



HIGH MACH

Serving the World's Premier Flight Simulation Test Complex



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AEDC machine shop provides product development solutions

By **Walt Bishop**
AEDC Contributing Writer

When you think about testing, your first thoughts probably aren't about the AEDC Model and Machine Shop. But, often that is where it all begins – with a customer who needs a model or test-related hardware developed and often on a tight deadline.

A skilled and experienced workforce, whose focus is on making practically anything, has ensured that capabilities exist to quickly respond to a myriad of manufacturing needs in support of the Complex asset requirements.

Over the past 60 years, AEDC has developed a manufacturing service comprised of a fleet of computer numeri-

cal control (CNC) and manual machines with unique capabilities. These machines are operated by some of the most skilled craftsmen available in today's workforce who are accustomed to turning concepts into working products.

The machine shop regularly fabricates everything from wind tunnel models and balances to large test and facility related structures and hardware.

AEDC manufacturing services provide a wide range of capabilities to its customers by providing precision machined products and complex fabricated hardware structures and components. The manufacturing organization uses and

See **SOLUTIONS**, page 10



R. D. Green, an ATA inside machinist, uses the five-axis CNC mill to machine threads into a Bearing Nut Housing (185.2 millimeter) for the 4T CST horizontal frame assembly. The machinists in the AEDC Model and Machine Shop provide manufactured test related hardware for the Complex test facilities. (Photo by Rick Goodfriend)

WW II veteran's military service recognized by AF Chief of Staff

By **Raquel March**
ATA Public Affairs

World War II veteran, retired Air Force Maj. Ike Farrar, received an honorable recognition for his military service on July 22 from the U.S. Air Force Chief of Staff Gen. Mark Welsh III.

The Air Force Test Center Commander Maj. Gen. Arnold W. Bunch Jr. presented a letter of appreciation to Farrar from Welsh which expressed the importance of Farrar's contributions.

Welsh wrote, "Like so many brave Americans, you joined the military after the attack on Pearl Harbor and during our Nation's greatest time of need. Your service in the Pacific flying transport and medical missions let us take the fight to the enemy, while providing our wounded warriors urgent medical support. In the end, you and the other veterans of the 'Greatest Generation' won World War II and showed us the meaning of words like sacrifice, courage and humility. Our Air Force stands on your shoulders."

See **SERVICE**, page 10



Air Force Test Center Commander Maj. Gen. Arnold W. Bunch Jr. (left) presents the U.S. Air Force Chief of Staff appreciation letter to retired Maj. Ike Farrar, a World War II veteran, on July 22. U.S. Air Force Chief of Staff General Mark Welsh III expressed his appreciation in a letter for Farrar's contributions to the Air Force. (Photo by Rick Goodfriend)

Revolutionary Change: Changes occur to future Information Technology contracts

AEDC Commander, Col. Raymond Toth, is providing periodic updates on AEDC's Source Selection efforts to the entire workforce via email and video messages called "What's the Buzz?". The High Mach will print those messages and transcripts in a series titled "Revolutionary Change." Additionally, Toth's messages and other information can be found online at www.arnold.af.mil/transition.

Team AEDC,

As you all know the contract with Aerospace Testing Alliance expires on Sept. 30, 2015 and it is my responsibility to ensure we meet the timeline for this transition.

Due to protests on the NET-CENTS-2 information technology contracting vehicle, the timeline

See **CHANGES**, page 2

Competition encourages students to 'Reach for the Stars'

By **Deidre Ortiz**
ATA Public Affairs

The AEDC STEM Center team recently partnered with the Tennessee section of the American Institute of Aeronautics and Astronautics (AIAA) to host a free rocket launch competition for area students on July 26.

At the AEDC Gossick Leadership Center, 15 students ages 10-14 spent the day learning how to build and launch a solid-fuel powered rocket as part of the Reach for the Stars program.

Reach for the Stars is a national competition started by the Christa McAuliffe Challenger Learning Center in Sarasota, Fla., in hopes of getting youth interested in science.

Jack and Kathy Colpas, co-directors of Reach for the Stars, stated the purpose of the competition is to foster an interest in model rocketry, STEM subjects and aeronautics.

See **STUDENTS**, page 6



Area students took the opportunity to participate in the local Reach for the Stars rocket launch competition, July 26, hosted by AIAA and AEDC. Pictured is Savannah Bobo (bottom left), of Shelbyville, who won the state competition, watching as the rocket she built takes off. (Photos provided)

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HIGH MACH

Arnold Engineering Development Complex
An Air Force Materiel Command Test Complex

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The complex's vision: Be the nation's best value ground test and analysis source for aerospace and defense systems.



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- Service before self
- Excellence in all we do



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"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
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- 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

Know better, then do better

AEDC Safety, Health and Environmental

Most of us have the knowledge, training, tools and experience to do our jobs safely and correctly. No one wants to be injured or to injure others while on the job, yet we sometimes ignore our training and take shortcuts which may result in an injury.

The U.S. Department of Commerce reports that 80 percent of work-related injuries are the result of human error. The excuses that are most often reported are "I knew I shouldn't, but I thought this one time...;" or "I forgot...;" and "I thought it would save time." It seems we know better.

Our BeyondZero® culture of caring emphasizes looking out for others as well as for ourselves, and we do a good job. But there are times

when something goes wrong.

As you read through the scenarios below from Titan America, think about the potential for the same thing to happen here:

- A bump on the head hurts, yet we fail to wear a hardhat when performing tasks or walking through areas where overhead work is taking place.
- Three points of contact is the safest way to go up and down stairs and ladders, yet we neglect to use handrails or we attempt to hand-carry tools or materials up the ladder.
- Excessive speeding can cause accidents, yet we take chances on the road daily. We allow our attention to wander, or ourselves to be dis-

tracted knowing how deadly our heavy vehicles can be.

- Bad housekeeping can cause slips, trips or falls, yet we leave aisles obstructed and blocked with tools and equipment. We know the eye wash station or fire extinguisher can be essential for someone's safety in an emergency, but we didn't have the time to properly store the things that were blocking it.
- Servicing or maintaining equipment can cause electrocution, crushing accidents or amputations, yet we do not ensure energy sources are turned off and locked out prior to performing work. We neglect to properly tag out power sources to ensure

the equipment is not started inadvertently while we are still working.

- Flying objects or debris can cause permanent eye damage, yet we do not always wear eye protection while operating power tools or when working around or passing through environments that could be hazardous to our eyes. We know the hazard, but reason, "It can't happen to me."
- Chemicals are flammable, corrosive and explosive, yet we store them haphazardly or handle them carelessly.

traffic areas, yet we divert our attention from the task at hand – even if we're just passing through – and fail to maintain situational awareness.

- Lifting heavy objects can strain our back, yet we still try and lift objects by ourselves. We knew it was heavy, but it would take too long to get the dolly or ask for help.
- Stretching prior to work will reduce workplace injuries, yet we routinely opt out of this opportunity and start work cold and stiff.

Talking or texting while working distracts from our surroundings, particularly when we are in industrial or high

Although the ten situations above are from another agency, at least some of them are likely to sound familiar even if the action described did not result in an injury.

Geolocation Services: Who is tracking you?

Interagency OPSEC Support Staff

By now, everyone is familiar with the dangers associated with Geotagging photographs, tweets and video.

As we become more mobile and integrate social networking into Geoloca-

tion services, it provides an avenue for someone to track you. Geolocation Services allow location-dependent apps to use information from cellular, Wi-Fi and Global Positioning System (GPS) networks to determine your approximate location.

Through social discov-

ery applications, users really leverage this technology to broadcast their location to friends and even receive notifications when their friends are close by.

Understanding how to configure Geolocation services is relatively easy, and users can tweak the apps that use the services to fit

their privacy comfort levels. The Interagency OPSEC Support Staff (IOSS) recommends that users turn off Geolocation services when taking photographs or uploading any content to the Internet, as it puts your privacy at risk.

Technology is full of little surprises such as Geo-

location services that we take for granted when using them for helpful purposes, but which the wrong people can exploit for dangerous purposes. By understanding how to manage Geolocation Services on our mobile devices, we can protect our privacy and still use them to find that great pizzeria.

CHANGES from page 1

for award of their task orders was beginning to impact our ability to make a clean transition. After discussions with the NETCENTS-2 program office, they agreed that AEDC needed a different approach.

This morning the Source Selection Authority for the AEDC's information technology requirements made the decision to no longer pursue a task order on the NETCENTS-2 contract. Instead we will now pursue a task order with the U.S. General Services Administration's Alliant Small Business (SB) Government-wide Acquisition Contract (GWAC) to meet those requirements.

The Alliant SB multiple-award contract is a strong contracting vehicle currently used by multiple government agencies to receive services through many pre-qualified vendors. Because the Alliant SB contract is already in place, we will significantly streamline our efforts to have a new IT contractor in place on Oct. 1, 2015.

The Alliant SB contract will be a five year effort

and at the end of that period, AEDC will transition to the NETCENTS-2 vehicle per Air Force policy.

By using the Alliant SB contracting vehicle, AEDC will get a contractor focused solely on information technology allowing our other contracts to focus on their mission-specific areas as well. This path also ensures that requirements made the decision to use Alliant and many of the Alliant SB vendors are signed up to attend.

We will host an Industry Day next week, August 13 & 14, for our information technology requirements. We alerted all of the NETCENTS-2 and Alliant SB vendors of the decision to use Alliant and many of the Alliant SB vendors are signed up to attend.

I want to thank you all for staying mission-focused during this time of change. AEDC has a bright future, a strong workload forecast and an even stronger workforce. I'm confident that together we will continue to meet our nation's need for aerospace ground testing today and far into the future.

Col. Toth

Children and Families are in great need of donated food this summer.

Participate in the **Feds Feed Families** program by donating your non-perishable food items to the Good Samaritan Pantry!

Ends August 29

Collection boxes located at:

- A&E building (bldg. 100)
- Carroll building (bldg. 1103)
- ETF Test Support building (bldg. 1099)
- ETF Office building (bldg. 877)
- VKF Office building (bldg. 676)
- PWT Office building (bldg. 740)
- Fire/Security building (bldg. 251)
- Commissary (bldg. 125)



feds feed families

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 held 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. 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 three ways: via the AEDC intranet home page, Action Line boxes at the base cafeterias 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

Blood Drive personnel prepare for donations

By Raquel March
ATA Public Affairs

The Blood Assurance Organization will provide a bloodmobile Aug. 12 – 15 at AEDC for employees to donate blood from 10:30 a.m. – 3:30 p.m. each day.

The bloodmobile is a mobile blood collection lab that provides a convenient method for donating blood and it will move

to a different location each day while stationed at AEDC.

The dates and corresponding locations are: Aug. 12 – The von Karman Gas Dynamics Facility, building 676; Aug. 13 – the Administration and Engineering, building 100; Aug. 14 – the Carroll building, building 1103; Aug. 15 – the Main Auditorium, building 452. Employees may donate at any of these locations during work hours with approval from their supervisor.

To be eligible to donate, you must be at least 17 years old (16 years old with parental consent), weigh at least 110 pounds and be in good health. The process usually takes about 30 minutes and donors are asked to drink plenty of fluids - avoiding caffeine - and eat a meal that is rich in iron prior to donating. Bring identification in the form of a donor card or driver's license.

It takes more than 400 donations every day to meet the need for blood in the areas serviced by Blood Assurance. The donations received will be used in Winchester, Manchester and Tullahoma hospitals.

Blood Assurance is a non-profit, full-service regional blood center serving more than 50 health care facilities in Tennessee, Georgia, Alabama and North Carolina. Founded in

1972 as a joint effort of the Chattanooga-Hamilton County Medical Society, the Chattanooga Area Hospital Council, and the Chattanooga Jaycees, the mission of Blood Assurance is to provide a safe and adequate supply of blood and blood components to every area patient in need.

For more AEDC blood donation guidelines and information, call 454-5385.

Learning + fun = happy campers



Professor Billy Hix (holding the broom), a STEM educator, explains the "Mass always leads" concept to Caleb Voorhes-Fontenot (right) during the first day of the AEDC STEM Camp. The concept helps demonstrate rocket stability. (Photo by Jere Matty)



AEDC STEM Camp participants were able to climb the rock wall during free-time at the Space and Rocket Center in Huntsville. (Photo provided)



Ben Hurrocks triggers his team's water-propelled bottle rocket for a launch. The teams designed and built their rockets on the first day of camp. (Photo by Jere Matty)

By Raquel March
ATA Public Affairs

AEDC STEM Camp coordinator Jere Matty helped AEDC personnel's children have fun while learning during a three-day summer camp.

Seventeen children, in sixth and seventh grades,

participated in activities such as building and launching rockets, conducting experiments using household items and a trip to the Space and Rocket Center in Huntsville.

Professor Billy Hix, an award-winning STEM Camp leader and educator, conducted experiments with

household items, such as soap and non-dairy creamer, to see how they would react due to their different chemical structures.

The campers were able to build and launch water-propelled bottle rockets, but only after they understood some theories of propulsion.

Matty explained that Hix used a broom to demonstrate rocket stability. By balancing a broom in his hand from either end, the handle end or the bristle end, Hix described how the end with the most mass would lead. As a result, with the bristle end up and the handle end balanced in the palm of his

hand, Hix was able to balance the broom with more ease. Hix explained that a rocket with its mass located on the top would have better trajectory because the center of mass is above the center of pressure.

Campers also built and launched solid-fuel powered model rockets, straw

rockets and balsa gliders.

At the Space and Rocket Center campers saw multiple exhibits such as the Space Transportation System tested at AEDC and the Davidson Center. The Davidson Center displayed a full scale Saturn V and other items from Mercury, Gemini and Apollo programs.

AF launches successful satellite mission

The 45th Space Wing supported a successful United Launch Alliance Delta IV vehicle carrying Air Force Space Command mission assets for the Air Force July 28.

The AFSPC-4 mission payload included two satellites for the Geosynchronous Space Situational Awareness Program, or GSSAP, and an Air Force Research Laboratory experimental satellite.

The rocket, which flew in the Medium+ (4,2) configuration with two solid rocket boosters, roared to life from Launch Complex 37 here.

The 45th SW's team of military personnel, government civilians, and contractors provided launch support to the ULA mission, including weather forecasts, launch and range operations, security, safety, and public affairs.

GSSAP satellites will be a space-based capability operating in the near-geosynchronous orbit regime supporting U.S. Strategic Command's space surveillance operations as a dedicated Space Surveillance Network, or SSN, sensor.

Also aboard was the experimental Automated Navigation and Guidance Experiment for Local Space, or ANGELS, satellite. ANGELS will evaluate space situational awareness techniques maneuvering in a limited region around its Delta-4 rocket body upper stage several hundred kilometers above Geosynchronous Earth Orbit. The program is managed by the AFRL's Space Vehicles Directorate, located at Kirtland Air Force Base, New Mexico.

"What a thrill for 'Team Patrick-Cape' to play a significant role in the launch of this vitally important mission, and we are so very proud to do so," said Brig. Gen. Nina Armagno, the 45th SW commander, who also served as the launch decision authority for the mission.

"The 45th Space Wing also thanks members of the 50th Space Wing, United Launch Alliance, the Space and Missile Systems Center, Boeing and all our other mission partners who made this launch successful," she said.

GSSAP satellites will support Joint Functional

Component Command for Space tasking to collect space situational awareness data allowing for more accurate tracking and characterization of man-made orbiting objects. It will have a clear, unobstructed and distinct vantage point for viewing resident space objects orbiting earth in a near-geosynchronous orbit without the disruption of weather or atmosphere that can limit ground-based systems.

Data from GSSAP is expected to contribute to timely and accurate orbital predictions, enhancing knowledge of the geosynchronous orbit environment, and further enabling space flight safety to include satellite collision avoidance.

GSSAP satellites will communicate information through the worldwide Air Force Satellite Control Network ground stations, then to Schriever Air Force Base, Colorado, where satellite operators of the 1st Space Operations Squadron, 50th SW, will oversee day-to-day command and control operations. (Courtesy of 45th Space Wing Public Affairs)



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AEDC Wind Tunnel upgrade improves flexible nozzle accuracy and reliability | **Visitor Center ID services**

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Tyndall AFB takes F-22 pilot training to next level

By Maj. Wilson Camelo
Air Combat Command
Public Affairs

TYNDALL AIR FORCE BASE, Fla. (AFNS) – The Air Force’s ability to continue developing a fifth generation fighter aircraft fleet ready to meet the challenges of future warfare, hinges in large part, on a steady influx of capable and trained F-22 Raptor pilots.

Due to major collaborative improvements at the 43rd Fighter Squadron fighter training unit here, the Combat Air Force, or CAF, is set to receive the largest volume of basic course graduate Raptor pilots in the program’s history, with projections to graduate even higher numbers of pilots in years to come. The 43rd FS, along with the 325th Training Support Squadron, are responsible for worldwide F-22 student production.

F-22 B-Course graduations increased from approximately 10 pilots per year on average to 23 pilots during fiscal year 2014. The program expects to graduate 30 pilots in fiscal year 2015. While increased numbers fall short of the 42 B-Course F-22 pilots the Air Staff said are required to meet the overall CAF fighter need, the trend is heading in the right direction.

“We are not declaring victory, but I do think we have turned the corner on our ability to produce more B-Coursers,” said Col. David E. Graff, the former 325th Fighter Wing commander. “We have an F-22 fleet flying better and more consistent than ever; how-

ever, I think we’re only at 75 percent of where we should be. We can and will continue to improve.”

Wing officials said a major part of the recent turnaround is due to having more reliable F-22s available for training.

Maintenance improvements and aircraft upgrades made during the last 12 to 18 months are bearing fruit now, as evidenced by the wing achieving the highest mission-capable rates in its history. In addition, the wing recently exceeded its sortie production goals for the first time and doubled the average aircraft available for training missions.

In one year, the 325th FW has seen its student training timeline go from being 32 days behind in March 2013 to seven days ahead in March 2014 and 13 days ahead in April 2014. The 45-day swing is due to improvements and changes across multiple areas, said Lt. Col. R. Travis Koch, the 43rd FS commander.

“There are things happening here that have never happened in the F-22 community,” Koch said. “We are getting more capacity out of our capability and making our training more relevant to the CAF.”

Rightsizing the syllabus

The F-22 basic qualification syllabus is one area that has seen sizable cuts and changes, primarily with the number of sorties B-Course students need to perform to graduate from the F-22 training course. Prior to the adjustments, a B-Course student required 43 sorties to graduate. The number is now down to

38 sorties. Track 1 course pilots, more experienced pilots retraining from other aircraft, also saw a reduction in the number of sorties needed to graduate, from 19 to 12 sorties.

“We have the flying portion of the syllabus down to the minimum number of sorties needed to produce fully-qualified F-22 pilots through ‘rightsizing’ the syllabus and by aligning it better with the CAF mission,” Koch said. “Coupled with more jet availability, we can then increase the quantity of B-Course students while maintaining high level (of) quality. We do have to keep a balance between the need to produce more pilots and developing their skillsets. However, we had plenty of places to make adjustments.”

Virtual realities

Another major change added increased academic instruction and simulator missions.

“Virtual training technology has improved to the point where simulators are no longer additive, but rather complement training sorties as an integral part of our comprehensive approach to student training,” said Lt. Col. Jason Costello, the former 325th TRSS commander.

The simulator training has been made even more realistic and reflective of the recent upgrades and modifications being made to the combat-coded F-22 jets in the fleet. However, the upgrades most likely will not be made to the 31 training aircraft in the 43rd FS inventory, so the only place student pilots will see



Two F-22 Raptors and a T-38 Talon from Tyndall Air Force Base, Florida, fly together during a 43rd Fighter Squadron Basic Course training mission over Florida. A sortie begins when an individual aircraft takes off and ends when it lands. The 43rd FS is the only squadron in the world that trains and develops F-22 pilots. (U.S. Air Force photo/Master Sgt. J. Wilcox)

that enhanced capability is in a simulator, he added.

“While nothing can fully replace the realism of flying, the simulators give us the opportunity to add more robust events that they can’t get in the air or with the training jets,” Costello said.

The F-22 simulator facility will be updated and expanded to house eight simulators, during the 2014 summer. It essentially doubles the simulator capacity and should contribute to an increase in B-Course student graduates as well as providing robust virtual training to help the 95th FS meet its combat readiness requirements.

The 325th TRSS is responsible for approximately 71 percent of the academic F-22 B-Course syllabus and 470 hours of the total 660 hours of academic training a B-Course pilot receives.

“We have just as much of a part to play as the 43rd FS and with the maintenance squadron,” Costello said. “Students spend 10 to 12 hours a day for two full months with the 325th TRSS before they are qualified to fly a solo mission.”

The academics and simulator missions are adjusted to be better aligned to the CAF mission needs, he added, and F-22 student pilots are taught by the only government civil service instructors in Air Combat Command.

“We call them ‘Big A’ Airmen—they do just as much of the heavy lifting as our flightline instructors,” said Costello. “Our civilian simulator instructors are known Air Force wide as F-22 subject matter experts. Their detailed knowledge of the F-22 weapons system is as deep, if not more so, than most active-duty instructors, and in some cases, more than the engineers who designed the F-22.”

Raptors need their Talons

Prior to the introduction of the T-38 Talon as an adversary aircraft, the Raptor played the role as an adversary during training missions. This change produces significant cost savings, to the tune of \$15.5 million in 2013, as it costs about \$18,000 less per flight hour to fly a T-38 than an F-22.

“Bringing adversarial

training on board with the T-38 has allowed the majority of F-22 sorties to focus on training and combat missions while additionally supporting training and adversary platforms,” Costello said. “This has also been an economic gain, and it has increased student production while saving hours on the Raptor. The Raptor, like all aircraft, has a limited service life. Every hour spent in an adversary role is an hour we don’t get back for a wartime role. With the T-38, we not only preserve flying hours on the F-22, but we also help to preserve a national asset.”

In addition, T-38s are more realistic as adversary aircraft because the F-22’s attributes of stealth, supercruise and integrated avionics are unique and unmatched by any aircraft in the world.

From a production perspective, the T-38s are putting in work. In 2013, T-38s flew 831 adversary air sorties in nine months, and that number is expected to double in 2014.

Maintenance partnerships and collaborations

The health of the F-22 fleet in the first half of fiscal year 2014 was the best of any half year in the 10-year Raptor history, highlighted by the F-22 meeting and exceeding the 74 percent command mission capable, or MC, rate standard for the first time with an 80.7 percent rate in March. By comparison, the average MC rate from January to March 2013 was 49 percent.

“This was not achieved in a vacuum,” said Col. Curtis Hafer, the former 325th Maintenance Group commander.

Partners such as the 1st Fighter Wing at Langley AFB, Virginia, share some of the 325th MXG workload such as in conducting some of the low observable coating maintenance, or LO, which helps the Raptor to maintain its low observable, or LO, stealth characteristics.

In addition, the Langley AFB team assists in performing some of the scheduled packaged maintenance plans, a three-week phased inspection required every 300 flight hours on the F-22.

“The ability for us to

fly the jets up to Langley to do the LO work and also leave them there for PMP has given us more capacity and helped tremendously in aircraft reliability,” Hafer said.

Other contributing factors to the improved aircraft reliability and higher MC-rates were software enhancements as well as the availability of quality F-22 parts, he said.

“The whole supply chain, from Lockheed Martin Corporation to the Air Combat Command weapons systems team, increased the parts priority for us. Our partners understand the importance of our training mission and that its success is based on mission capable (or MC) airplanes. It’s been a true collaboration,” Hafer said.

One of the residual benefits of hitting historic maintenance marks is the positive impact on morale.

“Our Airmen are fired up and energized, and holding their heads high with pride of what they’ve accomplished,” Hafer said. “This in turn makes them work harder.”

Moving forward

“We are careful not to ring the victory bell just yet; but, clearly we have a plan for fiscal year 2015 and beyond,” said Col. Max Marosko III, the 325th Operations Group commander. “We are moving closer to the required number of 42 B-Course pilots per year that the CAF has asked of us.”

In its simplest terms, the Air Force needs to graduate 265 new fighter pilots, across all fighter aircraft, per year to meet manning requirements. Of those required 265 fighter pilots the F-22 percentage accounts for approximately 42 F-22 B-Course graduates per year.

While the Air Force still needs to determine if 42 new B-Course F-22 pilots is the right number and is a number that can be easily absorbed into the six combat-coded F-22 squadrons, the consensus is that more new pilots are sorely needed.

“The F-22 program is taking a tremendous step forward by being able to do career broadening that they couldn’t do before,” said John Wigle, an Air Staff Operations Directorate program analyst. “The F-22 should be represented on the staff, at undergraduate pilot training (and) they serve as air liaison officers. We should begin to see the payback of all these improvements in the next three years.”

For the formal training unit to graduate 42 B-Course pilots and meet the CAF needs, it will require continued process improvements, increased training aircraft reliability and possible future syllabus changes, Graff said.



ATA Golf Scramble winners announced

ATA employees and retirees from AEDC participated in the ATA Golf Scramble tournament at the Willow Brook Golf Course in Manchester on July 25. Fifty-one people (13 teams) participated in the tournament and four teams received awards. Winners were: first place (pictured left to right) – Brian Woods, Tim McNeese, Justin McNeese and Jimmy Bradford; second place – Greg Casteel, Jeff Foster, Mark Moran and John Richardson; third place – Fred Battles, Phil Stich, Bob Lindeman and Rick Gamble; and fourth place – David Hurst, Chris LaGrange, Brad Reid and Luke Hobbs. (Photo provided)

AFMC wins Air Force Small Business top command awards

By Stacey Geiger

Air Force Materiel Command Public Affairs

WRIGHT-PATTERSON AIR FORCE BASE, Ohio – Air Force Director of Small Business Programs Mark Teskey presented Air Force Materiel Command winners with the 2013 Secretary of the Air Force Annual Small Business Awards during a July 24 visit to the headquarters here. Dave Duesterhaus, an AEDC Test Technology Branch lead engineer, was among one of the winners for the Small Business Programs Process Action Team award.

The Secretary of the Air Force Annual Small Business Awards Program recognizes teams and individuals who have contributed significantly to strengthening the industrial base and meeting warfighter needs through an array of small business capabilities that bring innovation, agility and efficiency.

For the second year in a row since this award's inception in 2012, AFMC Commander Gen. Janet Wolfenbarger accepted the Secretary of the Air Force Small Business Director's Top MAJCOM award.

This award recognizes the contributions of the top major command for

standout achievements in promoting a culture highly supportive of small business as demonstrated by acquisition strategy decision trends, policies and procedures and community and/or industry outreach initiatives. With the exception of women-owned business, AFMC exceeded percentage goals in all socioeconomic categories and achieved 10.82 percent equaling \$3.5 billion dollars in small business contracts for fiscal year 2013. The command also increased industry communication and improved market research to maximize small business participation.

Teskey also presented AFMC Director of Small Business E. Jean Smith with the Outstanding MAJCOM Small Business Director Award. This award recognizes significant actions, performance and contributions of a major command small business director in advocating the award of Air Force small business contracts that provide significant contributions to the Air Force and Department of Defense.

After being in the position for less than two years, Smith implemented a small business metric in the command's strategic plan and successfully obtained

senior leaders' engagement with small business financial goals. She also increased communication with industry by providing no-cost outreach events. Through Smith's outreach efforts, more than 400 small businesses received training.

"The AFMC Small Business Program's mission is to ensure that we are maximizing small business opportunities to ensure small businesses obtain a fair share of the federal contract dollars and maintain a competitive edge," Smith said. "There is a direct correlation between competitive acquisition and the number of small business awards. As we increase our competitive edge, we will see an increase in small business awards."

Although she expects AFMC will once again exceed the goals for 2014,

Smith said it is not about the goals but more about the capabilities small businesses bring to the warfighters.

Additional AFMC award winners include the following:

Small Business Programs Process Action Team

David Sikora, Air Force Research Laboratory
Richard Flake, Air Force Research Laboratory
Stephen "Buzz" Sawyer, Air Force Nuclear Weapons Center
James Dean, Air Force Sustainment Center

David Duesterhaus, Air Force Test Center

Secretary of the Air Force Special Achievement/Champion (Individual) Award

Jason Cadek, Air Force Life Cycle Management Center

Secretary of the Air Force Small Business Director's Outstanding Senior

Leader Small Business Achievement (Individual) Award

Maj. Gen. Craig Olson, Air Force Life Cycle Management Center

Steven Wert, Air Force Life Cycle Management Center
Robert Shofner, Air Force Life Cycle Management Center

Secretary of the Air Force Small Business Director's Beyond Goals Award (Individual/Activity/Unit)

ESG Team, Air Force Materiel Command
Barbara Liptak
David Boris
Mary Urey
Graciela Elizalde
Debra Harber
Esmeralda Rodriguez
Sylvia Linke

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Space and Missile Systems Center awards first-of-its-kind hosted payload solutions contract

LOS ANGELES AIR FORCE BASE, Calif. (AFNS) – The U.S. Air Force Space Command's Space and Missile Systems Center awarded an indefinite-delivery-indefinite-quantity, or IDIQ, contract under the Hosted Payload Solutions, or HoPS, program, July 10.

Companies competed to be included in one of two lanes: geosynchronous orbit, or GEO, hosted

opportunities and medium-earth orbit / low-earth orbit hosting opportunities. Companies were allowed to compete in both lanes.

The multiple-award HoPS IDIQ contract provides a rapid and flexible means for the government to acquire commercial hosting capabilities for government payloads. The HoPS contract provides flexibility for up to

approximately six hosted payloads and a total value of up to \$494.9 million. The contract created a pool of qualified vendors to fulfill the U.S. Government's need for various hosted payload missions.

The HoPS IDIQ procures fully-functioning on-orbit and ground systems services for government-furnished hosted payloads on commercial platforms. The HoPS

IDIQ can also be used to procure hosted payload studies that may or may not materialize into future missions.

SMC will also award the IDIQ contract's first competitive delivery order for the National Aeronautics and Space Administration's Tropospheric Emissions: Monitoring of Pollution, or TEMPO, mission study. From the newly formed competitive

pool, up to four GEO lane contract holders will be awarded study contracts to examine the feasibility of accommodating the TEMPO instrument as a hosted payload. Each 6-month study is valued at less than \$800,000. NASA plans to use the HoPS IDIQ for the subsequent TEMPO Mission Delivery order.

The Air Force Space Command's Space and Missile Systems Center,

located at Los Angeles Air Force Base, California, is the Air Force's center of acquisition excellence for acquiring and developing military space systems. Its portfolio includes GPS, military satellite communications, defense meteorological satellites, space launch and range systems, satellite control networks, space based infrared systems and space situational awareness capabilities.

Strategic agility is the future of the Air Force

Air Force Public Affairs Agency

WASHINGTON (AFNS) – As the Air Force prepares for new challenges and opportunities of the coming decades, it faces sobering 21st-century realities: global centers of power have become more distributed and the terrorism threat more dispersed. Most importantly, the emerging environment is demonstrating a trend that could prove to be the defining one of current times: the accelerating pace of change.

Thus, the Air Force's ability to continue to adapt

and respond faster than the potential adversaries is the greatest challenge it faces during the next 30 years.

To meet the challenge, Secretary of the Air Force Deborah Lee James and Chief of Staff of the Air Force Gen. Mark A. Welsh III have developed a strategic framework that will guide Air Force planning and resourcing over the next several decades. The framework has three main elements: a long-term future look that provides the vectors and imperatives necessary to guide planning activities, a 20-year resource-informed plan, and a 10-year balanced

budget, based on fiscal projections.

The first document of the trilogy, "America's Air Force: A Call to the Future," is the cornerstone guidance for a unified path to the future. The document emphasizes the need for strategy-driven resource decisions. But more important is the courage to make bold change, because Airmen must think and do things differently to thrive in the 21st century.

In an era defined by rapid change, the institution that can keep pace in its processes, thinking, and actions will be the one best poised for success in deter-

ring conflict, and winning should a fight be required. This is what "A Call to the Future" refers to as strategic agility.

Agility combines the attributes of flexibility and adaptability to leverage speed. The rate at which the Air Force develops capabilities needs to increase to match the pace of change and the opportunities to incorporate new technologies and improve existing systems.

James explained further that, "In addition to strategic agility, our nation demands an Air Force capable of harnessing diverse ideas and perspectives. Di-

versity, total force integration, and building internal and external partnerships provide the nation with the Air Force it expects, deserves, and needs."

The most important responsibility of a military service is to provide decision makers with viable solutions for the challenges of tomorrow and, true to Air Force heritage, it will meet that challenge. The Air Force will continue to deliver enduring, responsive airpower for national security through both the strength of Airmen and the responsive and effective application of global

vigilance, global reach, and global power for America.

As Welsh stated earlier in 2014, "The five core missions of the Air Force are not going to change. These missions are what the combatant commanders and the nation expect us to provide, but the way we think about how they are provided has to change. The Air Force must have the strategic agility required to successfully respond to the complex challenges that will confront our nation." (Information courtesy of Secretary of the Air Force Public Affairs)

STUDENTS *from page 1*

"Our goal is to share the unique educational experience of building and launching a solid-fuel powered model rocket," they said in a release.

Joe Sheeley, ATA senior technology engineer and AIAA Tennessee Section chairman, explained that for AEDC's competition, the STEM center provided students with all of the materials needed to build their rockets, while AIAA provided volun-

teers to help with the event.

"The students were taken through the build process step-by-step and volunteers were on hand to assist as needed," he said.

Once rockets were built, the students went outside to see if they could successfully launch their rockets and land them near the designated target.

The student who won

the competition by getting her rocket the closest to the target was Savannah Bobo of Shelbyville.

Bobo has since been announced as the winner of the state Reach for the Stars competition, which makes her eligible for the national competition at the Space and Rocket Center in Huntsville, Ala.

Though this was the first time the event has been held at AEDC, those who had a hand in organizing the competition have said it was a great success.

"Overall the kids seemed to enjoy the event and participation, with the overwhelming favorite part being the actual

launches," Jim Burns, Space Threat Assessment Testbed technical director and Pre-College Outreach chair for AIAA, said.

Sheeley agreed that competitions such as this one are fun and help in sparking students' interest in science.

"The neat thing about

this event is that it's totally hands on and the students enjoy both building the rockets and then getting to take them home," he said.

Members of AIAA and the AEDC STEM team thank the Gossick Leadership Center staff and the volunteers for assisting with the event.

BEWARE
of CREATIVE
DATA THEFT
METHODS



Branched out: From Marine, Soldier, Sailor to Airman

By Staff Sgt. Evelyn Chavez

455th Air Expeditionary Wing Public Affairs

BAGRAM AIRFIELD, Afghanistan – Staff Sgt. Jesus Yanez is the only member of his family to pursue a profession of arms and he's done it in four different military branches.

The security forces member, who is currently deployed to Bagram Airfield, Afghanistan, from the Texas Air National Guard's 204th Security Forces Squadron in El Paso, Texas, has answered his nation's call not just once but four times: first as a Marine, then a Sailor, Soldier and currently as an Airman.

"It sort of just happened, being in all four branches," said Yanez, 455th Expeditionary Base Defense Squadron defender. "I didn't even think about it until one of my friends mentioned it. From the Marine Corps to the Air Force, every branch has taught me something different."

Each branch of service has been a stepping stone for Yanez. He started his military career in 1993 as a Marine at Kaneohe Bay, Hawaii. Yanez was a logis-

tics Marine, where he was in charge of storing and distributing equipment and moving personnel.

"The Marine Corps instilled discipline and has influenced the way I am now," Yanez said. "What I learned there I have applied to every branch that I have served, but each branch has also given me an attribute that has made me the person I am today."

Although Yanez enjoyed serving in the military, he left the Marines after completing his four years of service. Two years later, he joined the Navy Reserve in his hometown of El Paso, Texas. He served from 1999 to 2001 as a master-at-arms, where he performed force protection duties that would later help him with his Air Force career. After he completed his time in the Navy, Yanez looked for other opportunities to challenge him as an individual.

"I am the type of person who looks for challenges every day," Yanez said. "That is the reason why I joined the military."

His next two opportunities were with the Army Reserve and Air Force. While serving from 2001 to 2006 in the Army Reserve in Fort Bliss, Texas,

as a heavy wheel mechanic, Yanez learned about the Air Force's 204th Security Forces Squadron.

"I was asked if I would be interested in an active guard reserve position with the Air Force," Yanez said. "This is something I was really interested in and it would allow me to stay in my hometown. As a single father, this was a better option because it avoided moving my kids to another place."

Throughout his service in all branches Yanez learned there are more similarities than differences.

"The camaraderie is the same," Yanez said. "Regardless of branch of service, everyone always works together to get the job done. I have also learned that anywhere you go, if you take care of the people below you, they will take care of you."

As a NCO with extensive life experience, Yanez is able to help the younger Airmen in his unit.

"He brings ton of experience to the fight," said Chief Master Sgt. Eric Soluri, the 455th EBDS chief enlisted manger. "Younger Airmen and NCO's look up to him and he is the 'go-to guy' in his sector."

Yanez has instilled the



Staff Sgt. Jesus Yanez stands in front of his sector station July 2, on Bagram Airfield, Afghanistan. Yanez has served in four military branches throughout his career. He is a 455th Expeditionary Base Defense Squadron defender and a native of El Paso, Texas. (U.S. Air Force photo/Staff Sgt. Evelyn Chavez)

values he has learned in the Airmen below him, as they often come to him to share life experiences.

"I give them advice about the military and life," Yanez said. "The military has given me so much, and I help them understand that if you give 100 percent to the military, it will give 100 percent back to you."

While he's had many opportunities while serv-

ing in the different branches, Yanez's loves his current job in the Air Force.

"What I love about the Air Force is my job," Yanez said. "As part of the combat readiness training center at my home station, I am able to teach Airmen and Soldiers skills that will help them in the combat zone. Everything I have learned before, I now use to help everyone I train."

Yanez has served with

pride and dedication as a Marine, Soldier, Sailor and Airman. He is able to pay forward his knowledge and experience by helping the younger Airmen and next leaders in line.

"I get to prepare the Airmen coming up in ranks," Yanez said. "I would not change the choices and experiences I have been through because they have made me who I am today."

From trash to treasure: Converting Academy waste into renewable energy

By Amber Baillie

U.S. Air Force Academy Public Affairs

U.S. AIR FORCE ACADEMY, Colo. (AFNS) – New research here reveals Academy trash might be a treasure.

During August 2013, the Defense Department Environmental Security Technology Certification Program funded CDM Smith, a national engineering and construction firm, to test how the U.S. Air Force Academy can reduce energy use and cost at its wastewater treatment plant, and convert food waste from its dining hall into energy.

Academy professors and engineers toured the Mitchell Hall kitchen and the wastewater treatment plant here July 15, to learn more about the processes and results of the year-long project.

"About 2-3 percent of the nation's energy goes to treating wastewater and water," said Pat Evans, CDM Smith's vice president. "Most of the energy that's used is for pumping the water and aerating it. We're trying to get wastewater treatment plants to become energy neutral or energy producers instead of energy consumers. One step toward that goal is capturing energy from food waste through anaerobic digestion."

According to Glen Loyche, a Mitchell Hall facility manager, between two to three semitrucks haul food to the Academy every day to feed 4,000 cadets.

"Each trailer carries 20-40 pallets of food," he said.

Leftover food at the dining hall is ran through large grinders, turned into pulp and transferred into

dump trucks.

"Waste management picks up 4.5 tons of pulp product here every week," Loyche said.

CDM Smith collects food waste from Mitchell Hall three days a week and converts it into methane and carbon dioxide.

"We're testing on a very small, pilot scale," Evans said. "We transfer the food waste into anaerobic digesters, about 350 gallons in size, that hold about 250 gallons of sludge and food waste. We convert the waste into methane for beneficial uses such as heating boilers, generating electricity and vehicle fuel once it's purified."

Greenhouse gases emitted from food waste takes a toll on the environment, Evans said.

"Some landfills capture the methane released but a lot don't," Evans said. "Methane is a really potent greenhouse gas, much more potent than carbon dioxide. The environmental impact is that it takes up space, emits greenhouse gases and water can go through the waste and generate leaching, which can contaminate ground water."

CDM Smith removes hydrogen sulfide, carbon dioxide and water when

converting the waste into methane.

"We purify it," Evans said. "Hydrogen sulfide, or rotten egg gas, is very toxic and can result in corrosion of a lot of equipment. At the end of the process we have pure methane, or natural gas, that can be compressed into vehicle fuel."

Overall, the project has been successful, Evans said.

"We found you get a lot more gas and energy out of fat and protein than you do out of carbohydrates," he said. "We can't control the amount of carbs, fat and protein cadets eat or waste, but now we have a better understanding of how much gas we can get for a given food waste."

Food waste makes up 1-2 percent of the solid waste generated in the U.S., Evans said.

"The Academy's food waste is an energy-rich resource that in going to landfills ends up having an environmental impact," he said. "By converting food waste to methane through anaerobic digestion, we can decrease the impact to the environment, recover energy and help the Defense Department's reach its net zero goals."

Russell Hume, a mechanical engineer with

the Academy's directorate of Installations, said converting waste to make energy is a phenomenal step in the right direction for

the Academy and beyond.

"I think it has been a great demonstration of the art of the possible," he said. "I would like to

see this technology further developed and perfected to the point that it becomes widely available to all."

AEDC quarterly award winners announced



Capt. Brett Ramnarine
Company Grade Officer of the
Quarter



Master Sgt. George Allen
Senior Non-Commissioned Officer
of the Quarter



1st Lt. Chance Johnson
Honor Guard of the Quarter



Judy Mohler
Civilian of the Quarter
Clerical/Technical Support



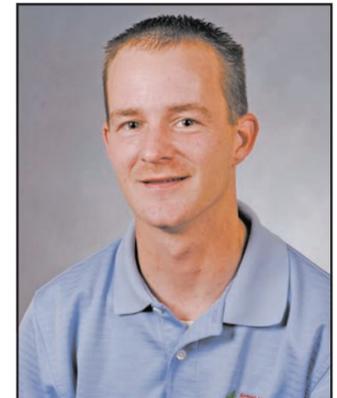
Chris Fanning
Civilian of the Quarter
Administrative



Brandon Hoffman
Civilian of the Quarter
Scientist/Engineer

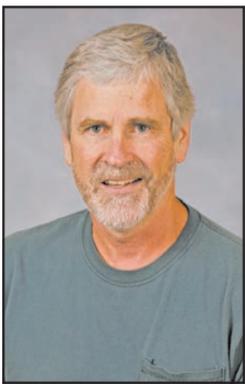


Jacky Payne
NAF Employee of the Quarter
Maintenance Worker, Outdoor
Recreation
Category I



Charles Evans Jr.
NAF Employee of the Quarter
Recycling Center Manager, Re-
cycling
Category II

Milestones



Roger Johnson
40 YEARS
Fred Huber, ATA
Roger Johnson, ATA

35 YEARS
Steven Simpson, ATA
Marc Smotherman, ATA
Gary Vanzant, Premiere

30 YEARS
Jeffrey Dodd, ATA
John Dovers, ATA
Danny Haddon, ATA
Paul Kelly, ATA
Thomas Layne, ATA
David Moore, ATA
Danna Pemberton, ATA
Betty Rutherford, ATA
Mohammad-Zadeh Saeed,
AF
Matthew Wilson, ATA

25 YEARS
Lora Arnold, ATA
James Middleton, ATA
Paul Scharfenberger, ATA
Kevin Uehlein, ATA
Roger Vaughn, ATA

20 YEARS
Jerrime Ball, ATA
James Gilliam, ATA
Robert Martin, ATA
Andrew Nelius, ATA

15 YEARS
Henry Sizemore, ATA
Bradley Winkleman, ATA

10 YEARS

Dennis Holt, ATA
Karen Steele, AF
Todd VanPelt, ATA
David Woods, ATA

5 YEARS
Joseph Edwards, ATA
James Melton, ATA
Harold Partin Jr., ATA

INBOUND MILITARY
Lt. Col. Colin Morris
Staff Sgt. Jared Vanwey

RETIREMENTS
Jack Lamons, ATA
Staff Sgt. Thomas Starling
Elizabeth Wolff, AF

NEW HIRES
James Atkielski, ATA
Robert Bell, ATA
Eric Boyd, ATA
Aaron Blaser, ATA
Sarah Caskey, AF
Aaron Cheney, ATA
Charles Cook, AF
Preston, Drnek, ATA
Jessica Dunn, ATA
John Howell Jr., ATA
Raymond Hudson, ATA
Ray Kelly, AF
Joey Massey, ATA
Ronnie Matlock, ATA
Johnny Mull, ATA
Marshall Polk, AF
Bruce Prater, ATA
Jeff Sedlar, ATA

Doug Smick, AF
Alex Smith, AF
Jason Sweeton, ATA
Russell Tabler, ATA
Jason Thompson, ATA
Warner Tomes, ATA
Lance Webb, ATA
Joshua Welch, ATA
Shaun Wells, ATA
John Yaudes, ATA

PROMOTIONS
Scott Cutshaw, ATA
Justin Garrard, ATA
Carson McAfee, ATA
Timothy Orange, ATA
Steven Simpson, ATA
Jerry Spry Jr., ATA

C-130Js test tactics against F-16

By Airman 1st Class
Kedesha Pennant
7th Bomb Wing Public
Affairs

DYESS AIR FORCE BASE, Texas (AFNS) – Two 317th Airlift Group C-130J Super Hercules successfully employed air-to-air tactics against an F-16 Fighting Falcon during a training exercise July 23, en route to Naval Air Station Joint Reserve Base Fort Worth, Texas.

This exercise demonstrated the C-130J capabilities that will be used during Red Flag-Alaska, where more than 100 aircraft will participate in multiple exercises.

“We replicated a realistic air threat C-130J aircrews can expect to face at Red Flag-Alaska,” said Lt. Col. Brian Storck, 457th Fighter Squadron F-16 pilot and aggressor to the C-130Js. “This operation showed the C-130J can survive against an advanced air threat.”

The crew of each C-130J consisted of two to three pilots and a loadmaster. The loadmasters sat high in the flight decks of their aircraft, looking through a bubbled window in the ceiling. They communicated to the pilots who reacted and maneuvered to ensure the safety of their aircraft. The goal was to delay the fighter pilot’s ability to locate the C-130Js.



Airman 1st Class Jacob Betts, 40th Airlift Squadron loadmaster, watches an F-16 Fighting Falcon from a bubbled window on board a C-130J Super Hercules July 23, en route to Naval Air Station Joint Reserve Base Fort Worth, Texas. During a training exercise, C-130J pilots reacted to the movements of the F-16 and maneuvered to ensure the safety of their aircraft. (U.S. Air Force photo by Airman 1st Class Kedesha Pennant)

“This training was educational and helped me realize there’s more to being a loadmaster than what we

normally do,” said Airman 1st Class Jacob Betts, 40th Airlift Squadron loadmaster. “It was remarkable to en-

gage in defensive tactics we normally don’t operate in.”

On board the C-130Js, the sound of the radio chatter in the headset was constant, as the loadmaster relayed instructions that resulted in “roller coaster-esque” movements, revealing how fast the J-model can react when in the face of danger.

“The average person doesn’t expect a 130,000-pound cargo plane to be able to maneuver as nimbly as the J-model does,” said Maj. Aaron Webb, 39th AS assistant director of operations for tactics. “It may seem like we were reacting slowly, but our counter tactics against an area of engagement are pretty effective.”

The attainment of these goals would not have been

possible without teamwork amongst the pilots and the loadmasters.

“The aircrews learned how to work as a team and to defend their aircraft should an aggressor impose an attack,” Webb said. “In the state of current events, it’s absolutely imperative to train our aircrews to be prepared for any threat, both on the ground and in the air.”

This was the first time the 317th AG engaged in this type of air training in cohesion with the 457th FS.

More opportunities for these exercises are expected to continue; until then, the aircrew members who participated will pass on what they learned from this experience to other aircrews.

“The 317th Airlift Group is very unique in that we’re small enough to rapidly adjust to real-time mission pressures, but we’re large enough to where we make a difference,” Webb said. “The culture here is to be the best you can possibly be and that is what we strive to do.”

F-22 maneuvers and displays



Top photo: An F-22 Raptor performs aerial maneuvers in support of the Arctic Thunder Open House at Joint Base Elmendorf-Richardson, Alaska. Arctic Thunder, a biennial event, features more than 40 Air Force, Army and civilian aerial acts and hosts a crowd of more than 200,000 people. It is the largest two-day event in the state and one of the premier aerial demonstrations in the world. The Raptor is assigned to the 90th Fighter Squadron, 3rd Operations Group, 3rd Wing at Elmendorf. (U.S. Air Force photo/Staff Sgt. Joseph Araiza)

Right photo: An F-22 Raptor displays its weapons bays to the crowd during the Arctic Thunder Open House at Joint Base Elmendorf-Richardson, Alaska. (U.S. Air Force photo/Staff Sgt. Jared Becker)



AF Assistance Fund may not hit 2014 goal

By Staff Sgt. Carlin Leslie
Air Force Public Affairs
Agency

WASHINGTON (AFNS) – In spite of persistent economic difficulties, active-duty and re-

tired Airmen have contributed more than \$6 million to the Air Force Assistance Fund, or AFAF, during this year's fund drive.

Although the annual AFAF drive has yet to garner this year's \$6.4 million

goal, contributions continue to roll in from the 79 assistance fund campaigns around the world. Those, coupled with retiree and annuitant contributions, may make the difference, said Bill D'Avanzo, from

the Air Force Personnel Center.

Even though the AFAF drive has closed for the active-duty members, it remains open for the retiree's year-round to submit contributions through the mail.

While the overall totals to date paint a sobering picture that may be indicative of the current economy and financial uncertainty that permeates the U.S. and its government right now, officials said they also show the Air Force takes care of its own.

All the money donated to AFAF directly supports

Airmen and their families through four key programs:

- The General and Mrs. Curtis E. LeMay Foundation helps Air Force retirees' widows, both officer and enlisted, with grants of assistance whenever needed.
- The Air Force Enlisted Village provides a safe and secure place for surviving spouses of retired Air Force service members.
- The Air Force Village provides a comfortable

and affordable retirement community for the widowed spouses of retired Air Force officers.

- The Air Force Aid Society provides worldwide emergency assistance to members and their families, sponsors educational assistance programs and offers base community programs to improve Airman and family welfare.

For more information regarding the four charities sponsored by AFAF please visit <http://www.afassistancefund.org/>.

SOLUTIONS from page 1

maintains a shop with more than 155 machines for precision turning, milling, grinding, cutting, burning and welding operations. The equipment is manned by highly skilled tradesmen having on average 30 years of machining experience and many having Naval

or machinist apprenticeship backgrounds.

To add flexibility, additional capabilities and provide best-value to AEDC's overall manufacturing services, a pre-approved list of civilian-owned and operated machine shops with complementary specialties

and skills are often used, making the overall capabilities of AEDC's manufacturing services almost limitless.

By taking advantage of AEDC's manufacturing services, virtually any machining concept can be developed into a working product.

SERVICE from page 1

Welsh thanked Farrar for his service in his letter on behalf of the 690,000 men and women currently serving in the U.S. Air Force and the millions who have served and will serve.

Farrar's family and friends attended the ceremony where AEDC Commander Col. Raymond Toth gave an overview of Farrar's career.

"Ike dedicated himself not only to the Air Force, but also to his community and his family for more than 70 years," Toth said. "His experiences during World War II flying medevac [medical evacuation] missions in the Pacific left indelible imprints on him that forged his selflessness and dedication to others for the rest of his life.



Maj. Ike Farrar
(Photo provided)

I am proud [that] the Air Force Test Center and AEDC could play a part in recognizing such a great airman and patriot."

Farrar was drafted into military service while attending the University of Tennessee. He spent part of his military career as a flight instructor in the Army Air Corps, a precursor to the

U.S. Air Force. He was eventually assigned to fly a C-46 cargo plane and flew supplies to Pacific islands during World War II.

Welsh also mentioned in his appreciation letter the recognition Farrar received from Bedford County Mayor Eugene Ray, who declared Jan. 20, 2014 as "Farrar Day" in Bedford County due to Farrar's contributions to the community.

Air Force Civic Leader Walt Wood presented a Chief of Staff Challenge coin to Farrar and Arnold Community Council (ACC) President Elect Jim Jolliffe presented an ACC coin to the veteran.

Farrar resides in the Flat Creek Community where he maintains a dairy farm.

First aviation mechanic display added to the National Museum of the U.S. Air Force

By Rob Bardua
National Museum of the U.S. Air Force

DAYTON, Ohio – The National Museum of the U.S. Air Force honored the first aviation mechanic, Charles E. Taylor, by unveiling a bronze bust of his likeness for permanent display during a ceremony in the museum's Early Years Gallery July 21.

A brilliant, self-taught man, Taylor began working in the Wrights' bicycle business in 1896, and played an important role in their flying experiments for several years. Unable to find a manufacturer who could build an engine to their specifications - weighing no more than 180 lbs. and delivering 8-9 horsepower - the Wright brothers turned to Taylor. In just six weeks Taylor designed and built the engine that made their pioneering powered flights possible.

According to museum director, retired Lt. Gen. Jack Hudson, the Taylor bust is a fitting addition to the museum since the story of the Wright brothers cannot be fully told without him.

"The importance of Charles Taylor's role in helping the Wright brothers achieve their dream of heavier-than-air powered flight

should not be understated," Hudson said. "His development of a lightweight engine for propulsion was critical, and Taylor's story of innovation serves as an inspiration -- especially for those pursuing careers in science, technology, engineering and math."

The Aircraft Maintenance Technicians Association, or AMTA, a nonprofit organization created in 2002 to promote Taylor for his contributions to aviation, the U.S. and those who have followed in his footsteps, commissioned Dayton artist Virginia Hess to create the bust for the museum.

According AMTA director, Ken MacTiernan, having a bust of Taylor on display at the National Museum of the U. S. Air Force will ensure that his contributions to aviation history are well remembered.

"The National Museum of the U. S. Air Force was chosen because of the respect given to the museum by its visitors worldwide," MacTiernan said. "The quality of exhibits and displays is second to none, and having the museum as a place that Taylor can call 'home' just seems highly appropriate."

Among those in attendance at the ceremony included Taylor's grandson,



A bronze bust honoring the first aviation mechanic, Charles E. Taylor, is now on permanent display in the National Museum of the U.S. Air Force's Early Years Gallery. The museum is located near Dayton, Ohio. Taylor designed and built the engine that made the Wright brother's pioneering powered flights possible. (U.S. Air Force photo/Ken LaRock)

Reuben Taylor, and great-grandson, Charles Taylor II.

In addition to the bust at the museum, AMTA has commissioned other Charles E. Taylor busts at the following locations: San Diego Air & Space Museum; Smithsonian's Steven F. Udvar-Hazy

Center in Chantilly, Virginia; American Airlines maintenance facilities in Kansas City, Missouri; Tulsa, Oklahoma; Alliance, Texas; Dallas-Fort Worth Airport; Le Mans Sarthe, France and the U.S. Air Force Academy, Colorado.

The National Museum of the United States Air Force, located on Wright-Patterson Air Force Base near Dayton, Ohio, is the service's national institution for preserving and presenting the Air Force story from the beginning of military flight to today's war

on terrorism. It is free to the public and features more than 360 aerospace vehicles and missiles and thousands of artifacts amid more than 17 acres of indoor exhibit space. About 1 million people visit the museum annually.

Vice Chief of Staff talks STEM to local educators

By Staff Sgt. Torri Ingalsbe
Air Force Public Affairs Agency

WASHINGTON (AFNS) – Air Force Vice Chief of Staff Gen. Larry O. Spencer spoke to local educators about the particular importance of science, technology, engineering and mathematics to the Air Force during an ASM Materials Teachers Camp July 18, at Shaw-Howard University, Washington, D.C.

The week-long camp for local middle and high school science teachers shows them how to use low-cost, simple labs and experiments using everyday materials that can be integrated into existing lesson plans to engage young people about STEM.

"One of the things I've found interesting in the Air Force is the amount of technology we have," Spencer said. "We have drones that are being flown in Afghanistan, as I sit here, watching what people are doing. The people operating those drones are in Nevada -- essentially flying an airplane halfway around the world."

Spencer talked about the Air Force's interest in femtosecond timing, directed energy, new jet engine technology and 3-D printing. According to the dictionary, a femtosecond is one quadrillionth, or one millionth of one billionth, of a second. An example of a femtosecond is one femtosecond is to one second, as one second is to about 32 million years.

"In the Air Force, we have to get places in hours, not days or weeks," he said. "What is technology going to be ten or 20 years from now? That's why it's so important what you guys are doing here today."

The camp was part of a larger Defense Department initiative called the DOD Science, Technology, Engineering and Mathematics Diversity Campaign.

"The objective of the (STEM Diversity Campaign) is to foster awareness, build skills and widen pathways into the department's technical workforce for women and underrepresented minorities," said Enjoli Ramsey, the Air Force STEM Diversity Outreach

program manager. "The Air Force recognizes that diverse backgrounds and experiences bring inherently different outlooks and ways of thinking, the key to innovation in organizations as well as our success in the STEM community."

By providing camps like

the ASM Materials Teachers Camp, inner-city school teachers are given tools to foster a culture conducive to growing students in the STEM subject areas.

"Innovative and techni-

cally-savvy Airmen are essential to continued mission execution success," Ramsey said. "Science, technology, engineering and math are a part of every mission we do. We will support the joint

mission by assuring technically superior warfighting capabilities through attracting, recruiting/assessing, developing, and retaining a world class workforce of innovators."



Air Force Vice Chief of Staff Gen. Larry O. Spencer speaks to middle school educators from the Washington, D.C. area July 18, during the AMS Materials Camp at Shaw-Howard University. Spencer expressed educators are a main line of defense to inspire youth in science, technology, engineering and math careers. (U.S. Air Force photo/Staff Sgt. Carlin Leslie)

