



# HIGH MACH

Serving the World's Premier Flight Simulation Test Complex



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## AEDC experiences record-breaking accelerated mission test

By Deidre Ortiz  
ATA Public Affairs

A highly successful accelerated mission test (AMT) of Pratt & Whitney's F135 conventional take-off and landing/carrier variant (CTOL/CV) engine was recently completed in the Sea Level 3 test cell (SL-3) at AEDC.

A Total Accumulated Cycle (TAC) count of 2,600, with record TAC accumulation of 80-90 per day was accomplished during the AMT of this F135 engine, found in versions of the F-35 Lightning II Joint Strike Fighter used by the U.S. Air Force and Navy.

"One reason this test was significant is that it was the first 2,600 TAC Accelerated Mission Test on the F135 engine at AEDC," said John Kelly, AEDC F135 test manager. "Previously these AMTs have been done at the Pratt & Whitney facility in West Palm Beach, Fla."

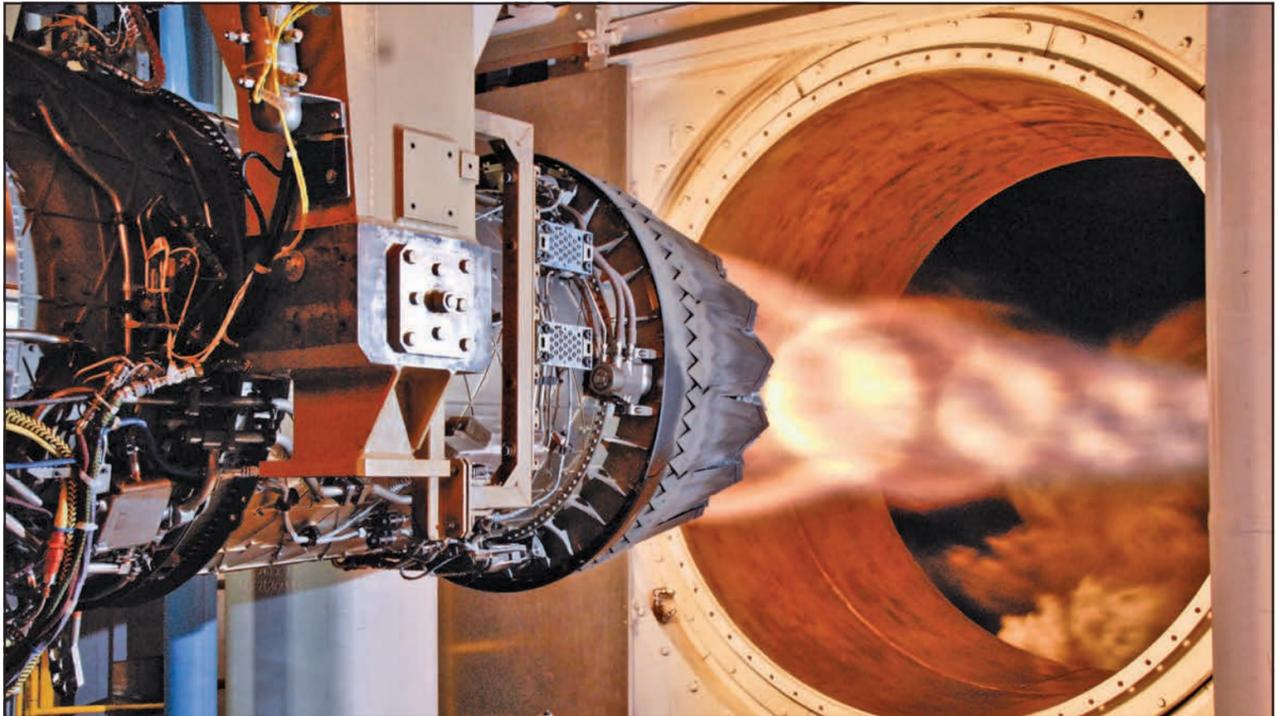
Test results provided integrated aircraft thermal load simulation, as well as led to the re-activation of special test equipment for the F135 that hasn't been used in several years.

Additionally, record test time efficiency of 98 percent was achieved for the test.

Testing was originally scheduled over a period of four months but wrapped up earlier than anticipated.

"The test occurred without any issues at all," Kelly said. "Usually in any test you encounter issues that cause a delay. But with this test we beat our optimistic estimate for completion by a month."

Crew members worked 24-hour operations, five days a week, occasionally even working around-the-clock six days a week. Coordination with test support activities occurred, allowing for the 24-



A Pratt & Whitney F135 engine for the Conventional Take-Off and Landing version of the F-35 Lightning II Joint Strike Fighter completed a record-breaking accelerated mission test in the Sea Level 3 (SL-3) test cell at AEDC. Shown here is a previous test of the F135 in the AEDC SL-3 test cell. (Photo by Rick Goodfriend)

hour coverage.

Record test pace was set while running concurrent operations at other AEDC facilities. Test cell SL-2 was testing the F119 engine for 16 to 18 hours a day and the F101 engine was testing around-the-clock in test cell C-1.

AEDC skilled workers supported user maintenance during the test by providing oil sample collection, engine oil servicing, chip detector removal and inspection, and borescope plug removal and inspection.

"This is notable because in the past we haven't been as involved in the maintenance side," Kelly said.

Rapid project preparation, test cell conversion and engine installation was another factor that helped in completing the AMT within such a short time frame.

See MISSION, page 2

## Veterans ride around Arnold Village



Woodye Bedford (green shirt), from Lynchburg and the owner of the carriage, and AEDC volunteer Denise Counts at the reigns, conduct rides around Arnold Village for the veterans at the AEDC VA Picnic on Oct. 3. (Photo by Rick Goodfriend)  
See story on page 4.

## Arc-heated facilities at AEDC offer unique hypersonic test capabilities

By Rick Gamble  
AEDC Contributing Writer

The AEDC High Temperature Materials Characterization and Evaluation is unique in capability and is supporting test and evaluation (T&E) for current and future hypersonic programs.

Testing materials, such as those for thermal protection systems (TPS), is accomplished by using the Complex's high enthalpy arc-heated facilities to provide test conditions and simulate aeroheating from Mach 8 to 20 hypersonic flight.

Aerothermal ground test simulations over a wide range of velocities and pressure altitudes are conducted by AEDC's experienced high temperature test team. Using the arc heaters, the team is able to expose materials

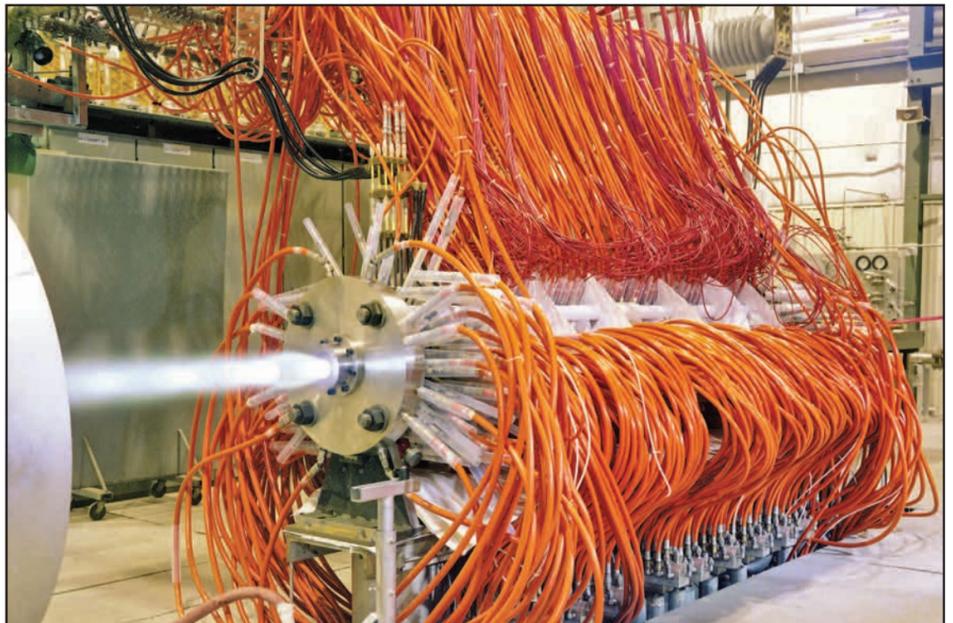
and components for long periods of time necessary to validate thermo-structural performance and survivability.

The team and these facilities support materials and structures development for the Department of Defense and commercial aerospace industry. They have assisted the development of ballistic and hypersonic missiles, re-entry vehicles, high-speed transports, space transportation and space access vehicles, and ordnance and munitions systems.

AEDC has three arc heaters, each with varying capabilities to address different testing needs.

The H1 Arc Heater is a test unit that incorporates a selectable number of cooled, electrically-isolated, stacked segments

See PROGRAMS, page 2



This photo shows the arc heater H3 being test fired prior to the installation of a model injection system. (AEDC File Photo)

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experience



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## HIGH MACH

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An Air Force Materiel Command Test Complex

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### Core Values

- Integrity first
- Service before self
- Excellence in all we do



### Vision

*"ATA will be a trusted partner in delivering best value warfighter support and asset stewardship to AEDC"*

### Core Values

- Be accountable for our own actions
- Ensure the safety of individuals and equipment
- Demonstrate the highest integrity and ethical standards
- Communicate clearly and openly
- Deliver professional and technical excellence
- Nurture, enable and treat people fairly
- Align with customer goals and objectives
  - Use disciplined and innovative processes
- Continually improve in all that we do

# Arnold Police encourage personnel to increase terrorism awareness

By Arnold Police

Recent news headlines have reminded us that the terrorist threat is far from over and that it is not just overseas.

A search can quickly reveal a long list of successful and thwarted plots by extremists here in the U.S. and it is unlikely the plotting will decline.

Over the past year, the Islamic State of Iraq and the Levant (ISIL) has threatened violence against the United States in response to ongoing counterterrorism pres-

sure (Press accounts may sometimes refer to this as "ISIS," - Islamic State of Iraq and Syria). Following the start of U.S. air strikes in Iraq in early Aug. 2014, and then Syria in late Sept. 2014, ISIL supporters launched a Twitter campaign threatening retaliatory violence against the United States. Additionally, ISIL has called for lone offender attacks in the U.S.

There have been reports that as many as 300 Americans have traveled to fight for ISIL. There is concern that these Americans could

return to the U.S. and commit attacks using the skills they learned.

ISIL has called on lone offenders in the US to use the public listings and social media to find addresses of service members "show up [at their homes] and slaughter them." This type of threat reminds us that the Department of Defense (DOD) is a prime target for terrorists.

Defensive awareness and personal security are responsibilities of everyone affiliated with the DOD. We may feel as contractors that we are im-

mune, but someone on the outside may not be able to tell the difference or care.

Here are some tips for protecting yourself and your family:

- Keep a low profile. Do not advertise your DOD affiliation.
- Be unpredictable. Vary your daily routines.
- Be suspicious of unusual interest in your occupation or employer.
- Be alert for suspicious activity: packages, persons, vehicles.

• Think before you post on social media. Always assume everyone in the world will be able to see what you are posting.

It is imperative to be aware of your surroundings and report all suspicious activity to the appropriate authorities.

On base, call Security at 454-HELP. At home, call 911. If you feel you are being targeted (questioned, scrutinized, etc.) due to your DOD affiliation, contact the Air Force Office of Special Investigations at 454-7820.

## PROGRAMS from page 1

to optimize heater efficiency, total enthalpy and flow uniformity. Normal operating conditions produce high stagnation enthalpies and heater chamber pressures up to 120 atmospheres. A programmable rotary model injection system positions up to seven test TPS samples sequentially into the freejet for preset dwell times.

Like the H1, the H2 Arc Heater unit generates high-enthalpy flow at pressures up to 120 atmospheres. However, it also uses a non-segmented Huels arc heater and a hypersonic nozzle to expand flow into an evacuated test cell. Flight conditions between Mach 3.4 and 8.3 are possible.

## MISSION from page 1

The F135 AMT was also a work share between AEDC and Pratt & Whitney teams.

Jeff Albro, the JSF Program Office test and evaluation manager for the F135 engine, stated that AEDC project managers and engineers ensured the customer's requirements for the test were met.

"Everyone who comes to the test site with a company is on travel, and the less people that they need to have here is money saved for the customer," he said.

According to Albro, the test team tried new ways to meet schedule and come under budget, both of which it did successfully.

He added that this project was one of the best he's had the opportunity to be a part of, and as the customer, he was pleased.

"The test was spectacular," he said. "We've never had an AMT come off without a hitch like this one did."

The H3 Arc Heater has sufficient size and performance for testing full- and large-scale missile and reentry samples and structures. H3 is a

12 module, 50 percent geometric scale-up of H1 and operates at over twice the available power level and mass flow, with pressures up to 150

atmospheres.

For future T&E capability, AEDC is replacing the Huels heater in H2 with a segmented heater and upgrading its ex-

haust diffuser. This will enable the test team to reach test conditions required for Conventional Prompt Global Strike (CPGS) by 2017.



**Fuel Your Community!**



**American Red Cross**

**Suburban Propane**

## AEDC BLOOD DRIVE

**10:00am – 3:00pm**

**Tuesday, October 21 – PWT**

**Wednesday, October 22 – A & E**

**Friday, October 24 – Main Cafeteria**

**Location – Red Cross Bus**

To make an appointment, please contact [Susan.brewer@arnold.af.mil](mailto:Susan.brewer@arnold.af.mil).

**Walk-ins accepted.**

Text **BLOODAPP** to **90999** to get the app that helps save lives.\*

All presenting donors during the month of October will be eligible for a chance to win a \$5,000 Visa gift card\*, courtesy of Suburban Propane.

[redcrossblood.org](http://redcrossblood.org) | 1-800 RED CROSS | 1-800-733-2767

©2014 The American Red Cross | 2014-APL-00291 \*All prizes are non-transferable and not redeemable for cash. Message & data rates may apply.

## Smoking Policy

1. The following revised AEDC smoking policy is effective immediately. Smoking is permitted solely in designated areas identified by a plastic "smoke genie." This receptacle is for the sole purpose of cigarette butt disposal. If there is no receptacle, smoking is not permitted in that area. It is the responsibility of all smokers to clean up the area surrounding the receptacles for any cigarette butts on the ground. Smoking in government-owned vehicles is strictly prohibited. Personnel are allowed to smoke in their personal vehicles at any time. Smoking areas will be located to the absolute minimum and will be located in low traffic, low visibility areas away from points of building ingress/egress and air intakes. A map of all authorized smoking areas is available on the AEDC web portal at [https://papro.arnold.af.mil/PORTAL/images/Smoking\\_area\\_map.pdf](https://papro.arnold.af.mil/PORTAL/images/Smoking_area_map.pdf). Smoking near a facility in an area not designated on the map is prohibited and any smoking receptacles located in areas not shown on the map will be removed. All "smoking permitted" and "no smoking" signs will be removed unless specifically required by OSHA.

The fact a person smokes has no bearing on the number of breaks they may take. Breaks should be taken in accordance with the company/agency personnel policies that apply to all employees.

Smoking, including the use of electronic cigarettes and smokeless tobacco, is prohibited in any area, at times when official business is being conducted with government clients, test customers, outside visitors and dignitaries, and where official business is being conducted including conference rooms, auditorium settings, business meetings, or in any other area where Air Force regulations specifically prohibit use. Containers of tobacco waste product, including sealed containers, must not be left unattended or disposed of in trash receptacles. Users of smokeless tobacco must flush tobacco waste down the toilet. Due to the nature, appearance, and safety concerns of electronic cigarettes (also known as "e-cigs"), the use of said products will abide by the same rules for tobacco products stated above and governed by AFI 40-102, *Tobacco Use in the Air Force*.

2. Supervisors at every level will ensure this policy is followed. Disciplinary action is appropriate for repeated violations.

3. Updates to this policy will be made in the future to further align with Air Force guidelines.

4. This policy remains effective until rescinded. (This policy is dated December 20, 2013)

## Action Line

**Team AEDC**

**I believe in free and open communications with our Team AEDC employees, and that's why we have the Action Line available. People can use the Action Line to clear up rumors, ask questions, suggest ideas on improvements, enter complaints or get other issues off their chests. They can access the Action Line in one of two ways: via the AEDC intranet home page, and by calling 454-6000.**

**Although the Action Line is always available, the best and fastest way to get things resolved is by using your chain of command or by contacting the organization directly involved. I encourage everyone to go that route first, then if the situation isn't made right, give us a chance.**

**Col. Raymond Toth**  
AEDC Commander

# AEDC employees get the 'Antiques Roadshow' experience

By Raquel March  
ATA Public Affairs

How many antique items do you have lying around your house, garage or storage that could be valuable? You just need the right venue to tell you the value of those Civil War pieces or of those Chinese rhinoceros horn cups from the 1700s.

And by the way, Chinese rhinoceros horn cups were appraised at \$1.5 million at the Antiques Roadshow in 2011. It was the highest appraisal in the history of the show.

Three AEDC co-workers were able to learn the value of their antique pieces at the Antiques Roadshow in Birmingham on June 21. The Roadshow, which is produced for the Public Broadcasting Service (PBS), is a 12-time Emmy® Award-nominated show which is in its 18th season.

The Roadshow adventure was a different experience than the co-workers expected.

"I was amazed at the number of

people that attend each show that they don't showcase on television," said Jeff Haley, with the ATA Information Technology and Systems Department. "It was a great experience and probably a once in a lifetime ordeal."

Ben Partin, with the ATA Safety, Health and Environmental Branch, and Mike Northcutt, with the ATA Test Assets and Support Department, attended the show with Haley. They didn't attain their tickets easily. Haley's ticket was a surprise given to him by his wife. Partin gave one of his tickets to Northcutt.

Partin said, "When the Antiques Roadshow came to or near Tennessee, I decided to apply for tickets on their website. I tried to get tickets for last year's show in Knoxville but was not chosen. Then, when I saw that the show would be in Birmingham this summer, I applied for tickets and was lucky enough to be chosen to receive two tickets."

Tickets are given to a portion of the people who apply for them and you must have an item, or two at the most, for appraisal. Attendees without an item for appraisal aren't allowed into the Roadshow.



Antiques Roadshow participants wait in line for appraisals at the Birmingham-Jefferson Convention Complex on June 21 where AEDC employees Ben Partin, Mike Northcutt and Jeff Haley had their war memorabilia and family items appraised. (Photo provided)

See ANTIQUES, page 10

## Flu Shot Clinic beginning this week at dispensary

A Flu Shot "Walk-in" Clinic is being held Oct. 20-Oct. 31 at the AEDC dispensary.

During the clinic, flu shots will be available for base civilian personnel including ATA and subcontractors, as well as DOD civilians without TRICARE.

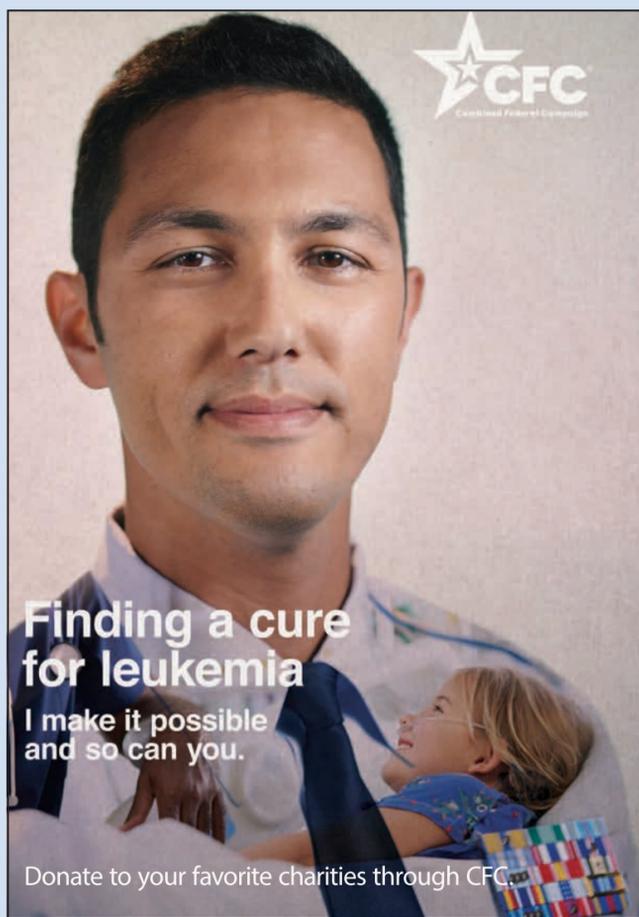
The cost will be \$15, and payment for flu shots should be made with exact cash or a check made out to ATA.

First and second shift employees may come to the dispensary any time between 12-3 p.m. while the clinic is taking place. No appointments are necessary but please be aware there may be a lengthy wait. Be flexible and willing to return if your schedule does not permit you to wait.

Third shift employees must call 454-5385 to set up an appointment. This will ensure that employees work schedules and clinic schedules are coordinated.

Flu shots will be administered clinic style and will be given on a first come, first serve basis. Supplies are limited, so please plan accordingly. For any questions, call 454-5385.

## AEDC Combined Federal Campaign event begins



By Raquel March  
ATA Public Affairs

AEDC organizers are gearing-up for the 2014 Combined Federal Campaign (CFC).

The goal is to raise \$60,000 during the AEDC CFC through Nov. 14 and participants may pledge online at [https://www.cfc-nexus.org/\\_tregional-cfc/](https://www.cfc-nexus.org/_tregional-cfc/).

CFC is the world's largest annual workplace charity campaign. The campaign is a chance for AEDC military and DOD civilian personnel to make a one-time donation or a scheduled monthly payroll deduction donation to a charity or charities of their choice. Since its inception in 1961 the program has received donations in excess of \$7 billion from the federal community.

Last year AEDC federal personnel donated \$53,872 to various chari-

ties.

During the week of Nov. 3-7, CFC organizers will hold the CFC Blitz.

"Our goal during CFC Blitz week is to reach 100 percent contact of DOD civilians and military and 100 percent pledge cards turned in," said Karen Steele, AEDC CFC chairperson.

The mission of the CFC is to promote and support philanthropy through a program that is employee focused, cost-efficient and effective in providing all federal employees with the opportunity to improve the quality of life for all.

Federal employees review all the charities on an annual basis. Only those that meet high standards can participate in the CFC. More than 2,000 organizations have been approved to participate in this year's campaign.

For more information all 454-5915 or 454-5343.

## AEDC pioneer visits wind tunnels he helped design



Robert Tatro, right, grandfather of ATA engineer Ryan Tatro, left, recently visited AEDC to tour propulsion wind tunnels 16T and 16S, which he helped to design almost 60 years ago. (Photo by Rick Goodfriend)

By Deidre Ortiz  
ATA Public Affairs

Eighty-nine year old Robert Tatro had the opportunity to return to AEDC to see the developments made since he was employed at the base in the mid-to-late 1950s.

Though now residing in San Diego, Mr. Tatro once worked at Arnold Air Force Base as an engineer for ARO, Inc., a subsidiary of Sverdrup & Parcel organized in 1950 to manage and operate AEDC.

Mr. Tatro graduated in 1949 from the University of Illinois with a bachelor's degree in Aerospace Engineering and in 1951 went to work for Sverdrup & Parcel in St. Louis as a member of the original AEDC design team. He later moved to Tullahoma to join ARO as one of the designers of the exhaust gas scavenging and air-makeup air supply systems for the 16 foot transonic and supersonic wind tunnels. From 1953 to 1956 he worked under the direc-

tion of Heinrich Romm and Dr. Bernard Goerthert in the Propulsion Wind Tunnel (PWT) branch.

He was invited back to AEDC for a visit by his grandson, Ryan Tatro, ATA Flight Systems Test engineer. The tour of 16T and 16S was the first time that Mr. Tatro had seen the scavenging systems installed.

Most of the facilities at the Complex today had not been constructed when Mr. Tatro worked at AEDC so it was also exciting for him to see how it all came together. After the visit, he said, "Touring AEDC was the highlight of my trip. AEDC is one of the best places to start a career. It is a shame that so many people have no idea that a place like this exists, even other people in the aerospace industry."

In addition to his work at AEDC, Mr. Tatro is a U.S. veteran, having served in the U.S. Army Air Forces as a P-51 pilot stationed at Iwo Jima during WWII.

# Local veterans attend AEDC VA picnic

By Raquel March  
ATA Public Affairs

Veterans from the Tennessee Valley Healthcare System at the Alvin C. York Campus in Murfreesboro attended the AEDC VA Picnic on Oct. 3, where they received donated items and enjoyed special activities.

Tech. Sgt. Kristopher Boal, with the AEDC Test Support Division and the coordinator for the picnic, said giveaway items were provided by several local groups.

"The AEDC Spouses Club did a fantastic job at preparing cookies and baked goods - most of which contained no sugar as a diabetic option," Boal said.

The Arnold Community Council donated items to the local chambers of commerce for the veterans such as personal hygiene products and clothing. There were also surplus care packages, normally intended for Active Duty troops downrange, which were donated by Operation

Caregiver.

The veterans received a barbeque meal and they were able to participate in a boat ride around Woods Reservoir, a horse drawn carriage ride around Arnold Village and listen to music performed by the band "John Westley Satterfield and his Fine Band." Boal said a few of the veterans "even got up to dance for a little while."

Boal expressed the importance of hosting an annual event such as the AEDC VA Picnic.

"The VA picnic is extremely important, not only to the veterans who it is in honor of; but for all of AEDC and the local community as well," he said. "It's one of many opportunities that we as an Air Force Base and a community can show support. Every veteran in attendance has fulfilled their service commitment in defense of our nation and are now hospitalized. It's such great feeling to have the opportunity to give a little back in appreciation for what they



Pictured here, left to right, is Jesse Isley, Zack Brindisi, John Wesley Satterfield and Tommy Perkinson with the group "John Westley Satterfield and his Fine Band." The band performed for the veterans who attended the AEDC VA Picnic on Oct. 3. (Photo by Rick Goodfriend)

have done. For those who spend their lives as hospital patients, it is easy

to understand that daily life can become hard to deal with. The VA pic-

nic at Arnold AFB is one of the annual events the disabled veterans look

forward to year after year and I am proud to have been a part of it."

## AF energy initiatives increase mission readiness

By Staff Sgt. Torri Ingalsbe  
Air Force Public Affairs Agency

WASHINGTON (AFNS) – The Air Force's top leaders for energy programs highlighted strides the Air Force has taken in energy conservation, and discussed innovative ideas that will lead to even more cost and energy savings,

during the Air Force Association's monthly breakfast Oct. 8, in Arlington, Virginia.

"Energy plays a big part in everything we do," said Roberto Guerrero, the deputy assistant secretary of the Air Force for energy. "For us to succeed in our bottom-line mission, to fly, fight and win in air, space and cyberspace, we have to look at how we expend energy and turn the conservation of that energy into an advantage to roll back into capability."

Energy takes up 9 percent of the overall Air Force budget, he explained, and aviation fuel is the largest piece of energy consumption – totaling about \$8 billion. The Air Force has implemented systems designed to offset some of that cost while finding energy from other sources.

"As we speak right now, up at Cape Cod Air Force Station, we've got a number of giant wind turbines cranking and powering about 50 percent of the operations at that location, including one of the largest, ground-based missile warning radars in the United States," said Miranda Ballentine, the assistant secretary of the Air Force for installations, environment



Miranda Ballentine answers questions relating to the Air Force's environment and energy during the Air Force Association breakfast Sept. 23, series in Rosslyn, Virginia. Ballentine is the Assistant Secretary of the Air Force for Installations, Environment, and Energy. (U.S. Air force photo/Staff Sgt. Anthony Nelson Jr.)

and energy. "The radar requires significant amounts of energy – in fact, \$1.6 million a year worth of electricity."

By utilizing wind energy, Cape Cod diversifies its energy dependence and saves the Air Force almost \$600,000 a year.

"That's \$600,000 a year that we can plow right back into readiness, right back into flight times, right back into training," Ballentine said. "When we build diversification into the system, it really improves the resiliency of that system and reduces the demand for dirtier fuel sources."

Several other bases have implemented programs and processes to conserve energy and reduce the Air Force footprint.

"The technology that's developed over the years is constantly allowing us to look at the way we do business...in order to increase our range, reduce our energy footprint and increase our capability," Guerrero said. "All Air Force aircraft now have at least two different types of alternate fuels they can run on."

Other technologies include: electric cars, airframe modifications to increase efficiency, supplementing equipment with lighter options, and adjusting flight routes to save fuel. The savings realized by the combined initiatives totals more than \$100 million.

"We're trying to increase the energy awareness culture and have folks, on their own, give us more bottom-up type of ideas that'll address our energy needs," Guerrero said. "What we want is to be able to turn those energy savings into more modernized structures, better trained Airmen, enhanced capabilities of our aircraft, and strategic options for us. We can fly farther and do more than we have in the past. The bottom line – energy savings enhance mission readiness."

Power the Force. Fuel the Fight.



I AM AIR FORCE ENERGY

October is Energy Action Month

"Go Green Wednesdays"  
Wear a green shirt every Wednesday throughout October to help boost Energy Awareness

"Energy Expo"

Oct. 22, 10:30-11 a.m.  
Main Auditorium  
TVA tips and tricks on saving "Energy @ Home"

# 'Where's your head?' when it comes to safety

## Safety, Health and Environmental

Most of us are familiar with the phrase "Keep your head in the game." In sports, it reminds players to avoid distractions and focus on their role in the game.

To do this, each player needs to know where the other players are and what they are doing, and to anticipate the next move. They must be alert and focused – at peak performance – anticipat-

ing multiple possibilities and ready to react.

The same can be said about working safely. To be safe, we must keep our heads in the game. We must be aware of the hazards around us and be aware of others who are working with or near us.

Several recent incidents have involved people bumping their heads – simply unaware of how close they were to objects.

As employees, we have the responsibility to

recognize the safety and health hazards associated with each job, task and worksite, and to know how and to whom to report concerns.

Management has the responsibility to investigate incidents, including near-misses, and to conduct an analysis to identify lessons learned to prevent recurrence. Together we can foster a culture of workplace safety and accountability and ensure that we return home each day as safe – or safer –

than when we reported to work.

What are our safety expectations?

1. To expect safe behavior from ourselves and our co-workers.
2. To have the courage to speak up, intervene, and change plans or behavior to demand a safe work environment.
3. To think through the work and plan safety into each

task.

4. To be accountable for our own actions and believe that incidents are preventable.
5. To maintain situational awareness and taking care to avoid complacency.
6. To choose the best travel path, which may not be the shortest path.
7. To report, measure, learn, and share information to con-

tinuously improve safety.

8. To ensure a good check-in not only at the beginning of the job, but also if it changes.
9. To leave the work area in such a way that it doesn't create hazards for the next person.
10. To watch out, speak up, and work safely because we care about ourselves and others.

## Safeguarding your digital footprint

By Tech. Sgt. Steve Grever

*Air Force Public Affairs Agency*

**WASHINGTON (AFNS)** – Social media is a great resource for Airmen and their families to share information and stay connected to relatives at home and abroad.

Although many depend on these wonderful tools, recent events have encouraged us to re-evaluate our digital footprint to ensure our personal and professional information is protected from online predators and individuals who want to do us harm.

While social media use can be entertaining and informative, it poses potential operations security weaknesses, and Air Force Instruction 1-1, Air Force Standards, provides guidance on appro-

priate social media use by Airmen.

OPSEC and personal privacy concerns should be paramount when using social media. Military members have recently been threatened on social media by terrorist organizations looking for information they can use to harm military families and disrupt Air Force operations.

The following tips will make it more difficult for unwanted users to acquire your data through social media:

- Be cautious when accepting friend requests and interacting with people online. You should never accept a friend request from someone you do not know, even if they know a friend of yours.
- Don't share infor-

mation you don't want to become public. Remember, once you put something out there, you can't control where it goes.

- Disable location-based social networking, or geotagging, on all social media platforms. Geotagging is the process of adding geographical identification to photographs, video, web-

sites and text messages.

- Avoid posting work or personal schedules and travel itineraries, especially deployment information and return dates for yourself, a loved one or a unit.
- If you ever hesitate before clicking 'post', reconsider the content you are about to share. Our team follows the motto: When in

doubt, throw it out!

- Adjust your privacy settings to ensure your posts and profile information is secured and seen only by approved audiences. This last tip applies to any social media platforms you may use, but since Facebook is the most widely used, we want to share this detailed how-to guide on how to secure your

profile.

Practicing good OPSEC and helping family members follow these security measures is essential to protecting personal and mission-critical information on social media. If you ever feel you are being threatened or you notice vulnerable information online, be sure to alert the social media platform's help center and your local OPSEC manager for assistance.

# Airmen keep F-16s rolling

By Tech. Sgt.  
Eric Donner  
31st Fighter Wing Public  
Affairs

**LASK AIR BASE, Poland (AFNS)** – The F-16 Fighting Falcon is a highly technological, maneuverable, multirole fighter aircraft capable of reaching speeds of Mach 2 when in the air, but without wheels and tires, it is nothing more than a static display.

The Airmen of the 31st Maintenance Squadron's wheel and tire shop ensure the multimillion-dollar F-16s are able to taxi, take off and land safely.

"The only way the aircraft can take off and land is with wheels and tires," said Staff Sgt. Troy Metivier, a 31st MXS wheel and tire specialist. "It is just as important as any part of the aircraft."

When looking at the complexity of an aircraft, it is easy to see why the simple wheels and tires can be overlooked. However, if this simple piece of equipment fails, it can cause a lot of damage.

"Preventative maintenance makes it cheaper in the long run," Metivier said. "Like replacing the tires on your car, it helps ensure the aircraft has traction on the tarmac and avoid accidents."

"A lot of effort goes into working on the wheels and replacing the tires. There is more to the process than many people think and it's not that easy."

When a tire has exceeded the max wear limit it is replaced and the wheel is thoroughly cleaned and inspected. Each part of the wheel is hand cleaned and inspected for any abnormalities that may compromise the wheel or tire.



**Staff Sgt. Troy Metivier, left, and Senior Airman Taylor Hendricks clean an F-16 Fighting Falcon's main wheel before inspecting it for any abnormalities Sept. 22, at Lask Air Base, Poland. The Airmen, of the 31st Maintenance Squadron's wheel and tire shop, ensure the multimillion dollar F-16s are able to taxi, take off and land safely. Several F-16s from the 510th Fighter Squadron and Airmen from the 31st Fighter Wing at Aviano Air Base, Italy, arrived at the U.S. Air Force Aviation Detachment to participate in bilateral training with Poland. (U.S. Air Force photo/Tech. Sgt. Eric Donner)**

After passing a final inspection, the wheel is reassembled and a new tire is put on.

"The process of breakdown, cleaning and inspection takes approximately an hour," Metivier said. "There is an additional three-hour wait time to ensure the rubber expands and a 12-hour wait to ensure the tire holds air pressure."

At home station, the process is routine, although time-consuming. While deployed, the back shop has to transport all of the equipment needed to change the tires and con-

duct the wheel inspections, which can complicate the routine process. With the partnership of the Polish air force's wheel and tire shop, Airmen here have everything they need.

"The Polish air force has everything we need to change out a tire," Metivier said. "The only items we need to bring are the bench stock and tools. It saves a lot of room when deploying. If we couldn't use these facilities, we would have to pack an additional

pallet of equipment."

"The use of Polish facilities not only enables us to work from a forward deployed location in Poland but also gives the Airmen a chance to share knowledge with each other," he said.

"It is a great opportunity to see how they do their job and their process," said Senior Airman Taylor Hendricks, a 31st MXS wheel and tire specialist. "Their processes may be something we can learn and take back to our shop."

As NATO allies, it is important that all facets of the mission have the ability to work together successfully. The opportunity for the maintenance Airmen to work together builds rapport and interoperability between the two air forces.

"Our processes are very similar, and we don't have a problem helping out," said Polish air force Senior Sgt. Przemyslaw Dudzicki, (equivalent to U.S. Air Force staff sergeant) the wheel and tire

shop NCO in charge. "We also have a chance to work together and practice our English."

The F-16s from the 510th Fighter Squadron and Airmen from the 31st Fighter Wing at Aviano Air Base, Italy, are here conducting joint training as part of the rotation at the aviation detachment. The 31st FW is supporting NATO exercises and bilateral training with the Polish air force designed to increase interoperability.



## Ready for the 'Real World'

**An F-16 Fighting Falcon takes off Sept. 25, during Distant Frontier at Eielson Air Force Base, Alaska. The F-16 is assigned to the 18th Aggressor Squadron. Aggressor pilots are trained to act as opposing forces in Red Flag-Alaska, to prepare U.S. and allied forces for real-world aerial combat. (U.S. Air Force photo/Staff Sgt. Jim Araos)**

# 6 new AF Material Command units to form installation and mission support center

**JOINT BASE ANDREWS, Md. (AFNS)** – Six Air Force organizations moved under Air Force Materiel Command Oct. 1, in a step toward integrating and forming the foundation of the Air Force Installation and Mission Support Center when the center is formally activated in 2015.

The Air Force realigned four field operating agencies – the Air Force Civil Engineer Center, Air Force Financial Services Center, Air Force Installation Contracting Agency and Air Force Security Forces

Center – to AFMC. Two additional organizations – the Air Force Cost Analysis Agency's Financial Management Center of Expertise and the Air Force Personnel Center's Services Directorate – were also realigned to the command.

Activated provisionally Aug. 8, AFIMSC will be the single intermediate-level headquarters providing installation and expeditionary support for commanders at Air Force installations and major commands, said Maj. Gen. Theresa Carter, the center's provisional commander.

“Our major commands have told us they are committed to making the AFIMSC successful,” she said. “When asked to define what it means to be successful, they said it needs to be a responsive, mission-focused organization that uses transparent processes to integrate requirements and deliver support to our installations, our Airmen and their families. The six organizations joining the AFMC and AFIMSC(P) team today will help us meet those requirements, now and in the future.”

The center will provide program manage-

ment, resourcing and support activities in key areas previously provided by 10 MAJCOMs, two direct reporting units and multiple FOAs. AFIMSC's installation support capabilities will include security forces, civil engineering, base communications, logistics readiness, installation ministry programs, services and operational contracting.

In addition to helping the Air Force make the best use of limited resources to manage and operate its installations, the activation of AFIMSC will help the Defense

Department reduce costs and management staff levels by at least 20 percent.

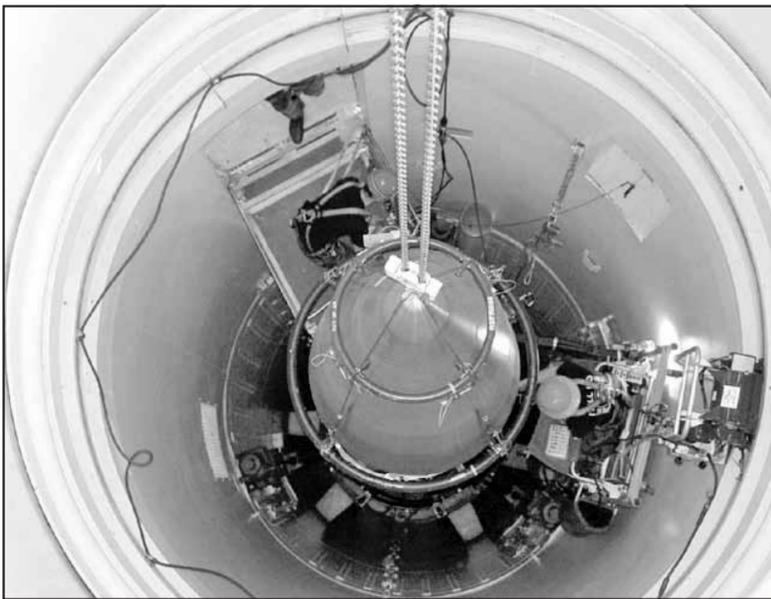
“Centralized management of installation support capabilities at AFIMSC affords opportunity to make strategic decisions for the Air Force on installation support, maximizing the available resources,” said Gen. Janet Wolfenbarger, the AFMC commander.

The Air Force is using its standard strategic basing process to evaluate candidate locations for AFIMSC headquarters and is scheduled to

select a permanent location that best serves the mission of the center in early 2015. Eventually 350 people will be assigned to the headquarters.

The 10 candidate headquarters locations are Barksdale Air Force Base, Louisiana.; Ellsworth AFB, South Dakota; Hurlburt Field, Florida; Joint Base Andrews, Maryland; Joint Base Langley-Eustis, Virginia; Joint Base San Antonio, Texas; Peterson AFB, Colorado; Scott AFB, Illinois.; Tyndall AFB, Florida; and Wright-Patterson AFB, Ohio.

## Modernizing ICBM sustainment



**A Malmstrom Air Force Base missile maintenance team removes the upper section of an intercontinental ballistic missile at a Montana missile site. The section was picked at random for a “glory trip,” or a test launch, at Vandenberg AFB, Calif., in August 2014. The launch allows Malmstrom and Vandenberg AFB officials to observe a launch to gather data on the weapon system's performance, accuracy and reliability. (U.S. Air Force photo/Airman John Parie)**

**By Kate Blais**  
*Air Force Global Strike Command Public Affairs*

**BARKSDALE AIR FORCE BASE, La. (AFNS)** – In an ongoing effort to better manage the sustainment of intercontinental ballistic missiles, Air Force Global Strike Command has implemented an ICBM Parts Centralized Funding program designed to help alleviate budgetary pressure on missile wing leadership.

Leaders in the ICBM community have applauded this effort as one of the most important improvements to ICBM sustainment activities since ICBMs went on alert in 1960.

The centralized funding program is AFGSC's first attempt to bring funding used for purchasing missile system parts, which previously resided at the wing, up to the major command level. As of Oct. 1, the beginning of the 2015 fiscal year, AFGSC is responsible for day-to-day funding of the weapon system's parts costs.

“What happened before was that wings had to choose between whether or not to buy a missile part or buy something to support their people,” Daryle Fry, an AFGSC ICBM program analyst said. “That is a choice a wing commander shouldn't have to make.”

Any item that an ICBM technical order covers is considered part of the

weapon system and will be centrally funded. Basically, anything used in direct support of the weapons system is covered, Fry said.

“As of Oct. 1, a technician can go into supply and ask to order a part without being concerned about funding,” Fry explained. “The wing orders the parts it needs, and the bill gets sent to AFGSC. Wing commanders can focus more on their people and support structure and 20th Air Force won't have to worry about advocating to command to find funding for parts.”

The shift in funding responsibility not only decreases the sustainment burden that once resided at the wing level, but will allow AFGSC to determine the weapon system's true requirements.

“Before, I couldn't tell you what the true requirement was, because in the old days the requirements were based off of funding avail-

ability and parts orders were deferred sometimes to pay for other priorities,” Fry said. “Now unit funding availability is not really a factor anymore. Requirements will be driven by a true weapon system need.”

Fry expects the centralized funding to remain at AFGSC for about a year while the command determines the requirements. After, funding will be elevated up to Headquarters Air Force and ICBMs will be funded like the service's other weapon systems.

“The entire Air Force is aging, but while the rest of the Air Force moved on with sustainment, ICBMs did not, but we're changing that now,” said Lawrence Kingsley, the logistics, installations and mission support director at AFGSC. “My priority is to modernize how the ICBMs are maintained and sustained. This centralized funding program is part of that effort, and will allow AFGSC to be-

come proactive, as opposed to reactive, in our approach to managing the ICBM force.”

This program will not only help AFGSC determine the true requirements, but Fry said he anticipates that it will fix a lot of second and third order effects that cause improper weapons sustainment.

“It fixes supply issues that aren't addressed until the last minute,” he continued. “It allows us to do programming and budgeting because we'll have accurate information on what our true requirement is. We'll have forward thinking plans and better life cycle management.”

In the long run, the program will start to reverse the effects of failing equipment, which will in turn reduce man hours, increase weapon system reliability and improve the overall performance of the weapon.

The effort began in 2009 when AFGSC became the Air Force's newest MAJCOM and merged the ICBM and bomber communities. Combining the two legs of the nuclear triad allowed for cross-flow of information and ways of doing business.

“I believe we've moved off the island and moved onto a continent,” Fry said. “That has broadened our perspec-

tives and horizons to see that there are other ways of doing things more efficiently. There are better ways to do things and make Airmen's lives easier in the field.”

Better ways of doing things locally have impacts globally.

“ICBMs are on alert underground 24/7, 365, and have been for more than 50 years,” Kingsley said. “ICBMs are the cheapest insurance policy this nation has and the ultimate defense against strategic attack. For that reason, it is imperative that we work to maintain and sustain these weapons in the most effective and efficient way possible.”



# ATA awards Vocational Technology Scholarship to Shelbyville student

By Raquel March  
ATA Public Affairs

ATA continued a commitment to Science, Technology, Engineering and Mathematics (STEM) support in 2014 by awarding a \$1,000 Vocational Technology Scholarship to Tyler Cooper, a Shelbyville resident and son of ATA employee James Melton.

Cooper is enrolled at the Tennessee College of Applied Technology in Shelbyville and finished his first year with an A average. He expects to graduate in August, 2015.

The ATA Vocational Technology Scholarship Program was created to support post-secondary industrial education related to ATA's mission and operations.

"ATA employs a workforce of men and women who are experienced and skilled in mechanical, electrical and industrial systems and crafts," said ATA General Manager Steve Pear-

son. "Their knowledge, skills, and abilities are critical to successful facility and test support. This program supports vocational training toward that level of expertise, whether students eventually work here or at other industrial complexes."

Students who applied for the scholarship must have majored in industrial full-time programs such as Drafting and CAD; Heating, Ventilation, Air Conditioning and Refrigeration (HVAC); Industrial Electricity; Industrial Maintenance; Welding; Machine Tool Technology; Aviation Maintenance Technology; Mechanical Engineering Technology; Electrical Engineering Technology or Mechatronics.

To be eligible for the scholarship, the applicant must have been a dependent of an employee.

Cooper is the last recipient of the Vocational Technology Scholarship since the ATA support contract will conclude in 2015.



Tyler Cooper (second from left) accepts a \$1,000 ATA Vocational Technology Scholarship from Susan Davis (left), with the ATA Human Resources Branch. Cooper is joined by his father and ATA employee James Melton. (Photo by Rick Goodfriend)

## Global access can also mean global cyber crime

By Airman 1<sup>st</sup> Class  
Zade C. Vadnais

18<sup>th</sup> Wing Public Affairs

**KADENAAIRBASE, Japan (AFNS)** – October is National Cyber Security Awareness Month, which has become increasingly important in recent years as global Internet use continues to grow exponentially.

It is estimated that about eight new users access the Internet every minute as technology spreads to developing countries. On average, there are one million victims of cyber-crime across the globe every day, and most of them are new Internet users who could have avoided the attack if

they were more educated on cyber security.

"The goal of cyber awareness month is to take steps to make sure you are not one of those victims in your professional network life and your home network life," said 2nd Lt. Kristoff Kalau, 18th Communications Squadron officer in charge of cyberspace support systems.

According to Kalau, the most common and easily detected cyber-crime is phishing. Phishing is a malicious attempt by hackers to acquire sensitive information, such as passwords and credit card numbers, through electronic media. Hackers often pretend to represent a bank or other trusted source in order to

lure victims into disclosing information the hacker can then use to access their finances.

Kalau said the most common indicator of a phishing email is spelling and grammatical errors, which would likely not be found in an official email from a reputable organization to its customers. Unreasonable time limits are common as well, as hackers often try to panic users into disclosing sensitive information by claiming their credit card will be deactivated or their credit score will be negatively impacted if they do not act immediately.

Users who suspect they have received a phishing email in their work inbox

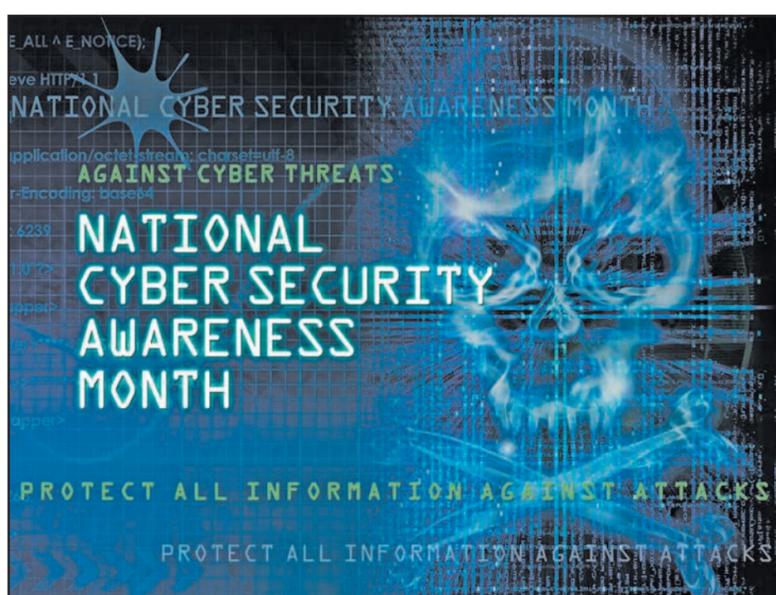
should take action immediately to ensure the incident is logged and the threat can be monitored. The squadron-level information assurance officer can take the information from the email and forward it to the wing IAO, who will compile base-wide statistics and determine what action needs to be taken.

"It is purported that this is a \$113 billion in-

dustry across the globe," Kalau said. "It's very serious because it can attack your personal finances, your work relationships, destroy your personal life, cause embarrassment; things that ultimately make you less capable of performing your job."

Although an estimated \$38 million in damages was caused by cyber-crime in the U.S. alone last year, hackers gener-

ally pick up low-hanging fruit and are unlikely to exert a lot of effort to hack into someone's personal files or finances unless the target is a celebrity or a billionaire. National Cyber Security Awareness Month aims to spread awareness about hackers and their techniques in order to reduce the number of victims in future years and stop the number from rising this year.



The goal of National Cyber Security Awareness Month, which takes place each year in October, is to spread awareness about hackers and their techniques in order to reduce the number of victims in future years. On average, there are one million victims of cyber-crime across the globe every day, and most of them could have prevented the attack if they were more educated on cyber security. (U.S. Air Force graphic by Naoko Shimoji)

# AEDC Woman's Club guest appraises 'stuff'

By Barbara McGuire  
AEDC Woman's Club

The Nov. 4 meeting of the AEDC Woman's Club (AWC) will be about "It's Just Stuff."

Connie Sue Davenport, an antique and personal property appraiser, will be appraising antiques brought to the Lakeside Center for the AWC meeting. How wonderful to have these items looked at and evaluated.

Davenport has been appraising antiques since 1982. As an accredited member of the International Society of Appraisers, she helps families value and manage accumulations, collections, and in-

heritances. You may have read her column titled "It's Just Stuff" in The Tennessee Magazine. Davenport frequently speaks to groups regarding the impact of "stuff" on our lives.

Also, the table donations at the November meeting will be donated to the Hospice Foundation.

Anyone can attend the AWC at the Arnold Lakeside Center to get to know the wonderful AWC ladies and be involved with AWC programs. You do not need to have military connections or be involved with Arnold Air Force Base to visit and become a member.

For information about the AWC contact Susan

Harris, the AWC membership chairman, at 455-3569.

The social hour of the meeting starts at 9:30 a.m. at the Lakeside Center, with the business meeting and program beginning at 10 a.m.

Reservations and cancellations for the Oct. 7 meeting must be made no later than noon, Sept. 30. You may make reservations or cancellations by contacting Liz Jolliffe at 393-2552 or Jane Ricci at 931-636-4152.

*Disclaimer: This is a private organization which is not part of the Department of Defense or any of its components and has no governmental status.*



Shown here left to right is AEDC Woman's Club (AWC) members Emily Cunningham, Kitty Ball and Peg Austin holding a Dazey glass butter churn, made in the 1940s. AWC guest speaker Connie Sue Davenport, an antique and personal property appraiser, will appraise items such as the Dazey at the Nov. 4 meeting of the AWC. (Photo provided)



## ANTIQUES from page 3



Ben Partin, with the ATA Safety, Health and Environmental Branch, stands in front of the Antiques Roadshow banners near the exit of the Birmingham-Jefferson Convention Complex after having his items appraised at the show on June 21. The exit is near the Feedback Booth where Roadshow participants are able to talk about their appraisal experience. (Photo provided)

For a one-day Roadshow appraisal in New York in August, 18,000 people applied for tickets and only 3,000 tickets were awarded.

Each of the co-workers took war memorabilia for appraisal and some family items.

"I took a hand-woven Navaho rug that I had purchased locally from a friend who had inherited it from his aunt," Partin said. "My Navaho rug was authentic with good colors and was 70-80 years old. Unfortunately, they made thousands of them and it was worth \$200-300. My other item was a small collection (and collections count as one item) of Civil War artifacts I have dug up over the years."

Haley and Northcutt's war items were collections as well.

Haley's collection was WWII shoulder sleeve insignia that he had collected since childhood. He said he was surprised to find out the appraisal of some of the insignia.

Northcutt said, "I took an extensive collection of Jack Daniel Distillery memorabilia – bottles, jugs, family papers and pictures from the late 1800s. My second item was a collection of WWI items from my wife's step-great grandfather. He was a photographer during WWI and had authentic, original war pictures, some medals and paperwork."

Northcutt received an ample appraisal for the Jack Daniel items but he was "a little disappointed in the appraisal of the WWI items."

Although the group's items appraised well, they didn't qualify for filming.

There isn't a guarantee that Roadshow partici-

pants will be seen on the broadcast production of Antiques Roadshow.

Partin saw other Roadshow participants have their items filmed as he waited several hours and was directed to move from line to line in order to show his war memorabilia.

"While in each of the lines, I got to observe the filming of certain items in the center of the [production floor] area that could be on one of the future shows," Partin said. "But before items chosen by the appraisers could be filmed, they had to be approved by the [show] producer. They had to be 'show worthy.' That is, they had to be interesting, or rare, or worth a lot of money, or had a good story to go along with it."

"I saw the appraisals being filmed for a couple of small vases; a large, old document what had a long,

red ribbon attached with a gold seal on it; and a small, silver loving cup that was appraised for \$4,000 - 6,000."

When the appraiser sees an item that qualifies for filming, they alert the producer and the appraisal is held for an "unbelievable" reaction from the Roadshow participant.

Partin, Northcutt and Haley were able to learn more about their items and had an experience of a lifetime.

"It was a real learning experience and a lot of fun. I got to see how the whole show worked behind the scenes," Partin said. "I would like to do it again but this was probably a once-in-a-lifetime experience."

The Antiques Roadshow that was filmed in Birmingham is scheduled to broadcast in January 2015.



Shown here is the Navaho rug Partin took for appraisal to the Antiques Roadshow at the Birmingham-Jefferson Convention Complex on June 21. (Photo provided)

# Cyber: The new Red Flag battleground

By Senior Airman

Jette Carr

Air Force News Service

**NELLIS Air Force Base, Nev. (AFNS)** – The internet is a battleground, and information is the prize. News reports of a shopping retailer losing control of customers' digital data and an internet browser being compromised are some of the recent evidence of the constant cyber-threat present in the World Wide Web.

The digital war over information is one Air Force cyber specialists fight on a daily basis. To give these Airmen an upper-hand against their online adversaries, the 24th Air Force takes part in several training exercises, to include Red Flag.

Red Flag is large scale combat training exercise held multiple times per year and hosted at Nellis Air Force Base, Nevada, that gives air, space and now cyberspace service members from the U.S. and allied nations the ability to come together to train as a team. Air, Space and Cyber domains are integrated between tactical and operational level participants during Red Flag at the Combined Air Operations Center – Nellis (CAOC-N)/505th Test Squadron. Through the exercise, each organization learns to work together to form a stronger total force, while also being shown how their individual talents fit into the bigger picture.

Cyber first played a part in the Red Flag exercise series in 2007, said Daryl Crissman, the 318th Cyber Operations Group, Detachment 2 chief of weapons and tactics. At first their initial involvement was limited and only made up a small portion of the simulated mission. Over the past two to three years, however, Cyber has made measurable gains in becoming a fully integrated component of the exercise.

"Our mission is to train the next generation of cyber warriors and we look at what we call the full spectrum ... defensive and offensive operations," said Michael Homsy, the

24th Air Force exercise planner and cyber range coordinator. "We have several teams that are being developed ... teams that are designed to go after the adversary and their infrastructure and degrade their ability to launch their capabilities against us, as well as defend critical infrastructure as it pertains to our country."

Though the 24th AF participates in other annual exercises, such as Black Demon and Cyber Flag, Homsy said Red Flag is considered the capstone event. Due to the scope of the exercise, they are able to participate with a wider range of cyber applications to support other Air Force components, such as air and space.

"Red Flag has always been primarily focused on the flying community," Homsy said. "It is designed to give the new pilots their first operational missions. Cyber has only really come into its own in the last few years. We had to show that we could accomplish our training objectives without impacting the flying training objectives. We had to show that we can add value to the overall exercise by being a part of the exercise, and we were able to do just that."

In February 2012, cyber Airmen were given a chance to actively play their part in the exercise through the help of a new training network. With the new setup, they were able to give a tangible example of their capabilities while defending the combined air operations center at Nellis AFB.

"In Red Flag 11-3, we brought the Joint IO Range," Crissman said. "It is a closed network that we're allowed to play on and bring ... our tools and our weapon systems."

The Joint IO Range is a cyber-range that is used during the exercise as a training ground for cyber assets, Crissman said. It is modeled after the Air Force's network, but is completely separated; therefore it doesn't affect any other active networks. It gives Airmen the distinct advantage of trying new systems, defenses and

attacks prior to deploying them in a real-world environment.

"One of the things that we've been working on in the past year is presenting a contested, degraded, and operationally limited environment for the training audience and presenting them with a problem and making them solve it," said Julie Fluhr, a 505th Test Squadron non-kinetic operations subject matter expert. "One of the advantages to Red Flag is, because it is a closed system, we can allow the aggressors to do things that they can't do on real-world networks."

During the three week exercise, Airmen are given a mission tasking based on a given scenario. Each week of Red Flag increases in difficulty. As the participants become more practiced and familiar with the scenario, the bar is raised. As the exercise further develops, Airmen are able to adjust their tactics and procedures to reach their objectives.

"They break down what happened during the course of the (debrief) period to see what actions were taken -- what defensive actions; were they successful or not?" Homsy said. "And that's when the real learning begins, because you're now deconstructing the actual actions."

"Basically, they are looking at what went wrong and then do a recon analysis on it," he said. "What went wrong? Why did it go wrong? What can we do to fix it next time? Then they go back and integrate that into the next stage of planning, so they don't make the same mistake again."

Participants in Red Flag are also encouraged to learn about different aspects of the total force in order to work together more effectively and cohesively.

"Red Flag is integral in showing operators how we affect the air picture and how we can actually integrate with the flying community," said Tech. Sgt. Scott Karter, the 92nd Information Operations Squadron NCO in charge of operations training.



**Army Chief Warrant Officer 2 Michael Lyons, Joint Tactical Communications Office communications operator from Fort Sam Houston, Texas, looks through information on a workstation inside the Combined Air and Space Operations Center-Nellis during Red Flag 14-1, Feb. 5, at Nellis Air Force Base, Nev. This is the first exercise that truly integrates advanced operational and tactical air, space and cyber training in a live, virtual, constructive environment. (U.S. Air Force photo/Senior Airman Brett Clashman)**

"It allows us to see how we have an impact on the overall mission."

Karter attended Red Flag in February and through that experience developed a new understanding by working in conjunction with Airmen in other career fields.

"Dealing with the (air and space) community for the first time in my career was interesting," he said. "They seemed to not understand what we did, just as much as we didn't understand what they did. Our integration together allowed us to see how we helped each other. They became able to rely on us to defend their assets, while we were able to help fulfil their missions."

Airmen with the 24th AF weren't the only one's seeing a new big picture as other Air Force communities were introduced to the many facets of cyberspace

warfare.

"We grow up in our own worlds," said Lt. Col. Christopher Jarvis, the 505th Test Squadron chief of combat operations. "I'm an electronic warfare officer by trade, so I grew up understanding electronic attacks, jamming other assets, (and information), surveillance and reconnaissance ... Through Red Flag, years ago, I learned the tactical executing side, the bomb dropping, the missile shooting. It's only been recently that I've even gotten the opportunity to learn how space and cyber works."

Bringing together the diverse combat components help to dissuade the narrow thinking that there is only one way to affect a target. For example, Jarvis said, if the objective of the mission was to take out an opponent's headquarters building, there

are multiple ways to get that done.

"We can drop a bomb; we can blow it up, or we can take cyber capabilities and use a sort of non-kinetic denial capability," he said. "If I can shut down the building's ability to communicate then I've achieved that same effect at the cost of probably less money and then obviously less lives."

If the Internet is destined to become the new battlefield of the 21st Century, it will be the Air Force, and more specifically the 24th Air Force, who will have the advantage with exercises such as Red Flag. In future warfare, it will be cyber Airmen challenging online adversaries, in addition to the traditional mission of bombers, fighters and RPAs, who will fight and win on the digital battlefield.

