



# HIGH MACH

Serving the World's Premier Flight Simulation Test Complex



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## Combined Test Forces take shape at AEDC New process meant to be more 'customer-centric'

By Deidre Ortiz  
ATA Public Affairs

"It's not about fixing something that's broken but about taking something that works and making it work better," Col. Tim West, Senior Materiel Leader and Chief of Test Operations Division at AEDC, said regarding

the transition to a team-centric Combined Test Force (CTF) structure with greater hands-on involvement by government engineers.

West defined a CTF as being "a cohesive unit at the mission-area level, comprised of government and contractor personnel from different organizations,

aligned through one chain of command with the resources, authority, responsibility and accountability to accomplish its test mission."

He explained that testing at the Complex has always consisted of three parts working together: the Test Operating Division, which is charged with planning,

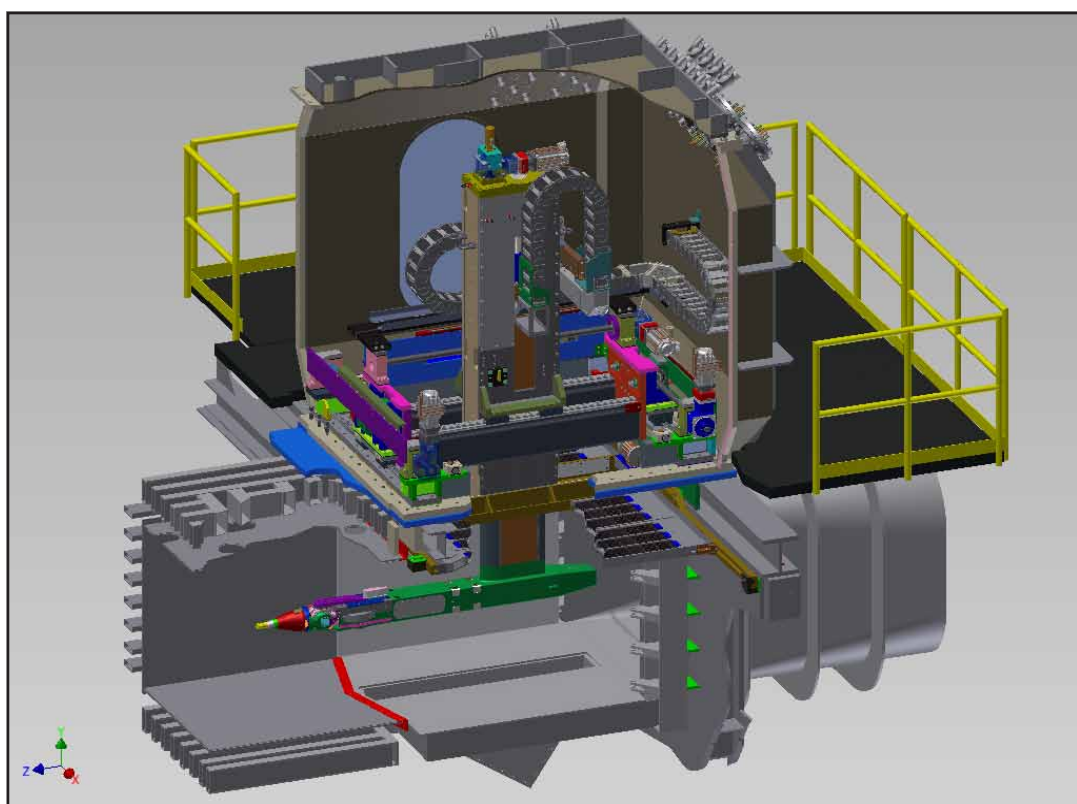
authorizing, and leading the test execution; the Test Support Division, which handles the instrumentation and data collection; and the Test Sustainment Division, which operates the facilities that make the test possible.

"It has always taken these three parts, plus the contractor, to successfully execute a test,"

West said. "The intent of implementing CTFs is to push the integration and interaction of these three parts to a lower echelon, enabling quicker decisions, more timely action, and more efficient test execution. It also pushes decisions about balancing minor

See FORCES, page 5

## AEDC tunnel back online after \$33 million upgrade



The image above is a three-dimensional cutaway view of the new Captive Trajectory System (CTS) recently installed in AEDC's 4-foot Transonic wind tunnel (4T) as part of the facility upgrade. (AEDC Image)

By Kathy Gattis  
ATA Public Affairs

The AEDC wind tunnel 4T, known for store separation testing as well as conventional sting-mounted force and pressure model testing, is now back online after a \$33 million facility upgrade effort. The work was funded by the Test Investment Planning and Programming (TIPP) and the Direct Budget Authority (DBA)

programs.

The upgrade to the tunnel extends the range of testing capability for store separation testing to above 1000 psf (up to ~2000 psf), provides the ability for improved operational flexibility and control of the nozzle, and the new data system is now common to the Von Karman Facility tunnels at AEDC with post-processing capabilities both on- and off-line, according to Ozey Young,

Air Force program manager and Jon Seely, ATA program manager.

The facility was down for two years as part of the upgrade and the tunnel was stripped down, new systems were installed, and extensive system and tunnel air-on checks were accomplished. New systems installed included nozzle controls/actuators,

See UPGRADE, page 5

## Engineers announce National Engineers Week plans Preparing local students for new horizons

By Raquel March  
ATA Public Affairs

Committee members with various professional engineering societies are completing arrangements for scheduled events that will prepare local students in "Engineering New Horizons," which is the theme of the 2015 Engineers Week, Feb. 22-28.

Local events for the week include a MathCounts® competition, a student design competition, an Engineer-for-a-Day program and a banquet.

The MathCounts competition is 8 a.m. on Feb. 21 at the University of Tennessee Space Institute. The competition, which is open to local middle school students, challenges mathletes to solve problems, that if answered correctly, could advance them to the state competition. The winning team will be recognized at the Engineers Week Banquet.

High school teams will participate in the Student Design Competition at the Hands-On-Science Center in Tullahoma on Feb. 24. Tenth through 12<sup>th</sup> grade students design, build and



Dr. John Schmisser

compete their designs against other teams. The teams will be given kits with identical materials and will have one and a half hours to design, build and test.

Prizes will be awarded to the top three scoring teams.

Engineer-for-a-Day is Feb. 26. Engineer-oriented, junior and senior high school students will tour AEDC, have lunch and then go with a mentor to observe engineers at work. Some students will stay at AEDC, others will visit companies in the local area.

See ENGINEERS, page 5

## AEDC personnel walk to remember Dr. Martin Luther King Jr.



The AEDC African American Heritage Committee hosted a remembrance walk on Jan. 15 at AEDC, celebrating the sacrifices of civil rights leader Dr. Martin Luther King Jr. The event was also partly an acknowledgment of King's birthday which is recognized on Jan. 19. The theme for the event was "Remember! Celebrate! Act! ... A Day On, Not a Day Off," which focuses on community service to all individuals. Scan the QR code with this photo using an android device to view a video from the walk or visit the Arnold AFB Facebook Page - <http://on.fb.me/1t2XLgZ> (Photo by Rick Goodfriend)



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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.

**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

# Innovation Grant Program implemented at AEDC

By Col. Raymond Toth  
AEDC Commander

Over the past few years, ATA operated a very successful innovation grant program utilizing corporate funding as part of their proposed investment in the future of AEDC. It's my intention to continue with the spirit and intent of that program by authorizing modest Air Force funding to continue this effort for the long-term benefit of the Complex and the workforce. My goal is for employees and teams to challenge the "status quo" at AEDC by improving productivity/reducing cost, improving deliver-

ables, and enhancing customer and workforce satisfaction.

Innovation is defined as using existing knowledge, technologies, and tools to create/deliver something new in terms of product or process for improving some element of AEDC's performance. That does not imply that all innovation projects are expected to be successful. As a rule, we most often learn the most from our failures. The goal of this program is to create an environment allowing the workforce to pursue significant technical risk on small scales to evaluate the efficacy of substantial changes



Col. Raymond Toth

in the processes, tools, and technology we use to conduct work at AEDC.

This is not a program where studies, papers, or opinions are likely to be the products. There should be a unique product or process demonstration as the

intended deliverable for each innovation effort. This is not simply a different source of funds to procure what you already have as requirements but rather a source of funds to find out if there are better/faster/cheaper ways to satisfy the requirements, or maybe even prove that requirements could be eliminated with minimal impact.

All government and support contractor non-manager, full-time employees working at any AEDC site (including T9 and NFAC) are eligible to submit innovation proposals. While management is excluded from submitting

proposals, they are highly encouraged to promote the program within the workforce.

Teams may include any mix of government/contractor team members, including AFRL.

Projects can be submitted for consideration by the proposal process described in the AEDC Innovation Program guidance document which will be posted on our SharePoint homepage shortly. It should appear under 'Announcements' on the homepage.

Thanks for continuing to help make AEDC and the Air Force the best in the world at what we do.

## Live and work well, starting now

By AEDC Safety, Health and Environmental Office

Do you have an immediate concern about a work, personal or financial issue?

Perhaps you're looking for a little more information and need a bit of assistance. The challenges of daily life can affect our work, our family life, and our health. To provide support during such times, ATA offers employees a no-cost, around-the-clock Employee Assistance Program (EAP).

The EAP includes up to five free, confidential counseling sessions for employees, their eligible dependents and household members who may be experiencing personal or work-related problems.

Don't let minor concerns grow into major problems. Learn to control anxiety, stress, or depression before it gets you down. EAP professional counselors provide guidance on a wide range of issues, including the following:

- Workplace conflicts
- Substance abuse
- Relationship problems
- Parenting and family issues
- Living with chronic conditions
- Legal, financial and retirement
- Depression, anxiety and stress
- Child and elder care support

If you opt for professional help and request counseling services, here's what to expect when you contact EAP: You will be

given a list of providers for what you need, you pick and set an appointment, then contact EAP again to tell them where your appointment is so that they can approve.

What if you don't need to talk with a counselor? Most of us want to try to help ourselves before turning to others, especially for sensitive personal issues. Our EAP can help. There are features such as online, interactive, customizable self-help programs for mental health screening, tobacco cessation, health risk assessments, substance abuse, and more.

For those fortunate enough to have no personal problems, the EAP is packed with information to help prepare for the next steps in life. When you log on with the code

below, you will find sections on Health & Well-Being; Education Work & Career; and Life, Family & Relationships with specific sections on career planning and strategies, workplace issues, and self-improvement. There are resources for topics ranging from asthma, arthritis, and autism to holidays, vacations, and healthy eating as well as help with financial fitness, crisis planning, and suicide prevention.

The EAP is available to ATA employees and members of our households, including those living away from home, so be sure to make access information available to your family. To learn more or to start using the EAP, log onto [www.liveandworkwell.com](http://www.liveandworkwell.com), and use access code

12610. To schedule an appointment with a counselor, call toll free 1-866-828-6049. Remember that use of the site is free and confidential. It is not reported to the company and does not become part of your medical record.

If you feel you are a threat to yourself or someone else, call 911 or go to the nearest emergency room. At work, our medical providers can help and are easily accessible; go to the Dispensary or contact Dr. Rob Tessier, 454-5386, or Lisa Patton, Nurse Practitioner, 454-5635.

Other free, confidential 24/7-resources include the Centerstone Crisis Intervention Line at 1-800-631-7444, and the National Suicide Prevention Lifeline, 1-800-273-8255.

## The Air Force issued me my 'kids'

By Staff Sgt. Nicholas Rau  
460<sup>th</sup> Space Wing Public Affairs

**BUCKLEY AIR FORCE BASE, Colo. (AFNS)** – While I've decided to live the child-free lifestyle, the Air Force, in its infinite wisdom, saw the need to issue me two kids. They are both straight out of technical training and brand new to the Air Force – and one is still too young to accept an adult beverage.

Let's be honest: As children do, they totally cut into my "me time."

In all seriousness, though, these Airmen are bright, young women with an incredible future ahead of them, and I am duty-bound to ensure that doesn't change.

Perhaps like many supervisors, sometimes I feel like a parent. I am responsible for these ladies and their development as Airmen. I have a vested interest in their success and a powerful

role in their morale.

Sometimes that responsibility is easy, but sometimes that responsibility bolts me into action in the middle of the night.

One of my Airmen calls me from the side of the busiest highway in Denver, nearly in tears, and tells me that she had just been in her first car accident. Like any good parent would do, I jump out of bed in my pajama pants and head out the door without thinking twice. In a flurry of hands-free phone calls to our first sergeant and my Airman, who is now backing up the highway for miles, we square everything away and get her back to base with the help of the police and a tow truck driver.

It was after everything was taken care of and she was back in her room that I truly realized being a supervisor was about more than solving a problem.

It was time to listen. She had been through her first car accident ever. She was in a brand new city. She

was on her own for the first time. All things combined, I understood why she was so distraught. For me, this was a challenge to overcome; but for her, this may have been one of her most terrifying experiences. I knew I had to listen.

This experience taught me two valuable lessons. One, if my Airmen are in trouble, I need them to know that they can trust me to take care of them. And two, I need a new pair of pajama pants because crushed blue velvet went out of style two decades ago.

But how do I get these young Airmen to trust me? I am nearly 10 years older, and entire generation separates my interests from theirs. How can I relate?

I became the next Sherlock Homes, paying attention to the little details to find common ground. My investigative eye was on overdrive as I tried to learn more about my other Airman.

She is quieter and a bit less outspoken, but she is

unbelievably artistic. Her talent with a drawing pencil makes me look like a pre-schooler with a crayon. What do a young, female Michelangelo and I have in common? During a dorm room inspection, I observe pop culture posters on the walls and spot her video game system; I can relate to that.

Paying attention to my Airman allowed me a glimpse into her life. Still, was this enough to get her to connect with the oldest person in her work center?

It came down to what my dad did with me for our father-son bonding. He introduced me to Star Wars and Star Trek, engrained classic rock into my head, and shared outlandish stories of his past. These moments brought me closer to him, so I thought it might work with my Airmen.

Well, now they know more 1980s music than they ever thought they would, and they have heard more "old-man" stories than they probably wished to hear. It

took willingness from both sides to adapt, but at the end of the day, we built that Airman-supervisor connection.

I honestly feel that they can trust me. They can come to me with not only problems I can listen to or help solve, but also with the successes they have achieved. Hearing that they won an award or were lauded by the commander gives me the same level of joy and pride as they have. I am proud of my Airmen and they have become more than a required responsibility to me.

The best thing I have found is that every supervisor can come to feel this way. All it takes is a desire to be a part of their Airmen's lives and a genuine interest in their well-being. Find your connections, build them and adapt as necessary, and don't give up on your Airmen.

For me, regardless of whether or not these young ladies are my blood, I wish only the best of success for my "daughters."

## 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 Team AEDC SharePoint site. 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 chat 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

# Base Legal Office offers tax help

By Leslie McGowan  
Arnold Air Force Base  
Legal Office

The 2014 income tax season has arrived and the Arnold Air Force Base Legal Office is offering free Volunteer Income Tax Assistance (VITA) for eligible personnel.

All service members on active duty, retirees, and their dependents are eligible to receive these free services. This year the Legal Office will be able to provide tax services to other categories of filers including DOD civilians whose income is less than \$60,000. IRS-trained volunteers assist tax-filers in

preparing, reviewing and electronically filing their income tax returns. Most customers receive their refund within two weeks.

Tax assistance appointments are available and continue until the yearly tax filing deadline of April 15. Eligible personnel may call the Legal Office at 454-4657 to schedule an appointment. VITA volunteers can provide tax preparation up to advanced and military certification levels which include rental properties and Schedule A itemizations. However, taxpayers filing taxes that are beyond the VITA scope of training and certification, with complicated returns

such as non-deductible IRAs, business with losses, and complicated capital gains and losses, will need assistance from a paid professional preparer for tax assistance.

Military members should access and print their W2s from the MyPay website at <https://mypay.dfas.mil/mypay.aspx> before arriving for their appointment.

If you prefer to use the "do-it-yourself tax returns," Military OneSource has a free federal tax preparation and e-filing program available to military members and their dependents through their website at [www.militaryonesource.com](http://www.militaryonesource.com). The website allows tax filers to utilize a free online version of the H&R Block tool. The software is a simple question and answer program that is a quick and easy way to complete and e-file your federal tax returns. The



Leslie McGowan

program also allows military members the option to e-file their state returns for a small fee. You can also receive military specific advice regarding tax questions at no cost by speaking to a trained Military OneSource tax consultant at 1-800-342-9647.

If you prefer to file your federal and state taxes using the paper forms, these forms are now available on-line for download and printing at [www.irs.gov](http://www.irs.gov) or through the individual state tax websites. The IRS also offers a free tax program, Free File, at [www.irs.gov](http://www.irs.gov) where individuals who make less than \$60,000 can also e-file for free. For

more information, call the Legal Office at 454-4657. For those who are not eligible for the military tax assistance programs, the IRS VITA program is offered at the Coffee County Lannom Memorial Library in Tullahoma by appointment only. For a tax appointment at Tullahoma, call 409-3602.

If you live outside the Tullahoma area and wish to locate your nearest VITA site, call the IRS information VITA line at 1-800-829-1040.

If you are interested in assisting taxpayers with tax preparation at the Arnold AFB Legal Office, call 454-4657.

## ATA Suggestion Program begins New Year with savings

By Raquel March  
ATA Public Affairs

ATA personnel submitted suggestions which provided \$129,024 in savings for the start of the 2015 fiscal year through the ATA Employee Suggestion Program.

For the 2014 fiscal year, ATA employee suggestions provided a total cost savings of \$546,040 for AEDC. The ATA employees that submitted suggestions received awards totaling \$26,409.

According to Kimberly Vanzant, the suggestion program administrator and a project manager and quality auditor in the ATA Performance Management Department, the program is beneficial to the personnel who submit the suggestions as well as AEDC.

"The Employee Suggestion Program is designed to encourage employees to exercise initiative within and beyond their basic job requirements to develop suggestions that improve the performance and quality of work while achieving AEDC mission objectives," Vanzant said. "It also establishes open communication of ideas and maximizes employee talents."

Suggestions may qualify for a monetary award.

If tangible suggestions result in cost savings or in avoiding expenses, that employee is eligible to receive 10 percent of the first year's annualized savings or avoidance up to a maximum of \$3,000.

Approved intangible suggestions, where no cost savings is involved, can result in employees being awarded from \$25 to \$100.

Suggestions should be submitted through Matrix or ATA Employee Suggestion Program form GC-1390 to the department suggestion coordinator.

In addition, suggestions that have potential costs savings or avoidances must be submitted on form GC-1570, Cost Analysis Summary.

For more information, employees may call 454-7459.

## AEDC sponsored FIRST® LEGO® League teams compete

By Deidre Ortiz  
ATA Public Affairs

The FIRST® LEGO® League (FLL®) of Middle Tennessee, which is sponsored by AEDC, recently held its second Tullahoma Regional Qualifying Tournament.

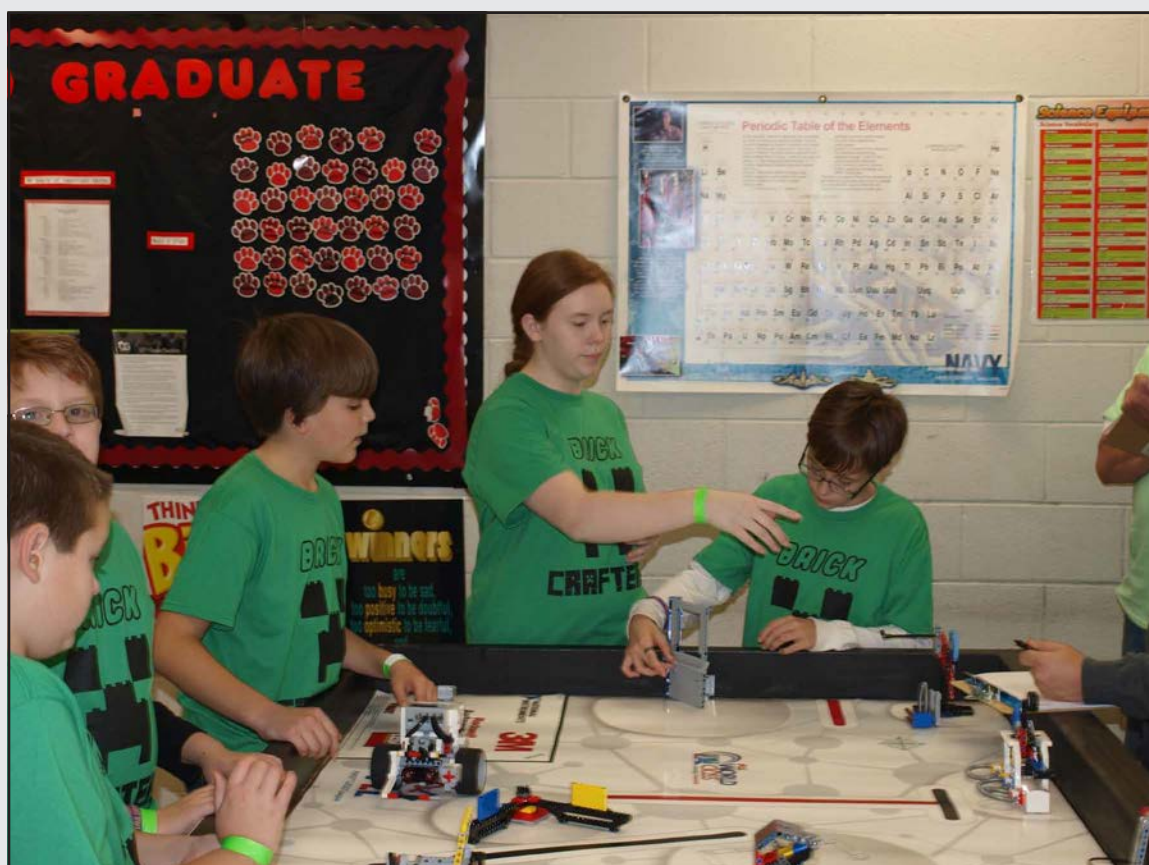
Roughly 400 people were at Tullahoma High School volunteering, watching or participating in this year's qualifying tournament Dec. 6, an event that's officially sanctioned by FLL and sponsored by the Tullahoma Chapter of the Tennessee Society of Professional Engineers (TSPE).

Brian Coate, member of the Tullahoma TSPE Chapter and local tournament director, stated the tournament has grown dramatically over the last few years.

"Our FLL event started seven years ago with a small competition at West Middle School," he said. "From there we moved to UTSI for a year, then to East Middle School for about 4 years. Once we outgrew East Middle School, we had to find a larger venue. So, I am very thankful for the hospitality of Tullahoma High School and its principal Cathy Rose for being so supportive and allowing us to host the event there."

At the qualifying event held in December, a total of 23 teams competed for a chance to attend the regional tournament. Only the top overall teams will now advance to the East Tennessee Championship at Tennessee Tech University (TTU) in Cookeville on Feb. 14.

The area teams that will be moving on to the next round include the Challengers of Shelbyville; Westwood Middle School of Manchester; Thomas Magnet School of Shelbyville; the Cougar Creators from College Street Elementary in Manchester; FHFMM Lego League Team from Manchester; BrickCrafters from Murfreesboro; Challenge Accepted from Central Middle School in Murfreesboro; Lord of Legos from East Middle School in Tullahoma; Brick Dynasty from Murfrees-



Students on the BrickCrafters team explain their robot design. The BrickCrafters, from Murfreesboro, is one of 12 FIRST® LEGO® League (FLL®) teams from the area that will be advancing to the East Tennessee Championship at Tennessee Tech University (TTU) in Cookeville. (Photo provided)

boro; the Knight O.W.L.S. of Riverside Christian Academy in Fayetteville; the Lego Masters from Clark Memorial School in Winchester; and the Lego Warriors from Woodland Elementary in Bradyville.

Not only do the students put in a lot of time and preparation for each competition, but volunteers also play a big part in making the area FLL such a success by serving in various roles.

AEDC employee John McInturff, FLL volunteer who has been head referee for the three years now, stated that one of the best things about the event is watching the teams and kids grow from year to year.

"You can see what teams have been doing it for a while but the new teams always have novel ideas," he said.

McInturff added the FLL tournaments are unique in that though a competitive event, there's little conflict between the kids, coaches or parents.

"Most teams are really engaged and enthusiastic and try to help each other. The teams are competing and the desire to win

is great but they do so in a very positive manner."

The positivity shown by everyone involved in FLL reflects the emphasis put on the following Core Values (CVs):

- We are a team
- We do the work to find solutions with guidance from our coaches and mentors
- We know our coaches and mentors don't have all the answers; we learn together
- We honor the spirit of friendly competition
- What we discover is more important than what we win
- We share our experiences with others
- We display Gracious Professionalism® and Cooperation® in everything we do
- We have fun!

ATA Deputy General Manager Jeff Haars and AEDC engineer Dana Alexander served as one team of CV judges for this year's regional qualifying tournament. Haars explained that he and Alexander's assignment was to assess each team's understanding of the FLL Core Values,

application of the CVs to their FLL project and broader application of CVs outside of the FLL.

"I have experience as a Project Judge in FLL but this was my first time as a Core Values judge," he said. "Since Core Values represent a philosophy, assessing the team's understanding required much more interaction with the kids. We were charged with assessing that the teams understood the Core Values and, more importantly, how they guided their behavior within the FLL team. It was a great experience."

"The kids worked very hard to come up with novel approaches to demonstrate their Core Values – skits, songs, games, displays and candid conversation. I was impressed with their effort and heartened by their enthusiasm."

FLL's goal is to introduce younger students to real-world engineering challenges, and as part of the program, youth are able to build teamwork skills and learn about exciting career possibilities.

McInturff encourages anyone interested in seeing the teams in action or helping the league in any way to become a volunteer.

"Without the volunteers the events would not take place," he said. "I personally feel that volunteering allows me to give a little back to community and maybe make a small difference."

Having another successful qualifying tournament in the bag, organizers and volunteers are already thinking about the next one.

"I think this year's tournament went really well and I have to thank Judge Advisor Harry Clark (AEDC senior manager of test facility planning) for all the work he put into coordinating the volunteer judges," Coate said. "This is the biggest year we have had and I anticipate it being even bigger next year."



The students on the Lego Warriors team, from Woodland Elementary, demonstrate how their project works. Phil Stich, a Jacob's consultant and FLL tournament volunteer (pictured right center) looks on. (Photo provided)

## ATA makes a donation to Huntland High School



The ATA Employee and Community Activities Committee (E&CAC) recently made a \$600 donation to Huntland High School to support their Math department, the Chromebook technology initiative, Project Graduation and the baseball team. Pictured left to right is the school's Principal William Bishop II, baseball coach Michael Tipps, E&CAC representative Andrea Stephens, math teacher Rebecca Walker and guidance counselor Pam Joynt. (Photo by J.C. Stephens)



## Cowan Football program receives ATA donation

The Cowan Lions Football program receives a \$150 donation for the team member's safety equipment from the ATA Employee and Community Activities Committee (E&CAC). Pictured left to right are program volunteers Joshua and Amanda Kelly, E&CAC representative Andrea Stephens, Cowan Lions Football program President Sammy Shedd and the program treasurer Wayne Smith. (Photo by Kylee Stephens)

# AFRL engineers awarded for fostering innovation, teamwork

By Leslie Klein  
Secretary of the AF  
Acquisition Excellence  
and Change Office

**WRIGHT-PATERSON AIR FORCE BASE, Ohio (AFNS)** – Two Air Force electronics engineers received the 2014 National Security and International Affairs Medal for saving the lives of Soldiers in Afghanistan by creating and deploying a new aerial sensor system to help U.S. Army and special forces units detect and destroy deadly improvised explosive devices.

Ben Tran and Sean Young, both from the Center for Rapid Innovation in the Air Force Research Laboratory at Wright-Patterson AFB were honored recently by the Partnership for Public Service with

one of the Samuel J. Heyman Service to America Medals (SAMMIES). The SAMMIES are presented annually to honor members of the federal workforce who have made significant contributions to the United States. Recipients are selected based on criteria including commitment, innovation and the impact of their work on the nation as a whole.

Tran and Young led the development, testing and deployment of sensors, which were placed on unmanned aerial vehicles. In the first fifteen months of their first deployment, with new small unmanned aerial system (SUAS) technology in support of an Army division in Afghanistan, no Soldiers in the unit were killed by roadside bombs. The second implementa-

tion has been in place for the past year and has exposed many IEDs and other malicious acts against coalition forces.

Miniature radio frequency sensors, which have increased sensing coverage over traditional SUAS technology, were inserted on the aircraft and enabled complete visibility on the range. This innovative technology was the first to use radio frequency sensors together with electro-optical and infrared sensors in this manner.

Tran and Young attribute much of their success to the relationships developed with their customers and integrated teams. By attending their customers' exercises and mission briefings, they developed a foundational understanding of the missions and the

tools currently in existence to address the missions and find the gaps.

"At the beginning, it's difficult for anyone to establish a relationship with the customer," Tran said. "But working with leadership and other senior engineers, we were able to make the initial connections and continue to develop relationships."

Now, they receive phone calls from returning special forces who provide feedback on their systems and where they could make improvements.

"We'll take that feedback and we'll try to loop it back into our systems to continue developing the technology to address their concerns or fill capability gaps," Tran said.

Once the development teams are established, Tran and Young are mindful to provide as much information to as many government and contractor personnel as possible.

"Understanding there are security and proprietary limitations, we op-

erate under a full disclosure," Young said. "We want everyone to have an appreciation for the type of work they are doing and how it ultimately contributes to the war effort or technology gap."

"The question that always comes up," Young continued, "is 'Who is actually part of your team?' We make the team as inclusive as possible. It's not just the engineers and program managers. It includes the finance folks and the contracting officers and the security team. We really try to include everybody in all aspects, even if we know they have no equity on a certain part of the program. We give them a briefing on exactly what the system is and why it's important, which goes a long way in fostering a holistic team approach where everyone is motivated by the common purpose."

The team knows that due to the nature of their rapid acquisition work, everything they do needs to be done 'yesterday.'

They said they take technical barriers in stride, and know nothing ever works exactly as planned. They acknowledge the challenges and continue to move forward.

"It takes the right mindset," Young added. "You have to appreciate the work that's required and understand where you need to go and how you need to get there. We follow the same processes as everybody else. Just having these relationships help make our processes move faster."

"Putting people together with unlike minds where they have different backgrounds, different experiences, and different expectations really fosters innovation," Young continued. "We've taken engineers, and put them directly in the room with people who spend their days fighting wars, and ask how we can take their experience and our technology and provide them the

**ENGINEERS** from page 1

On March 2, the Engineers Week Banquet will be at the Manchester/Coffee County Conference Center. The banquet speaker is Dr. John Schmisser who joined the faculty of the University of Tennessee (UT), Knoxville, Department of Mechanical, Aerospace, and Biomedical Engineering in Aug. 2014. He instructs and leads research at the University of Tennessee Space Institute.

Prior to joining the UT faculty, Schmisser was the chief of the Energy, Power & Propulsion Sciences Division and program manager for Aerothermodynamics within the Air Force Office of Scientific Research (AFOSR). During his tenure at AFOSR, he initiated and led a national strategic research plan which has guided the research efforts of multiple federal agencies, championed the transition of basic research capabilities that have advanced flag-

ship national hypersonics technology programs and transformed test and evaluation capabilities, and envisioned the HIFiRE program which unifies the efforts of AFRL, NASA and the Australian Defence Science and Technology Organization to advance fundamental hypersonic science and technology via flight research.

The banquet social begins at 5:30 p.m., dinner begins at 6 p.m. and the program begins at 7 p.m. Tickets are available through Feb. 23 and the cost is \$30. Tickets may be purchased through John Jordan, 454-4335; Harry Clark, 454-4495; Jim Link, 454-6093; Paul Kelly, 454-6542; Bill Carpenter, 393-6632; and Joe Wehrmeyer, 454-4345.

The Engineers Week activities are sponsored by the Tullahoma Chapter of the Tennessee Society of Professional Engineers, the Highland Rim Chapter of the American Society



**The 2014 Engineers Week Student Design Competition team members Grant Rigney (left) and Becca White (right) from Tullahoma High School prepare their vehicle to hit a target. They were awarded third place at the 2014 competition on Feb. 18 at the Hands on Science Center in Tullahoma. (Photo by Rick Goodfriend)**

of Mechanical Engineers, the Tennessee section of the American Institute of Aeronautics and Astronautics, the Society for Maintenance and Reli-

ability Professionals, the Project Management Institute, and the Arnold Association of Professional Societies.

During the week of ac-

tivities, volunteers have the opportunity to conduct hands-on activities with students; talk to a group of students about engineering; or participate in

community engineering events.

Volunteers are invited to assist in the events. To volunteer or for more information, call 454-6316.

**FORCES** from page 1

maintenance and test operations to a lower level, making the CTF chiefs responsible for both. I believe it will give us a more customer-centric, responsive organization."

One unique aspect of AEDC's implementation of the CTF concept is that the organization chart is not being modified to reflect this. Rather, CTFs will function more like Integrated Product Teams (IPTs) than organizations.

According to West, CTF chiefs will be dual-hatted as branch chiefs. As branch chiefs, these individuals will be responsible for organizing, training and

equipping their personnel; as CTF chiefs, they will be responsible for executing both testing and minor maintenance.

"When the Air Force Test Center and Air Force Materiel Command look at our Unit Manning Document, or UMD, they will see a hierarchical Complex, organized by branches and divisions; when our customers look at us, they will see a unified team working together at the lowest possible level to get the mission done."

Under the new structure, five CTFs have been established, utilizing matrixed personnel from all

three AEDC divisions. Locally, Leo Marple will lead the Wind Tunnel CTF, Lt. Col. Anthony Walker will lead the Propulsion CTF, and Lt. Col. Jay Orson will oversee the Space and Missiles CTF. AEDC's two Geographically Separated Units, Tunnel 9 at White Oak, Md., and the National Full Scale Aerodynamics Complex (NFAC) at Moffett Field, Calif., have essentially functioned as CTFs since becoming part of AEDC. Dan Marren will continue to lead the Tunnel 9 CTF, and Scott Waltermire will lead the NFAC CTF.

West noted that one

growing difference that customers are already noticing is the more active involvement of local Government engineers in the test control rooms.

"In the past, Air Force personnel might stop by the control rooms for a status update, or for a programmatic discussion with the customer; today, those same engineers are working second and third shift and serving as active participants in control room operations," West said. "They are more actively engaged with the customer on test sequencing and real-time data analysis; in general, they have a more active

leadership role. This role will grow as the number of base support contracts grows in October."

West also noted that although the Department of Defense and Air Force may be taking a more hands-on role in the testing at AEDC, "the contractors still have – and will always have – a crucial role to play. We cannot accomplish our mission without them; we simply do not have enough billets to organically operate the base, even if we wanted to."

The Complex began operating under the CTF structure on Oct. 1 of last year. The CTFs are expected to be fully operational by the end of the fiscal year.

"The transition was never intended as a radical 'night and day' change; rather, it has been more of a ramp up, with the contractor playing an active role in some of the training," West said. "Some may be saying 'well, I really don't see any major difference.' In the near term, that may be true, but the true test will be whether a dramatic difference occurs over the one or two years – and I believe it will."

West said many of the transition activities, such as rewriting AEDC instructions and revamping training programs, are happening behind the scenes.

He added that some have questioned the timing for CTF implementation.

"Why not delay it to align with the contract transition?" The answer is simple: the Government team must be ready to serve as the integrator when we go to a six-contract structure in October. We need to work the bugs out of the CTF concept now so that we will be ready to take on the integration role in nine months. Getting the CTF right today will help us get the transition right in October."

West's bottom line: "It's really about taking a base that has done a tremendous job for the warfighter over the years, and making it even better. I truly believe that five years from now when we look back at what we've accomplished, we'll all agree that the growing pain we experienced during this transformation was worthwhile, and enabled us to deliver a better product to the warfighter."

**UPGRADE** from page 1

Automatic Model Attitude Positioning System Roll mechanism, a replacement for the floor seal flaps, a new Captive Trajectory Support (CTS) System, and a new Data Acquisition System.

Mike Mills, ATA tunnel senior engineer, says customers can be assured the high quality tunnel data that AEDC is known for is

still there, but even better. "Part of our work included an extensive calibration effort," he said. "F-15 model data was compared with a historical data set; the typical centerline pipe tunnel calibration was expanded beyond what has been done in the past to further characterize the tunnel flow quality; a second tunnel calibration using the centerline

pipe was accomplished using a DoE (Design of Experiments) approach; a cone probe survey was accomplished for flow-angularity characterization; and a humidity-effects study was conducted."

The majority of the work for the 4T upgrade was accomplished with AEDC personnel from concept, design, manu-

facturing, installation and testing and check outs. The planning and execution took seven years.

The renovation will prepare AEDC to support the Department of Defense in the years ahead. The tunnel operates between Mach .05 and Mach 2.5.

Testing in 4T resumed immediately after the upgrade.

**AFRL** from page 4

best resources."

They also rely on a network of military, academic, and industry experts that they called iNET, short for the Center of Rapid Innovation Network. Composed of about 60 experts around the country spanning all areas of technical expertise, Tran and Young know they can reach out to any number of experts to help when problems arise.

"iNET allows us to go across the country and find the best of the best in every technical area," Young said. "If we could only reach out to one geographic area, we wouldn't have access to the same caliber of resources. It's more difficult to manage a project where people are distributed, but with communication and regular status calls to make sure we're all working towards the same goals, it works."

Similar to USSOCOM's Ghost Program, the AFRL Center for Rapid Innovation deploys company grade officers and junior civilians as liaison officers to different deployed systems. Since 2009, more than 20 people have witnessed their systems in action through

these volunteer deployment opportunities.

"Our leadership has been extremely supportive, allowing our folks to take their innovative ideas and implement them directly into the field, and then come back to the Lab with their niche technical areas and feed those lessons learned back into the

Lab and Acquisition Cycle – it's been huge," said Tran, who deployed to and Iraq once and twice to Afghanistan since 2011.

Asked to advise the acquisition community on how to think outside the box and create innovative solutions, both engineers stressed the importance of relationship building and

teamwork. Tran recommended attending professional conferences and operational exercises to meet technical counterparts and continue to build these crucial relationships.

"We show everyone their work is appreciated and use that to motivate the entire team," Young said.

# Bomber force prepares for B-52 bomb bay upgrade testing

By Jet Fabara  
412<sup>th</sup> Test Wing Public  
Affairs

**EDWARDS AIR FORCE BASE, Calif.** (AFNS) – Since the Air Force’s decision in 2013 to increase the B-52H Stratofortress fleet’s effectiveness and versatility by increasing the aircraft’s smart weapons capacity by over 50 percent, teams from Tinker Air Force Base, Oklahoma, Boeing, and now Edwards AFB, have partnered up to begin developmental testing on the bombers newest

upgrade.

This new upgrade comes in the form of a Conventional Rotary Launcher (CRL), which members from the 419th Flight Test Squadron, the Global Power Bomber Combined Test Force and Boeing installed on an Edwards AFB B-52H this past December.

“The upgrade modifies the internal weapons bay of the B-52H bomber by integrating a CRL that has the capability of carrying Military Standard 1760 ‘smart weapons,’” said Jeff Lupton, the Boeing 1760

program manager.

According to the Boeing test team, the upgrade is essential because it increases weapons capability on the external wing stations of the B-52H, while adding the smart weapons capability for the first time to the bomb bay.

“One of the benefits of the 1760 upgrade is it brings a lot of capability to the B-52 we don’t currently have on the aircraft,” said Capt. Ryan Hefron, a B-52 test pilot at the 419th FLTS. “We weren’t able to carry smart weapons inside

the bomb bay, but now with the new CRL we’ll be able to carry Joint Direct Attack Munitions with the first increment and with future increments we’ll be able to carry Joint Air-to-Surface Standoff Missiles and Miniature Air Launched Decoys.”

According to Lupton, the addition of smart weapons capability to the internal weapons bays allows the bomber to respond with accuracy and flexibility in real time to the warfighter’s needs.

“The upgrade adds ca-

pability while remaining affordable by adapting existing technology for use in the weapons bay,” Lupton said. “By providing smart weapons capability in the bay, the bomber can be employed in a clean wing configuration, (meaning) no weapons on the external pylons, thus increasing its range and loiter time.”

The increased carriage of smart weapons would allow the B-52 to engage more targets precisely compared to the unguided bombs currently approved for bay carriage, Hefron said.

“By being able to integrate smart weapons in the bay, we can prosecute more targets, more precisely, while minimizing collateral damage,” Hefron said. “It will allow us to perform direct attack, provide close air support for our Army brethren on the ground and be able to execute our overall mission more effectively and efficiently. With future increments, our strategic attack capability will be en-

hanced, which is the cornerstone of the B-52; by being able to perform long range strikes and carry smart weapons in the bay.”

At the conclusion of the upgrade, all B-52H’s will be modified with this unique capability and the aircraft will be available for employment by Air Force combatant commanders, Lupton said.

Lupton added there are several stages of testing included with the hardware and software modifications. The final stage of the upgrade will include approximately 10 test flights to verify the B-52H’s upgraded capability.

“The test team, including Boeing and Edwards AFB personnel, will first conduct a series of ground tests to include, Timeline Integration and Electromagnetic Interference Checks,” Lupton said. “After the data analysis and review is complete, we will conduct a series of flight tests to include live weapon releases.”



Team members from the 419th Flight Test Squadron, the Global Power Bomber Combined Test Force and Boeing installed a Conventional Rotary Launcher (CRL) December 2014, on a B-52H Stratofortress from Edwards Air Force Base, Calif. The upgrade modifies the internal weapons bay of the B-52H by integrating a CRL that has the capability of carrying Military Standard 1760 “smart weapons.” (U.S. Air Force photo/Bobbi Zapka)

## Begin with a new good habit

By AEDC Safety, Health  
and Environmental  
Office

When most of us hear the word *habit*, negative thoughts pop into our minds. But a habit is simply a practice we’ve adopted over time. Through repetition, it becomes a part of our lives – for better or for worse.

The problem with a bad habit is that once it takes hold, it won’t let go. It is usually harder to break a bad habit than it was to build it in the first place. The best way to get rid of a bad habit is to replace it with a good one.

Good habits, like any other skill, require practice;

they’ve gained one step at a time. Once acquired, a good habit becomes a kind of “autopilot,” keeping us on a steady course, moving us closer to our goals – whether it’s changing the world or simply hanging on to enjoy a safe, healthy retirement. This “step at a time” process applies to Beyond Zero where we want to practice daily improvement until it becomes habit.

The secret to our future lies in our daily habits; so we each need to ask: “Will the habits we build today help achieve our purpose and goals in life?” If the answer is “No,” we need to start change today – one step at a time.

# Explore 'movie star' C-17, on national museum of the U.S. Air Force app, virtual tour

DAYTON, Ohio – As you take a 360-degree tour inside the cargo area of the C-17 on display at the National Museum of the U.S. Air Force, you'll notice typical items you'd see in many aircraft – cargo seats, a pallet, even a bumper sticker that says "I love flying." But look closer and you'll see something a little more unusual on this particular aircraft.

In addition to its unique role as a flight test aircraft, this C-17 was also a Hollywood star. It appeared in five motion pictures – "Transformers," "Iron Man," "Transformers: Revenge of the Fallen," "Iron Man 2" and "Superman: Man of Steel" – as well as country superstar Toby Keith's Emmy Award-winning production of "American Soldier." Stickers from the "Transformers" and "Iron Man" movies are visible inside the aircraft, along with autographs from "Iron Man" stars Robert Downey Jr. and Gwyneth Paltrow and director Jon Favreau.

Interior views of the C-17's flight deck, observation and loadmaster

stations and cargo area, along with inside looks at the C-130E, EC-135E and C-141C *Hanoi Taxi*, were recently added to the ACI Cockpit360° app available from the museum and AeroCapture Images. These four aircraft are currently on display in the museum's Air Park.

The free app features high-definition panoramic photos of the interiors of 29 well-known aircraft on display at the museum. Several of the aircraft, including the most recent additions, include multiple "nodes," showing various views. The app is currently available for free download from the Apple and Google Play stores.

"This adds 23 new interior views to the Cockpit360° images we already had available," said Bryan Carnes, the museum's lead for this project. "It's a great way to make the inside of these historic aircraft available to millions of people without the wear and tear that would occur if they were to walk through them in person." The interior photos

also are available on the museum's interactive 360-degree virtual tour, which allows users to explore the museum at their leisure through factsheets, supplemental information and educational tools based on the museum's collection. The tour is available at [www.nmusafvirtualtour.com](http://www.nmusafvirtualtour.com). A list of links to the interior images is available at [www.nationalmuseum.af.mil/virtualtour/cockpits.asp](http://www.nationalmuseum.af.mil/virtualtour/cockpits.asp).

The museum plans to feature additional cockpit photos as time and resources allow.

The National Museum of the U.S. Air Force, located at Wright-Patterson Air Force Base near Dayton, Ohio, is the world's largest military aviation museum. With free admission and parking, the museum features more than 360 aerospace vehicles and missiles and thousands of artifacts amid more than 17 acres of indoor exhibit space. Each year about one million visitors from around the world come to the museum. For more information, visit [www.nationalmuseum.af.mil](http://www.nationalmuseum.af.mil).



Pictured left to right, are AEDC Woman's Club (WC) members Pam Wiedemer, Theresa Toth, Violet Nauseef and Susan Harris displaying an accessory that may be used for the February WC fashion show. (Photo provided)

## Spring fashions ahead for AEDC Woman's Club

By Barbara McGuire  
AEDC Woman's Club

The ladies of the AEDC Woman's Club (WC) are seeking warmer weather and will don spring fashions at the Feb. 3 club meeting at the Arnold Lakeside Center.

Burke's Outlet Store, located at Northgate Mall in Tullahoma, will provide items for a fashion show featuring the WC members. Burke's is a division of Beall's Department Stores, founded in Florida.

Club members will make donations at the February meeting to the Scholarship Foundation for the 2015 Scholarship Awards. For information please call (931) 962-3331.

Table donations at the January meeting were \$150 which will be donated to the Good Samaritan of Franklin County. Table donations for the February meeting will go toward the Coffee County Anti-Drug Coalition and the Coffee County Children's Advocacy Center (CAC). The CAC will

use the funds for the 2015 Unite – Building Strong Families Conference on March 4-5 at the National Guard Readiness Center in Tullahoma.

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

Reservations and can-

cellations for the Feb. 3 meeting must be made no later than noon, Jan. 27. You may make reservations or cancellations by calling 393-2552 or 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.*

## The Cove to offer free marriage retreats for active-duty military members

ASHVILLE, N.C. – The Cove has announced three marriage retreats in 2015 designed specifically for active-duty, Guard and Reserve service members and their spouses. These programs are free of charge and will provide biblical perspective on marriage with practical applications for the unique experiences of military life.

Those interested in attending must complete a scholarship application.

"These retreats are our way of supporting our brave service men and women," said Jill Gottenstrater, promo-

tions manager at The Cove. "We understand the strain that military life can have on a marriage, and The Cove provides the serene setting many couples need to get alone with God and experience renewal."

Here is a list of the upcoming military marriage retreats:

- Feb. 19-20: Building a Resilient Marriage in Turbulent Times with John Cook
- May 29-31: Building a Lifelong Love with Gary Thomas

- Sept. 4-6: God and Family: Enhancing Your Most Important Relationships with Gary Chapman

All military personnel desiring to attend one of these seminars will need to complete and return a Military Scholarship Form application to The Billy Graham Training Center at The Cove. Details can be found at [www.thecove.org](http://www.thecove.org) or by calling (800) 950-2092.

The Cove is located in Asheville, N.C. at the Billy Graham Training Center.

## Air Force brings ideas to Defense Innovation Initiative

By Amaani Lyle  
DOD News Defense  
Media Activity

WASHINGTON (AFNS) – In dual remarks during the State of the Air Force press briefing here Jan. 15, Air Force Secretary Deborah Lee James and the Air Force chief of staff announced plans to bring the service's research, science and technology ideas to the Defense Innovation Initiative, led by Deputy Secretary of Defense Bob Work.

Gen. Mark Welsh III, the chief of staff, said the overall vision realized will help the Air Force and each of the services reduce costs, maintain a technological edge and enhance the

procurement process. "Under the secretary's guidance, we're now putting together a new strategic master plan that includes an annex that is purely science and technology, prioritization, ideas for the future (and) technology we can use to change the way we do business," Welsh said.

Some of the standard ideas, Welsh noted, include hypersonic technology, directed energy and quantum computing.

"The new advanced engine technology demonstrator is a great example of a place where we could not only get better performance but save maybe as much as 25 percent of fuel costs," Welsh said. "If

we can prove that, we need to get that fuel on as many airplanes as we can afford over a reasonable timeline because that's a game-changer in cost with the number of hours that we fly airplanes around the world."

The general said the Air Force should also build on successful efforts in other services such as the Navy.

"We should be looking at laser defense against air-to-air or surface-to-air missiles, we should be exploiting laser communications," Welsh said. "There are a number of ways that we should be moving forward ... this is a great opportunity in my mind (and) the possibilities here are just endless."







# Tennessee Space Week, Jan. 25-31:

## A 57-year review of testing space systems at AEDC

The Tennessee Education Association (TEA) Tennessee Space Week (TSW) is a statewide project designed to increase student interest and performance in Science, Technology, Engineering and Mathematics through a focus on aerospace programs and accomplishments. TEA acted to honor the life and teaching of National Education Association member Christa McAuliffe, who was aboard the Challenger as America's first teacher in space, when it disintegrated 73 seconds into its flight. Activities are co-sponsored by the TEA, the Tennessee Space Grant Consortium, and the National Aeronautics and Space Administration (NASA). The TSW originated in 1986.

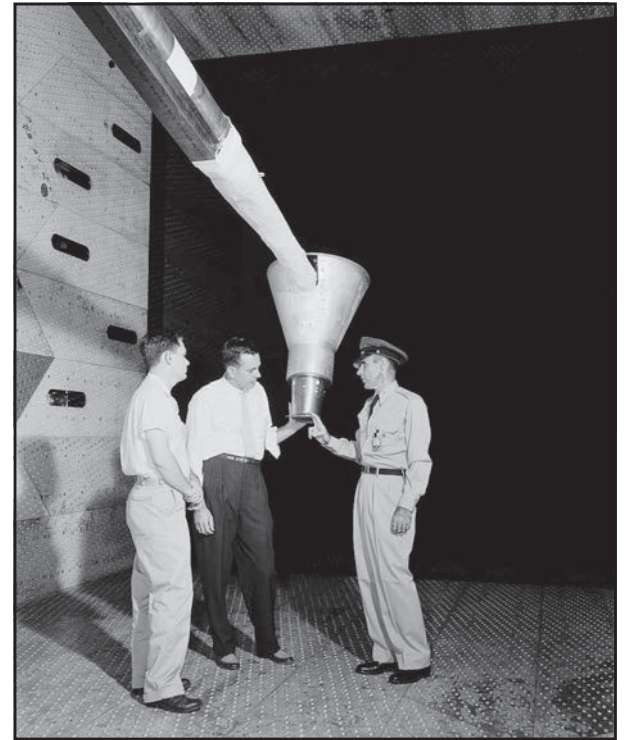
AEDC has played a key role in providing essential testing for the U.S. space program. Here is a list of major space projects AEDC has supported.

# 50s

Atlas • Discover • Manned Orbiting Laboratory (MOL) • Mercury • Gemini • Saturn V • Titan II • Vanguard



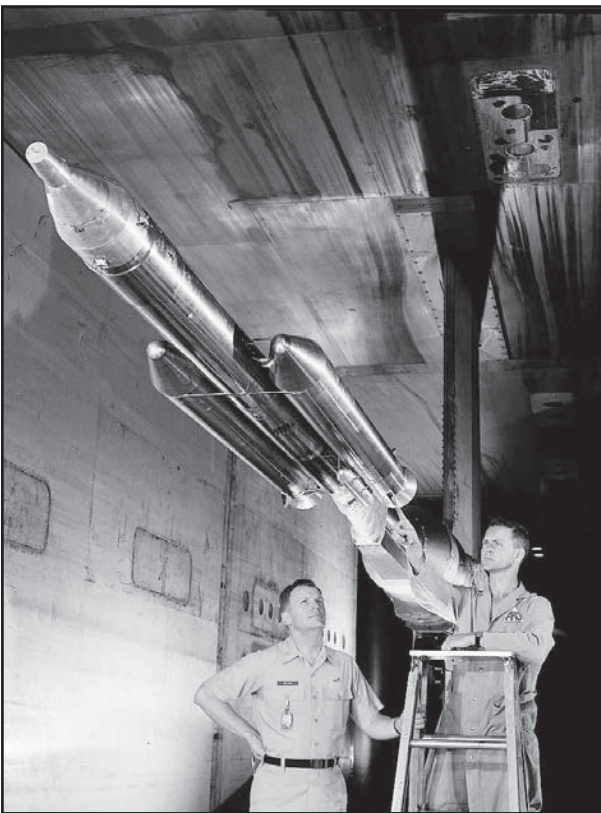
Atlas



Mercury

# 60s

Apollo • DynaSoar • Gemini • Scout • Skylab • Titan III • Titan 34D • Transtage • Voyager • Viking



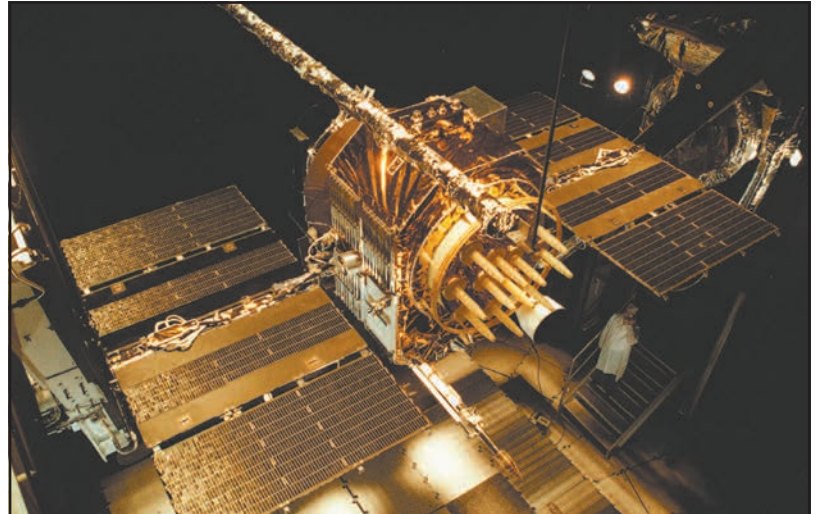
Gemini



DynaSoar

# 70s

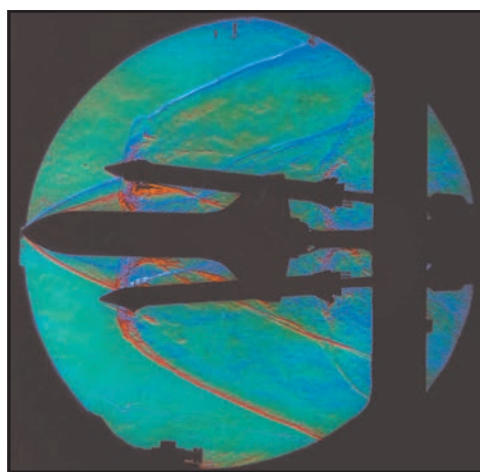
Eris • Fleet Satellite Communications System (FLTSATCOM) • Navigation System Timing and Ranging (NAVSTAR) Global Positioning Satellite • Space Transportation System (Space Shuttle) • Star 12-48



NAVSTAR Global Positioning Satellite



Apollo



Space Shuttle



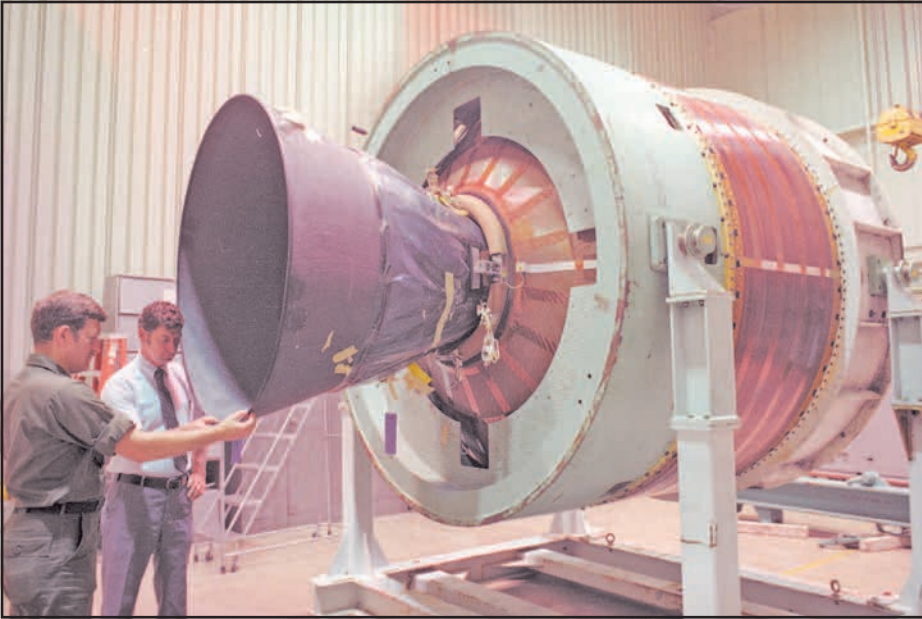
Space Shuttle

# Tennessee Space Week, Jan. 25-31:

## A 57-year review of testing space systems at AEDC

### 80s

Interim Upper Stage (IUS) • Payload Assist Module (PAM) • Intelstat VI



Intelstat VI



PAM

### 00s

Crew Exploration Vehicle (CEV) • Geostationary Operational Environmental Satellite - M (GOES-M) • Mars Lander • Mars Science Laboratory • Orion



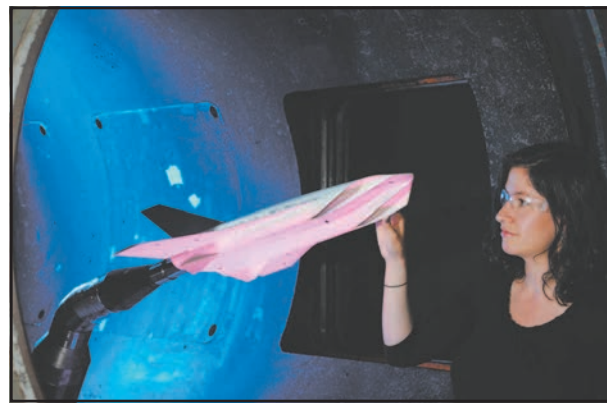
Crew Exploration Vehicle (CEV)



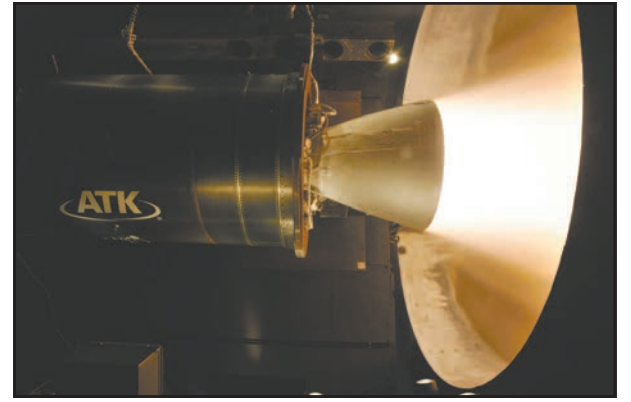
GOES-M

### 10s

Debrisat space collisions testing • Hypersonic International Flight Experimentation (HiFEX) vehicle • CASTOR® 30XL

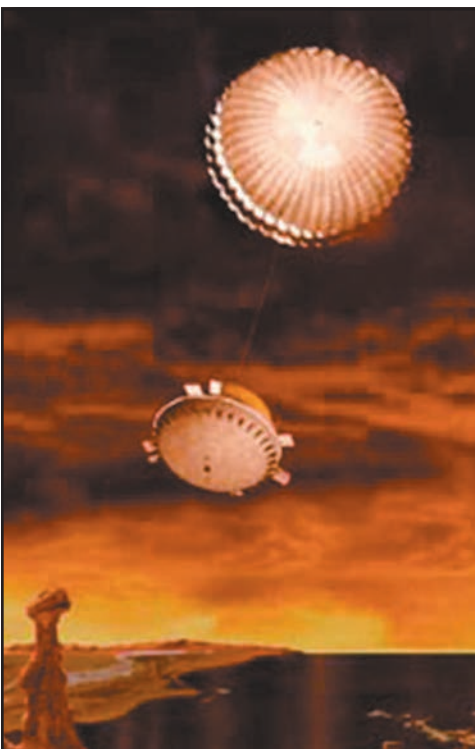


HiFEX vehicle



CASTOR® 30XL

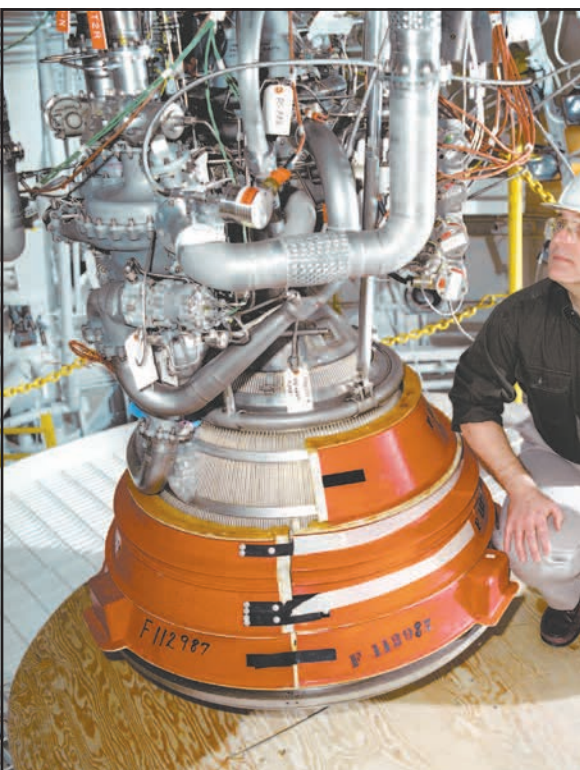
### 90s



Cassini Huygens



International Space Station



Pathfinder

International Space Station • Evolved Expendable Launch Vehicle (EELV) • Cassini Huygens • Pathfinder

