel. There was a serious need to have all the information centrally located and quickly available for making critical decisions. We exhausted all attempts to make legacy systems responsive to our needs, but they could not meet current requirements. The legacy systems were obsolete, unreliable, or just not available to all our AF and Army support war fighters. The WRD has received certification and complies with rules on information security. Once this system is loaded with all the unit information, updating that information should not overburden leadership at any level.

Training is still a very important part of AFW metrics. OWS leadership will gather data on ISC graduates who are enrolled in up-grade-training and completing their 5-level career development course. This data will track the rate at which graduates are completing their CDCs and the number of pass/fails. We will look for causes and solutions with the goal of improving all aspects of the training program.

AFI 10-201 is the directive guidance for reporting the Status of Resources and Training System. Revisions to the AFI have aligned the intended reporting of wartime readiness with the AEF construct. When reporting SORTS, keep in mind the purpose is to report wartime readiness, not your capability to perform your peacetime mission. SORTS is not the proper way to address manning shortages or equipment issues that have no impact on your wartime requirement or mission. The key to correctly reporting SORTS is to know AFI 10-201.

The weather career field is on the road to better tracking and measurement of our performance. As with any change, it takes proper planning and time to achieve the desired results. We have all heard there is no "I" in TEAM, and "Together Everyone Achieves More." With that idea in mind, imagine what we can accomplish with an effective AFW metrics program! HOOAH! Let's all work together as we charge forward with implementation of this much needed and improved program. ♪

***For more information on the program, contact Master Sgt. Larry Goff at DSN 426-4392 or e-mail any question or concerns to [larry.goff@pentagon.af.mil](mailto:larry.goff@pentagon.af.mil) Master Sgt. Donald Jeter manages the program at AFWA and can be reached at DSN 271-8583 or e-mail at [metrics@afwa.af.mil](mailto:metrics@afwa.af.mil)***

the actual cloud amount, layering, or type is contained in the image. This information must be diagnosed using cloud-detection algorithms.

For example, by comparing the cloud-top temperature derived from an infrared image to the surface temperature, we diagnose areas of cloud and no-cloud. We are currently tuning existing algorithms, in addition to searching for others, to better identify cloud at high latitudes and over snow cover, where the temperature and brightness of the clouds, respectively, is close to that of the surface, making it difficult to detect cloud.

In addition to improving the cloud analysis, we're also searching for new methods to enhance our cloud forecasting capability. The cloud

model produces cloud forecasts by advecting an initial distribution of clouds, provided by WWMCA, using winds from a global forecast model. Very few cloud physical processes are incorporated into the model. For example, it is unable to produce convectively generated clouds, which is a significant limitation beyond say 9 to 12 hours.

In contrast, NWP models such as MM5 contain the necessary cloud physics, but their ability to accurately forecast clouds remains poor. To bridge the gap between CDFS II and GTWAPS produced cloud forecasts, we are developing cloud algorithms that statistically relate the observed clouds obtained from the WWMCA to the forecast clouds from MM5 at the same time. This process is very similar to the process used to produce Model Output Statistics. Assuming that the statistical relationship is constant, we

can apply it to any MM5 forecast. The method removes biases from the MM5 forecast, to provide a more accurate cloud forecast well beyond 12 hours. This capability is already operational for MM5 and will be expanded to the Global Forecast Model by the summer of 2003.

These are just some examples of current projects planned for operational implementation in the near future. Other exciting technologies we're investigating include Four-Dimensional Variational MDAS, which incorporates synoptic observations into the analysis, and mesoscale ensembles, comparing several forecasts of the same event to determine the reliability of a given forecast. All of these technological advances guarantee that GTWAPS and CDFS II will continue to meet the weather challenges of an uncertain future. ♣

## MISSING AFW ARTIFACTS

By Jerry White  
AFW History Office

In 1962, the Air Force Association recognized the Air Weather Service's outstanding contribution to national defense with a Citation of Honor – one of AFA's highest honors. Unfortunately, like many other trophies and plaques that bestowed honor upon Air Force Weather organizations, the 1962 AFA Citation of Honor plaque is *missing in action*. Those artifacts that have been recovered are prominently on display in the Air Force Weather Heritage Center. Groups ranging from schoolchildren to senior officers and foreign dignitaries visit the Air Force Weather Heritage Center at Offutt AFB, Neb., and see first-hand these precious links to the past – the long and proud legacy of Air Force Weather.

If you know of artifacts – trophies, plaques, flags, guidons – that relate the heritage of Air Weather Service or the many Air Force

weather organizations, please contact the Air Force Weather History Office at (402) 232-8682/8683, DSN 272-8682/8683, by e-mail at [HQ@afwa.af.mil](mailto:HQ@afwa.af.mil), or by mail at HQ AFWA/HO, 106 Peacekeeper Dr., Ste. 2N3, Offutt AFB, NE 68113-4039. ♣



1962 AFA Citation of Honor.

Image courtesy of AFW History Office

**Tech. Sgt. William Barnwell**

Chief, Weather Station Operations  
18th WS, Simmons AAF, N.C.

**Years in Service:** 8

**Hometown:** Charleston, S.C.

**Role Model / Why?** I have many, but these days I most admire President Bush for his leadership, moral clarity, and unwavering commitment to doing the right thing.

**Hobbies:** Amateur radio, reading, and spending time with my wife Keri, and sons Will and Thomas.

**Most Memorable Air Force Weather**

**Experience:** Conducting a site survey of the Afghan Meteorological Authority and meeting the Met Authority President, Mr. Qadir. I was amazed to learn what a large and professional weather service had existed before 20 years of war destroyed it, and how

weather forecasting was finally banned as a form of sorcery by the Taliban. It was a humbling experience that I will never forget.



# Weather Warriors



**Master Sgt. Cary Fitzsimmons**

Chief, Investigation Branch  
Air Force Combat Weather Center  
Hurlburt Field, Florida

**Years in Service:** 20

**Hometown:** Manhattan, New York

**Role Model / Why?** Everyone in the military who is dedicated, a team player and has a "drive on spirit" to get the mission accomplished.

**Hobbies:** Chess, Cribbage, Astronomy, and Swimming

**Most memorable AFW experience:** The biggest challenge was forecasting the fog at Fort Ord, Calif. Recently, my most memorable experience would be flying in an MH-53 Pave Low and hanging out the back to test some weather equipment.

# Salutes

## Retirements

**Arnold Starr**, Det. 4, AFWA, Holloman AFB, N.M.

**Lt. Col. Richard Kinel** (IMA), 57th OSS/OSW, Nellis AFB, Nev.

**Master Sgt. Jefferson Cook**, AFCWC, AFWA, Hurlburt Field, Fla.

**Master Sgt. Raymond Seccession**, AFCWC, AFWA, Hurlburt Field, Fla.

**Tech. Sgt. Kevin Copeland**, 47th OSS/OSW, Laughlin AFB, Texas

**Tech. Sgt. David Dawson**, 57th OSS/OSW, Nellis AFB, Nev.

**Tech. Sgt. Patrick Johnson**, AFCWC, AFWA, Hurlburt Field, Fla.

**Tech. Sgt. Leslie Hall**, AFCWC, AFWA, Hurlburt Field, Fla.

## Awards and Decorations

### BRONZE STAR

**Senior Master Sgt. Allen Williams**, 181st WF, Carswell AFB, Texas

### MERITORIOUS SERVICE MEDAL

**Lt. Col. Robert Black**, HQ USAF/XOW, Washington, D.C. (2nd OLC)

**Maj. David Helms**, 104th WF, Camp Freterd, Md.

**Maj. Loretta Lombard**, WRTC, Camp Blanding, Fla.

**Maj. Barbara Miner**, HQ AMC, Scott AFB, Ill.

**Maj. William Olsen**, HQ USAF/XOW, Washington, D.C. (1st OLC)

**Maj. Kevin Stone**, HQ USAF/XOW, Washington, D.C. (2nd OLC)

**1st Lt. Michael Marsicck**, 17th OWS, Hickam AFB, Hawaii

**Senior Master Sgt. William Davis** (IMA), 57th OSS/OSW, Nellis AFB, Nev.

**Senior Master Sgt. David Oetting**, 17th OWS, Hickam AFB, Hawaii

**Master Sgt. Jefferson Cook**, AFCWC, AFWA, Hurlburt Field, Fla.

**Master Sgt. Jeff Maytes**, 72nd OSS, Tinker AFB, Okla.

**Master Sgt. Raymond Seccession**, AFCWC, AFWA, Hurlburt Field, Fla.

**Tech. Sgt. Don Channel**, 105th WF, Nashville, Tenn.

**Tech. Sgt. Kevin Copeland**, 47th OSS/OSW, Laughlin AFB, Texas

**Tech. Sgt. Wayne Hardesty**, 57th OSS/OSW, Nellis AFB, Nev.

### JOINT SERVICE COMMENDATION MEDAL

**Tech. Sgt. Paul Hamilton** (IMA), 57th OSS/OSW, Nellis AFB, Nev.

### AIR FORCE COMMENDATION MEDAL

**Capt. Anthony Watkins**, 105th WF, Nashville, Tenn.

**1st Lt. Aaron Moses**, 72nd OSS, Tinker AFB, Okla.

**2nd Lt. Robert Garrett**, 47th OSS/OSW, Laughlin AFB, Texas

**Master Sgt. Scot Fujioka**, 199th WF, Hickam AFB, Hawaii

**Master Sgt. Gloria Grey**, 105th WF, Nashville, Tenn.

**Tech. Sgt. David Dawson**, 57th OSS/OSW, Nellis AFB, Nev.

**Tech. Sgt. Paul Hamilton** (IMA), 57th OSS/OSW, Nellis AFB, Nev.

**Tech. Sgt. Robert Hathaway**, 140th WF, Willow Grove ARS, Penn.

**Tech. Sgt. Patrick Johnson**, AFCWC, AFWA, Hurlburt Field, Fla.

**Staff Sgt. Cory Brown**, AFCWC, AFWA, Hurlburt Field, Fla.

**Staff Sgt. Raymond Deleon**, 57th OSS/OSW, Nellis AFB, Nev.

**Staff Sgt. Sonia Heath**, JTWC, Pearl Harbor, Hawaii

**Staff Sgt. Casey Mitchell**, 105th WF, Nashville, Tenn.

**Staff Sgt. Melinda Parker**, 335th TRS, Keesler AFB, Miss.

**Staff Sgt. Paul Thompson**, 104th WF, Camp Freterd, Md.

**Senior Airman Johanna Peltonen**, 57th OSS/OSW, Nellis AFB, Nev.

### AIR FORCE ACHIEVEMENT MEDAL

**Major Ann Hollis**, 116th WF, Camp Murray, Wash.

**Major Donald Prince**, 209th WF, Camp Mabry, Texas

**Capt. Joseph Falter**, 72nd OSS, Tinker AFB, Okla.

**Senior Master Sgt. Laura Clark**, 116th WF, Camp Murray, Wash.

**Master Sgt. Everett Valdez**, 209th WF, Camp Mabry, Texas

**Tech. Sgt. Steve Feist**, 116th WF, Camp Murray, Wash.

**Tech. Sgt. Donna Kirckof**, 116th WF, Camp Murray, Wash.

**Tech. Sgt. Brian Landtroop**, 105th WF, Nashville, Tenn.

**Tech. Sgt. David Lloyd**, 209th WF, Camp Mabry, Texas

**Tech. Sgt. Cindy Matzen**, 209th WF, Camp Mabry, Texas

**Tech. Sgt. Billy Tiller**, 209th WF, Camp Mabry, Texas

**Staff Sgt. Eric Apple**, 116th WF, Camp Murray, Wash.

**Staff Sgt. Kimberly Buttrick**, 202nd WF, Otis ANGB, Mass.

**Staff Sgt. Shawn Fitzpatrick**, 202nd WF, Otis ANGB, Mass.

**Staff Sgt. Kurt Rohl**, 47th OSS/OSW, Laughlin AFB, Texas

**Staff Sgt. Valerie Tawa**, 202nd WF, Otis ANGB, Mass.

**Staff Sgt. Jeffrey Wilkerson**, 105th WF, Nashville, Tenn.

**Senior Airman Doug Bunn**, 47th OSS/OSW, Laughlin AFB, Texas

**Senior Airman Debra Chaves**, 47th OSS/OSW, Laughlin AFB, Texas

**Senior Airman April Juarez**, JTWC, Pearl Harbor, Hawaii

**Senior Airman Bradley McCullough**, 105th WF, Nashville, Tenn.

**Senior Airman Michael Reilly**, 202nd WF, Otis ANGB, Mass.

**Senior Airman Nicholas Ruiz**, 47th OSS/OSW, Laughlin AFB, Texas

**Airman 1st Class Aaron Hedstorm**, 26th OWS, Barksdale AFB, La. (Posthumous)

### ARMY ACHIEVEMENT MEDAL

**Tech. Sgt. Bertrand Sausse**, 122nd WF, Hammond, La.

**Staff Sgt. Joseph Sonier**, 122nd WF, Hammond, La.

**Senior Airman Dannel Davenport**, 122nd WF, Hammond, La.

## OUTSTANDING CIVILIAN CAREER SERVICE AWARD

**Arnold Starr**, Det. 4, AFWA, Holloman AFB, N.M.

## Education

### WEATHER OFFICER'S COURSE

**Lt. Col. Peter Kurka**, Praha, Czech Republic

**Maj. Iazlo Kovaks**, Budapest, Hungary

**Capt. Zoltan Toth**, Keeskemmet Air Base, Hungary

**1st Lt. Jennifer Bailey**, 28th OWS, Shaw AFB, S.C.

**2nd Lt. Ricardo Brunet**, 20th OWS, Yokota AB, Japan

**2nd Lt. Stephen Chesser**, 28th OWS, Shaw AFB, S.C.

**2nd Lt. Charles Cunningham**, 15th OWS, Scott AFB, Ill.

**2nd Lt. Jeffrey Cunningham**, 28th OWS, Shaw AFB, S.C.

**2nd Lt. Pamela DeFazio**, USAF OWS, Sembach AB, Germany

**2nd Lt. Tara Falcon**, USAF OWS, Sembach AB, Germany

**2nd Lt. Paul Homan**, 25th OWS, Davis-Monthan AFB, Ariz.

**2nd Lt. Paul Koecher**, 100th WS, Elmendorf AFB, Alaska

**2nd Lt. Kyle Larson**, 15th OWS, Scott AFB, Ill.

**2nd Lt. Steven Lipinski**, 17th OWS, Hickam AFB, Hawaii

**2nd Lt. Kevin Mandrik**, 28th OWS, Shaw AFB, S.C.

**2nd Lt. Menola Paiva**, 17th OWS, Hickam AFB, Hawaii

**2nd Lt. Joseph Ratka**, 20th OWS, Yokota AB, Japan

**2nd Lt. Jason Sechrist**, 17th OWS, Hickam AFB, Hawaii

**2nd Lt. Jeanne Szczes**, 28th OWS, Shaw AFB, S.C.

**2nd Lt. Jonathan Wilson**, 26th OWS, Barksdale AFB, La.

**2nd Lt. Nicole Winters**, 11th OWS, Elmendorf AFB, Alaska

### WEATHER CRAFTSMAN'S COURSE

**Carlos Rocha**, Lajes Field, Azores, Portugal

**Joao Santos**, Lajes Field, Azores, Portugal

**Tech. Sgt. Jeffrey Healy**, 20th OWS, Yokota AB, Japan

**Staff Sgt. Amanda Berry**, 120th WF, Buckley AFB, Colo.

**Staff Sgt. Melissa Bridges**, 335th TRS, Keesler AFB, Miss.

**Staff Sgt. Spencer Clark**, 352nd OSS, RAF Mildenhall, United Kingdom

**Staff Sgt. John Dechan**, 1st OSS OSW, Langley AFB, Va.

**Staff Sgt. Christopher Dunstone**, 26th ASOS, Fort Drum, N.Y.

**Staff Sgt. Brenda Graves**, 28th OSS, Ellsworth AFB, S.D.

**Staff Sgt. Jennifer Greca**, 355th OSS, Davis-Monthan AFB, Ariz.

**Staff Sgt. Stephen Harvilla**, 7th WS, Sandhofen, Germany

**Staff Sgt. Thomas Hauser**, 436th OSS, Dover AFB, Del.

**Staff Sgt. Chad Helmer**, 437th OSS, Charleston, S.C.

**Staff Sgt. Johnny Hobbs**, 16th WF, Rickenbacker IAP, Ohio

**Staff Sgt. Eugene Joelson**, 39th OSS, Incirlik AB, Turkey

**Staff Sgt. Aaron Kelly**, 19th ASOS, Fort Campbell, Ky.

**Staff Sgt. Brian Landrum**, HQ AFWA, Offutt AFB, Neb.

**Staff Sgt. Kathy Lucia**, 18th WS, Pope AFB, N.C.

**Staff Sgt. Sean Murnane**, 195th WF, Channel Islands ANG, Calif.

**Staff Sgt. Robert Nelson**, 319th OSS, Grand Forks AFB, N.D.

**Staff Sgt. Beth Page**, 2nd OSS, Barksdale AFB, La.

**Staff Sgt. Tracy Pete**, AFCC, AFWA, Asheville, N.C.

**Staff Sgt. Lecjah Rogers**, 92nd OSS, Fairchild AFB, Wash.

**Staff Sgt. Michael Rosales**, 75th OSS, Hill AFB, Utah

**Staff Sgt. Terrance Smiley**, 335th TRS, Keesler AFB, Miss.

**Staff Sgt. Jeffrey Smith**, 57th OSS, Nellis AFB, Nevada

**Staff Sgt. Karla Szczer**, HQ AFWA, Offutt AFB, Neb.

**Staff Sgt. Geoffery Thompson**, 20th ASOS, Fort Drum, N.Y.

**Staff Sgt. Derek Whitmer**, 165th WF, Louisville, Ky.

**Staff Sgt. Tim Williams**, 72nd OSS, Tinker AFB, Okla.

**Staff Sgt. Valerie Wynn**, 6th OSS, Mac Dill AFB, Fla.

**Staff Sgt. Misty York**, Det. 10, 7th WS, Giebelstadt, Germany

**Senior Airman Sharay Dixon**, 89th OSS, Andrews AFB, Md.

**Senior Airman Chad Kesterterton**, 15th RS, Indian Springs, Nev.

**Senior Airman Terri Palmer**, 15th ASOS, Fort Stewart, Ga.

**Senior Airman Don Pascual**, 10th CWS, Fort Campbell, Ky.

**Senior Airman Manuela Weisser**, Det. 10, 7th WS, Giebelstadt, Germany

### FORECASTER COURSE

**Capt. Kuo Ping Ting**, Taipei, Republic of China

**Staff Sgt. Christopher Benusa**, 16th OSS, Hurlburt Field, Fla.

**Staff Sgt. Eric Moore**, 113th WF, Indianapolis, Ind.

**Staff Sgt. Sharon Wood**, 26th OWS, Barksdale AFB, La.

**Senior Airman Scott Capodice**, 1st OSS OSW, Langley AFB, Va.

**Senior Airman Richard Caswell**, 89th OSS OSW, Andrews AFB, Md.

**Senior Airman Carl Davis**, 140th WF, Willow Grove ARS, Penn.

**Senior Airman Jennifer Dowell**, Det. 1, 18th WS, Fort Eustis, Va.

**Senior Airman Alicia Nelson**, 375th OSS OSW, Scott AFB, Ill.

**Senior Airman Kiet Nguyen**, HQ AFWA, Offutt AFB, Neb.

**Senior Airman James Rafiner**, 56th OSS OSW, Luke AFB, Ariz.

### WEATHER FORECASTER APPRENTICE COURSE

**Tech. Sgt. William DeCrescenzo**, 25th OWS, Davis-Monthan AFB, Ariz.

**Tech. Sgt. Roger West**, 15th OWS, Scott AFB, Ill.

**Staff Sgt. William Wilkinson**, 203rd WF, Fort Indiantown Gap, Penn.

**Senior Airman Kip Fant**, 107th WF, Selfridge ANGB, Mich.

**Senior Airman Richard Landsverk**, 25th OWS, Davis-Monthan AFB, Ariz.

**Senior Airman Jason Mai**, 28th OWS, Shaw AFB, S.C.

**Airman 1st Class Paul Alfred**, USAF OWS, Sembach AB, Germany

**Airman 1st Class Darcie Baird**, WRTC, Camp Blanding, Fla.

**Airman 1st Class Jeremiah Burns**, 165th WF, Louisville, Ky.

**Airman 1st Class Sayward Cabe**, 15th OWS, Scott AFB, Ill.

**Airman 1st Class Sara Festavan**, 28th OWS, Shaw AFB, S.C.

**Airman 1st Class Tania Garza**, 25th OWS, Davis-Monthan, Ariz.

**Airman 1st Class Jason Heiman**, WRTC, Camp Blanding, Fla.

**Airman 1st Class Steven Hollatz**, 25th OWS, Davis-Monthan AFB, Ariz.

**Airman 1st Class Andrew Ingold**, 25th OWS, Davis-Monthan AFB, Ariz.

**Airman 1st Class Adam Ismael**, 25th OWS, Davis-Monthan AFB, Ariz.

**Airman 1st Class Matthew Klauk**, 126th WF, Milwaukee, Wis.

**Airman 1st Class Adam Knight**, 25th OWS, Davis-Monthan AFB, Ariz.

**Airman 1st Class Adam Mawhorr**, 28th OWS, Shaw AFB, S.C.

**Airman 1st Class Travis Reiken**, USAF OWS, Sembach AB, Germany

**Airman 1st Class Brandon Scamardo**, USAF OWS, Sembach AB, Germany

# Salutes

**Airman 1st Class Joshua Woods**, 28th OWS, Shaw AFB, S.C.

**Airman Robby Haliburton**, 25th OWS, Davis Monthan AFB, Ariz.

**Airman Randy Schilling**, 25th OWS, Davis Monthan AFB, Ariz.

**Airman Amber Stoliker**, USAFE OWS, Sembach AB, Germany

**Airman Beshara Taher-Watts**, 28th OWS, Shaw AFB, S.C.

## NCO ACADEMY

**Tech. Sgt. Shannon Barker**, AFCCC, AFWA, Asheville, N.C. (Distinguished Graduate)

**Tech. Sgt. John Battig**, 72nd OSS, Tinker AFB, Okla.

**Tech. Sgt. Joel Darr**, HQ AFWA, Offutt AFB, Neb.

**Tech. Sgt. Kenneth Dixon**, ACC/AOS, Langley AFB, Va. (Distinguished Graduate)

**Tech. Sgt. James Gunderson**, HQ AFWA, Offutt AFB, Neb.

**Tech. Sgt. Darrin Hughes**, HQ AFWA, Offutt AFB, Neb.

**Tech. Sgt. Shane McIntire**, Det. 5, AFWA, Palehua, Hawaii

**Tech. Sgt. Jeffrey Peterson**, HQ AFWA, Offutt AFB, Neb.

**Tech. Sgt. Robert Wagner**, 9th OSS/OSW, Beale AFB, Calif.

**Tech. Sgt. Erik Waugaman**, JTWC, Pearl Harbor, Hawaii

## AIRMAN LEADERSHIP SCHOOL

**Staff Sgt. Amanda Jenkins**, 46th WS, Eglin AFB, Fla. (Levitow Award)

**Staff Sgt. Barbara Long**, 72nd OSS, Tinker AFB, Okla. (Levitow Award)

**Staff Sgt. Blanch Mancillas**, HQ USAF/XOW, Washington, D.C.

**Staff Sgt. Cade Mayer**, 72nd OSS, Tinker AFB, Okla.

**Staff Sgt. Dasveer Parhar**, 412th OSS/OSW, Edwards AFB, Calif.

**Staff Sgt. Wanda Ramos-Robles**, Det. 3, AFWA, Ramey, Puerto Rico

**Staff Sgt. Jonathan White**, 26th OWS, Barksdale AFB, La.

**Senior Airman Joseph Andaya**, 57th OSS/OSW, Nellis AFB, Nev.

**Senior Airman Marjorie Arfa**, 412th OSS/OSW, Edwards AFB, Calif.

**Senior Airman Robert Cook**, HQ AFWA, Offutt AFB, Neb.

**Senior Airman Robert Follis, Jr.**, HQ AFWA, Offutt AFB, Neb.

**Senior Airman Rodney Hattery**, HQ AFWA, Offutt AFB, Neb. (Levitow Award)

**Senior Airman Blanch Mancillas**, HQ USAF/XOWP, Washington, D.C.

**Senior Airman Jessica Vallanos**, HQ AFWA, Offutt AFB, Neb.

## AFIT MASTER OF SCIENCE DEGREE (Meteorology)

**Capt. Mark Allen**, USAFE OWS, Sembach AB, Germany

**Capt. Richard Benz**, 30th WS, Vandenberg AFB, Calif.

**Capt. Marc Gasbarro**, 25th OWS, Davis-Monthan AFB, Ariz.

**Capt. Richard Gonzalez**, HQ AFWA, Offutt AFB, Neb.

**Capt. Delcon Narcisse**, 88th WS, Wright-Patterson AFB, Ohio

## AFIT MASTER OF SCIENCE DEGREE (Applied Physics/Space Weather)

**Capt. Jose Harris**, HQ AFWA, Offutt AFB, Neb.

## Promotions

### Selected for Promotion to Colonel

**Beth McNulty (IMA)**, HQ AFWA, Offutt AFB, Neb.

### Selected for Promotion to Major

**Gregory Bainum**, 5th OSS, Minot AFB, N.D.

**Joseph Benson**, 6th OSS, MacDill AFB, Fla.

**Lee Byerle**, AFIT, University of Utah, Salt Lake City, Utah

**Michael Calidonna**, AFRL, Tyndall AFB, Fla.

**Steven Dickerson**, USAFE/DOW, Ramstein AB, Germany

**Timothy Dreifke**, SOCEUR/SMO, Stuttgart, Germany

**Troy Dunn**, HQ AFWA, Offutt AFB, Neb.

**Dustin Evancho**, OL-K, AFWA, Tinker AFB, Okla.

**Joseph Falter**, 72nd OSS, Tinker AFB, Okla.

**Michael Gauthier**, USAFA, Colorado Springs, Colo.

**Joseph Golemboski**, 11th OWS, Elmendorf AFB, Alaska

**Bradford Green**, HQ AFWA, Offutt AFB, Neb.

**Michael Gremillion**, undisclosed location

**Robert Kractsch**, 15th OWS, Scott AFB, Ill.

**Michael Mills**, 43rd OSS, Pope AFB, N. C.

**William Pryor**, 9th OSS, Beale AFB, Calif.

**Daniel Shaltanis**, 92nd OSS/OSW, Fairchild AFB, Wash.

**Eric Sorbo**, 17th OWS, Hickam AFB, Hawaii

**Travis Steen**, 89th OSS/OSW, Andrews AFB, D.C.

**Robert Tibbetts**, 18th OSS/OSW, Kadena AB, Japan

**Henry Voegtle**, HQ AMC, Scott AFB, Ill.

## ANG Promotions

### Promotion to Lieutenant Colonel

**Michael Stage**, 154th WF, Little Rock AFB, Ark.

### Promotion to Major

**Michael Arakelian**, 165th WF, Louisville, Ky.

**Andrew Reeder**, 107th WF, Selfridge ANGB, Mich.

**James Robinson**, 181st WF, Carswell ARB, Texas

### Promotion to Master Sergeant

**Lori Flinn**, 200th WF, Sandston, Va.

**Scott Fujioka**, 199th WF, Wheeler AAF, Hawaii

### Promotion to Technical Sergeant

**John Cunningham**, 104th WF, Camp Preterrd, Md.

**Carrie McKinnon**, 199th WF, Wheeler AAF, Hawaii

**Shawn Peno**, 202nd WF, Otis ANGB, Mass.

## Also Receiving General's Coins:

**1st Lt. Gabriel Hunninghake,**  
*USCENTAF, Shaw AFB, S.C.*  
**2nd Lt. Richard Ernest,** *USCENTAF,*  
*Shaw AFB, S.C.*  
**2nd Lt. Christopher Hanson,** *28th*  
*OWS, Shaw AFB, S.C.*  
**Senior Master Sgt. Joel Rzepecki,**  
*USCENTAF, Shaw AFB, S.C.*  
**Tech. Sgt. Robert Hathaway,** *28th*  
*OWS, Shaw AFB, S.C.*  
**Staff Sgt. Robert Clark,** *20th OSS/*  
*OSW, Shaw AFB, S.C.*  
**Staff Sgt. John Delaney,** *28th OWS,*  
*Shaw AFB, S.C.*  
**Airman 1st Class Rachel Marshall,**  
*28th OWS, Shaw AFB, S.C.*

## General's Coin



**Staff Sgt. James Brown,** *CONUS Operations – C Flight* weather forecaster received his General's coin for skillfully leading his crew through the hectic summer thunderstorm season and exceeding last summer's success by 20 percent. Additionally, he supervised seven airmen in upgrade training and guided them to the highest CDC test averages on flight.

# Coin Corner

## Chief's Coin



**Airman 1st Class Clarissa Kaup,** *CONUS Operations – C Flight* weather forecaster, received her Chief's coin for issuing spot-on TAFs three consecutive days for Maxwell AFB, Ala. She recognized local effects, went against the models, and convinced the CWT that an isolated stratus/fog event was eminent – 18 hours out.

## Also Receiving Chief's Coins:

**Tech. Sgt. John Cunningham,**  
*USCENTAF, Shaw AFB, S.C.*  
**Tech. Sgt. Jason Noe,** *USCENTAF,*  
*Shaw AFB, S.C.*  
**Staff Sgt. Joseph Harbin,** *28th OWS,*  
*Shaw AFB, S.C.*  
**Staff Sgt. Joshua Roznowski,**  
*USCENTAF, Shaw AFB, S.C.*  
**Staff Sgt. Rocky Sutton,** *28th OWS,*  
*Shaw AFB, S.C.*  
**Senior Airman Robert Jones,** *20th*  
*OSS/OSW, Shaw AFB, S.C.*  
**Airman 1st Class Stacy Vanden-**  
**Wyngaard,** *Shaw AFB, S.C.*

