



HIGH MACH

Serving the World's Premier Flight Simulation Test Complex



Vol. 63, No. 22

Arnold AFB, Tenn.

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November 21, 2016

AF approves request to realign separate Test Center assets under Arnold AFB



An F-35 endures freezing temperatures in the 96th Test Wing's McKinley Climatic Laboratory at Eglin Air Force Base, Fla., Jan. 27, 2015. The joint strike fighter has undergone four months of climate testing in the lab to certify the fleet to deploy to any corner of the world. (U.S. Air Force photo/Samuel King Jr.)

By Air Force Test Center
Public Affairs

EDWARDS AIR FORCE BASE, California – The Air Force has approved an Organizational Change Request to realign selected Air Force Test Center operations and facilities from several separate locations under

one commander at Arnold Engineering Development Complex, Tennessee.

This change consolidates the current capabilities of the AEDC at Arnold AFB, Tennessee; the Hypersonic Combined Test Force, which is currently part of the 412th Test Wing at Edwards AFB, California; and all the current

capabilities of the 96th Test Group, headquartered at Holloman AFB, New Mexico; and the McKinley Climatic Laboratory at Eglin AFB, Florida. The 96th TG and the MCL are currently part of the 96th Test Wing at Eglin AFB, Florida.

Additional capabilities to be consolidated

are located at the Federal Research Center at White Oak, Maryland and operating locations at Kirtland AFB, New Mexico; Moffett Federal Airfield, California; Wright-Patterson AFB, Ohio; and the Army's White Sands Missile Range, New Mexico.

As part of this action the 96th Test Group and

796th Test Support Squadron at Holloman will be inactivated and will then be activated as the 704th Test Group and 704th Test Support Squadron, respectively.

The duty locations, manpower authorizations and resources of the 704th TG and 704th TSS will be exactly the same as the inactivated 96th

TG and 796th TSS. Only the parent unit will change – from the 96th TW to AEDC. This realignment will only impact the administrative reporting chain of the affected organizations and will not require the transfer of personnel or any change in missions at those locations.

See **REALIGN**, page 3

Lean Six Sigma focus increases at AEDC

By Raquel March
AEDC Public Affairs

After approximately two years of transitioning to six Complex operation contracts and standing up the Combined Test Force, leadership at AEDC are beginning to turn more focus on continuous process improvement (CPI) and the Lean Six Sigma (LSS) industry standard.

The CPI is an Air Force program which includes LSS and other tools such as Business Process Reengineering and Balanced Scorecard. LSS presents methods of improving a company's productivity and profitability, or more specifically, cost effectiveness for AEDC.

According to the Lean Six Sigma Institute, "Lean," developed by the Toyota Motor Corp., improves service speed or lead time by eliminating the waste in any process. "Six Sigma," developed by Motorola Mobility LLC, improves the quality of products and services by eliminating variability.

CPI and LSS a requirement

A recent news release from the Air Force Test Center states that the Center is waiting for approval to designate AEDC as a Wing-equivalent organization. Col. Ray Briggs, chief of Test Systems Sustainment Division at AEDC, explains requirements for a Wing as well as for the supporting contractors at the Complex.

"Air Force Instruction 38-401, released April 15, 2016, requires a CPI program for Air Force organizations at the Wing level," he said.

See **INCREASE**, page 3

AEDC Technical Excellence: CFD analysis

By Deidre Ortiz
AEDC Public Affairs

Two AEDC analysts specializing in computational fluid dynamics recently provided insight on how technology has been beneficial to their areas of expertise during a technical excellence seminar held at Arnold AFB.

Jason Klepper, CFD analyst who has worked at AEDC for 18 years, presented on the dynamic inlet simulation demonstration for airframe-propulsion integration.

"An aircraft inlet system captures airflow and delivers it to an engine at the appropriate Mach number for that system," he said. "To meet design constraints, modern fighter aircraft have complex inlets with multiple turns that generally lead to both total pressure and swirl distortion at the engine face."

Klepper mentioned flow distortions can lead to reduced system performance, operability and durability introducing issues in the overall success of the weapon system performing the mission.

"The integration of the airframe, inlet and propulsion system is a key design issue in the development of military aircraft," he said. "High Performance Computing Modernization Program's CREATE™-AV Kestrel tools have been demonstrated to accurately model inlet dynamic distortions in a sub-scale airframe and inlet system for a current mili-



AEDC analyst Jason Klepper speaks to several colleagues about dynamic inlet simulation demonstration for airframe-propulsion integration during the Technical Excellence Seminar at AEDC Oct. 20. (U.S. Air Force photo/Holly Peterson)

tary aircraft."

CREATE™, short for Computational Research and Engineering for Acquisition Tools and Environments, is a software that provides production-quality design and analysis.

Milt Davis, AEDC technology transition manager, described Klepper's efforts as "ground-breaking computational work."

"The solutions he is producing require an enormous amount of computational power because he is analyzing highly dynamic events associated with flow eddy structures that we have not been able to do before," he said. "The codes of today are being developed to provide

dynamic analysis capability and the analyst have to understand what they are producing. Both of these aspects are driving the ability to analyze inlet flow distortion that has been unattainable before."

Following Klepper's informative discussion, AEDC analyst Stephen Guimond presented on the CFD analysis of the AEDC Propulsion Wind Tunnel 16-foot transonic wind tunnel C1 compressor, providing information on how CREATE™-AV Kestrel tools have been used to support the rotor re-blading effort by generating time accurate, full annulus simulations covering various

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HIGH MACH



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An Air Force Test Center
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The *High Mach* office is located at 100 Kindel Drive, Suite A236, Arnold AFB, Tenn. 37389-1236. Editorial content is edited and prepared by NAS. Deadline for copy is Wednesday at close of business one week before publication.

This commercial enterprise newspaper is an allowable NAS contractor publication for personnel at AEDC.

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Core Values

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



Vision

"NAS will be integral to the success of AEDC, the U. S. Air Force's premier aerospace testing facilities, while applying the highest standards of ethics, innovation, safety, security, and quality to daily operations."

Values

- Ethics. We are uncompromising in our integrity, honesty, and fairness.
- Safety & Health. We are relentless in keeping people safe from harm, and we provide a safe and healthy work environment.
- Excellence. We thrive on challenge, accomplishment, and mission success.
- Quality. We are passionate about doing our work right the first time.
- People. We have a mission-focused, inclusive workforce who have a diverse skill set, are committed to success, demonstrate innovation and have a can do attitude.
- Culture. Our team is proud of our diversity, inclusiveness, and collaborative work environment. We are proud of what we do and how we do it.
- Relationships. We build positive, long-term business relationships through trust, respect, and collaboration.
- Innovation. We overcome challenges through creativity, perseverance, technology, and flexibility. We actively seek to continually improve.
- Sustainability. We plan and act for the long term benefit of our communities and our environment.

Transparent leadership: An old concept for modern times

By Col. Sean Larkin
National Air and Space Intelligence Center

WRIGHT-PATERSON AIR FORCE BASE, Ohio (AFNS) – We're living in an age of hyper-connectivity. With sensors everywhere and supercomputers in our pockets, there's a wealth of information available to everyone, whether it's a review of a restaurant, an updated Air Force instruction or the airspeed velocity of an unladen swallow (African or European). There are unofficial forums and social media groups devoted to nearly everything – including the Air Force. Further, your words and actions can live on indefinitely on the internet. Nothing stays in Vegas. Now, more than ever, to quote Gen. George S. Patton, "You are always on parade."

The combination

of instant information, rapid social interaction and recorded behavior has changed the environment and expectations for leaders. Our Airmen expect and deserve leaders whose actions match their words and whose decision-making is open, fair and consistent.

While discretion and the safeguarding of sensitive, classified and personal data remain critical responsibilities of military professionals, the fact remains that any gap between what you say and what you do will be exposed, one way or another. But there is no reason to fear such scrutiny; in fact, we must embrace transparency to lead in the 21st century.

Transparency is not a novel concept. Political scientists, journalists and policy advocates have been touting its importance for more than a century. In 1913, Louis

Brandeis, who would go on to serve as a justice U.S. Supreme Court, famously referred to sunlight (transparency) as "the best disinfectant." An organization that maintains open records, encourages honest dialogue, and is accountable for its actions is less likely to violate the public trust.

The benefits of transparency go beyond our external relationships, to the heart of our organizations. Open, honest and consistent leaders will develop trust, strengthen relationships and bolster our core values.

For example, as a commander, I have to make tough decisions on personnel matters, strategic priorities, resources and mission execution. I trust my team to provide the best available information and their recommendations to inform those decisions. While I

could technically make decisions without seeking such advice, involving the right subordinates and stakeholders in a transparent decision-making process is essential to leading effectively and building organizational trust.

Transparency helps establish this trust over time and strengthens critical relationships when your Airmen and your mission partners can see how your actions match your stated priorities and vision. Openness also allows your Airmen to understand how and why decisions are made, even if they disagree with a particular outcome. This transparency encourages collaborative decision-making, empowers our Airmen and fosters the professional development of all stakeholders, which ultimately strengthens the organization.

Finally, transparency

can reinforce and uphold the Air Force core values. I believe in these values and wholeheartedly believe we need to serve with integrity, service and excellence, every day. When your leadership style is transparent and collaborative, it is easier to model and enforce the ethical behavior we expect from everyone in the Department of Defense. Additionally, an open environment with high standards of personal conduct reinforces positive norms and discourages behavior that violates our values.

What we say is important, but our actions are what really speak to our Airmen. Leading with transparency creates strong, accountable organizations built on trust and guided by the Air Force core values. So, let some sunlight into your leadership style – it is a great day for a parade.

#BeThere before the call

By Master Sgt. Wendy Barraza
Headquarters Individual Reservist Readiness and Integration Organization

When the phone rings in the middle of the night, it's like an alarm going off in your brain. No one calls at one in the morning to say they were "just thinking of you."

I received one of those calls 13 years ago and woke to my mom telling me my dad had died from a self-inflicted gunshot wound. The words didn't sink in right away; I had to ask her to repeat herself. I can't imagine the difficulty she endured to do this.

My dad was a Navy veteran and a high performer. He was incredibly successful as a nuclear power engineer. Unfortunately, he was not able to tackle life's challenges without substance abuse or an addiction. These varied over the years, from gambling to drinking, to smoking, to overeating; he would replace one with another in a constant struggle to adapt to life. I don't know for sure, but I suspect he filled the void with those substances because he didn't have anyone to help him. As the breadwinner for the family, I think he felt he had to appear strong and deal with things on his own. This left him alone with no one he could just open up to about how he was feeling.

At the time of his death, it was very difficult for me to process my dad's suicide without resentment. I felt he had damaged my mom. I felt he had committed a horribly self-

ish act. I felt angry that my mom and brother missed him so much when I didn't find him to be a particularly good person. It never occurred to me how alone he felt in that moment, alone enough to see suicide as the only solution to end his pain.

A few years after this, I became a first sergeant and received extensive training on how to help those struggling with suicide. I also began counseling with suicide survivors and victims. These encounters educated me and gave me a new perspective on how people think when they are considering suicide and how to respond to them. When someone's arm is cut off, we don't just tell them to change their frame of mind and they'll feel better. When someone is diabetic, we don't tell them it's unhealthy to take medication every day to survive. When someone has the flu, we don't ask them, "Have you ever tried not having the flu?"

What I came to understand is that we should never minimize someone's struggle and that we need to be there for our wingmen when they are going through rough patches. Isolation and hopelessness are dark times, and the permanent effects of decisions made in those times can create a ripple effect of sadness through families and organizations. If I were to hold a glass of water in my hand and stretch it out parallel to the floor, I could hold that glass for a while, but at some point, my arm would get tired and I would want to lower the glass. Life is like this. Everyone has a different point of exhaustion, and we

must be aware of our own breaking point and our wingman's. While we all cope differently with this exhaustion, building our social, mental, physical and spiritual resiliency is at the core of our strength.

The theme of this year's Suicide Prevention Month was #BeThere and it stresses the social pillar of resiliency. This campaign resonates strongly with me because if my dad had just one person to give him hope, he might still be here today. It's no one's fault he is gone, but I believe that if he felt the care from people who did care for him, he would have given life another chance.

Reconnect with a friend and spend time together. I know we all have limited resources that make it difficult to set aside quality time for one another, but those moments build the trust, loyalty and commitment needed to open up to each other when things aren't going well. Think about who you feel comfortable reaching out to, and ask yourself who feels comfortable reaching out to you. Let's mean it when we say "I will never leave an Airman behind." Let's win the battle to save lives so no one else has to answer that call in the middle of the night. Everyday connections with our wingmen matter.

Smoking Policy

- The following revised Arnold AFB smoking policy is effective immediately and applies to all individuals on Arnold AFB.
- Traditional Tobacco products (e.g. cigars and cigarettes):**
 - Smoking is permitted solely in Designated Tobacco Areas (DTAs) identified by designated signage. If no signage exists, smoking is not permitted in that area. It is the responsibility of all smokers to keep DTAs clean of cigarette butts.
 - Tobacco use on the Arnold AFB Golf Course is permitted, but discouraged based on the health hazards of tobacco use and secondhand smoke. No smoking is permitted within 50 feet of golf course buildings except in the approved DTA.
 - Smoking in government-owned/leased vehicles is strictly prohibited. Personnel are allowed to smoke in their personal vehicles at any time; however, at no time will personnel discard cigarette butts outside their vehicle.
 - For government employees, the fact that a person smokes has no bearing on the number of breaks they may take. Breaks should be taken in accordance with the current supervisory and personnel policies that afford all employees the same break opportunities consistent with good work practices and accomplishment of the mission.
- Smokeless tobacco products (e.g. snuff and dip):** Smokeless tobacco products are not to be restricted to DTAs. Smokeless tobacco use will be permitted in all workplace areas (inside and out) subject to reasonable safety and sanitary conditions. Specifically, 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.
- Electronic Cigarettes (also known as "e-cigs"):** Pursuant to Air Force Instruction (AFI) 40-102, Tobacco Free Living, e-cigs are considered to be equivalent to tobacco products; however, e-cigs are not restricted to DTAs and are allowed to be used outdoors at a minimum distance of 25 feet from building entry/egress points. (This policy is dated July 27, 2016)

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 via the AEDC intranet home page and by calling 454-6000. Although the Action Line is always available, the best and fastest way to get things resolved is by using your chain of command or by contacting the organization directly involved. I encourage everyone to go that route first, then if the situation isn't made right, give us a chance.

Col. Rodney Todaro
AEDC Commander

Arnold Fire and Emergency Service provides tips for outdoor burning

By Arnold Fire and Emergency Services

Each year Tennessee wildfires ravage thousands of acres, often destroying homes and other property in their wake. Although lightning, equipment fires, careless smoking, camp fires, and even arson is the cause of some of these fires, escaped debris from open burning is the source for more than half.

During official fire season – Oct. 15 through May 15 – the State Division of Forestry requires a burning permit

before conducting any outdoor open burning of debris.

Grass fires can rapidly spread to wooded areas, jump to near-by bushes and trees, or spread to foundation plantings around the house then ignite the house or other structures.

Before starting an open fire, ask:

- Do I really need this fire?
- Can I extinguish what I start?
- What if the wind “kicks up”?
- Is there a chance it could spread to my home or a neighbor’s home?
- Do I need to move vehicles or equipment parked close by?

Contact Numbers to request an outdoor burning permit:

County	Number	County	Number
Bedford	877-350-2876	Lincoln	877-350-2876
Coffee	931-728-3709		931-937-8726
Franklin	931-598-5535	Marion	423 942-3665
Giles	877-350-2876	Moore	931-759-7714
	931-424-4010	Rutherford	877-350-2876
Grundy	931-692-3732	Warren	931-635-2754

AEDC Visitor’s Center announces holiday closings

By Michelle Frame
Arnold Protective Services

The Visitor’s Center at AEDC will be closed in observance of the upcoming holidays:

Thanksgiving, Nov. 24; Christmas,

Dec. 26; and New Year’s, Jan. 2, 2016.

The AEDC Visitor’s Center provides services such as processing visitors and issuing military ID’s, badges and Common Access Cards. For questions or further information, call 454-5453.

FSS contractor secures new collective bargaining agreements

By Akima Support Operations

Akima Support Operations, the prime contractor for AEDC Facility Support Services, and its subcontractors, URS Federal Services, Inc. and Protection Strategies Inc., have reached

an agreement with the Air Engineering Metal Trades Council (AEMTC) and International Guards Union of America (IGUA) on new collective bargaining agreements.

The new three-year contracts become effective Dec. 1.

REALIGN from page 1

“This Air Force approval of these organizational realignments is a major step toward achieving an objective set by the AFTC in 2015, said Maj. Gen. David A. Harris, commander, AFTC.

“These changes give us the right fit to help us deliver the best value to the warfighter, who we support every day,” Harris said.

“We are continually looking for opportunities to leverage our assets and develop synergies that will help us be the best, most efficient test force we can

be. These changes allow us a better balance of management, resources and advocacy across the test enterprise and will make us a more agile tester of choice today and tomorrow,” Harris said.

The center is also waiting for Air Force approval to designate AEDC as a wing-equivalent-organization. That designation would allow the center to select the next AEDC commander from the Command Screening Board. The center anticipates a decision on that request could come later this year.



An F-35 endures freezing temperatures in the 96th Test Wing’s McKinley Climatic Laboratory at Eglin Air Force Base, Fla., Jan. 27, 2015. The joint strike fighter has undergone four months of climate testing in the lab to certify the fleet to deploy to any corner of the world. (U.S. Air Force photo/Samuel King Jr.)

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points on the compressor map.

“Due to the complex geometries and length scales found in turbomachines, it is difficult to measure detailed internal flow field information without influencing the fluid mechanics,” he said. “A CFD simulation supplements measured data to provide detailed flow field characteristics within the turbomachine to support design requirements generation.”

Time-averaged and transient

rotor static pressure distributions have since been extracted from the simulations and are being supplied to a structural analyst for further investigation.

Greg Power, AEDC engineer specializing in modeling and simulation, commended both Klepper and Guimond on the work that they do and explained how advantageous it is to the test customer.

“Klepper’s work on the F-35 inlet dynamics demonstrates the

significant benefit of performing CFD simulations to plan ground and flight tests and analyze test data to provide the maximum knowledge at the lowest cost from a test campaign,” Power said. “Stephen’s work on the 16T compressor blades demonstrates the ability to determine design requirements well before any hardware is built to ensure that the final product performs as expected while minimizing risk.”



AEDC analyst Stephen Guimond presented information on the AEDC Propulsion Wind Tunnel 16-foot transonic wind tunnel C1 Compressor re-blading process using CREATE™-AV Kestrel tools at the Technical Excellence Seminar at AEDC Oct. 20. (U.S. Air Force photo/Holly Peterson)

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“Our Test Operation and Sustainment (TOS) contractor, National Aerospace Solutions (NAS), also has a requirement to implement LSS, and many of our other contractors also have their own CPI programs. There will be many opportunities where the government CPI program and contractor programs will work together to solve problems and improve efficiencies at AEDC and the geographical separated units. It is important to remember that the programs are separate, but we are easily able to partner capabilities across contracts and government resources, depending on the problem.”

TOS management will leverage parent companies Bechtel, Sierra Lobo Inc. and GP Strategies Corp. in establishing the LSS program on the contract at AEDC, according to Matt Szendre, the NAS Lean Six Sigma manager and a certified Six Sigma Black Belt.

“The parent companies of NAS have demonstrated a strong commitment to LSS over the

past few decades,” he said. “They have seen their businesses transform and become more efficient through the use of the LSS program. We want to ensure we utilize those successes here at AEDC.”

CPI and LSS beneficial to AEDC

Briggs and Szendre agree that the Complex will benefit in efficiencies that will be passed on to AEDC customers.

According to the LSS program model, efficiencies may be gained by using an 8-step Practical Problem Solving Model from the “Lean” side and the DMAIC process from the “Six Sigma” side which is to define, measure, analyze, improve and control.

“Any organization that adopts LSS or other rigorous CPI program will be able to identify and eliminate waste in their processes,” Briggs said. “It will help us be more effective in using the resources we’ve been given in order to conduct tests for our customers.”

For NAS, Szendre

said, “reducing waste leads to more productive time, which leads to a more efficient workforce, leading to better ROI [return on investment] for our customers, thus leading to AEDC’s ability to increase air on time and achieving the 2024 vision.”

CPI and LSS implementation

The Complex government lead for implementing the CPI program is Troy Bisby. He, along with government senior leaders and mentors, will execute the program to help foster a culture of innovation and challenge inefficiencies.

On the TOS contract, Szendre said all NAS team members will contribute to the LSS program.

“An operating committee consisting of senior NAS managers will govern the LSS program providing goals and identifying priorities,” he said. “All NAS personnel have the option to be a part of process improvement events. Since July we have been actively en-

gaged in a number of process improvement efforts critical to mission execution. During this time we have seen a high demand for LSS services; anywhere from evaluation of energy efficiencies, the TMDE [test measurement and diagnostic equipment] process review, improving the recruiting and onboarding process, to development of streamlined processes, tools and training to flex personnel between CTFs.”

Training for CPI and LSS

The training for CPI begins with awareness training and progresses to stages referred to as “Green Belt,” “Black Belt” and “Master Black Belt.”

Government personnel will be able to learn about CPI tools in the first stage of training as it becomes available.

“Right now, there is no AF approved training available for any level of CPI at AEDC,” Briggs said. “As the program advances, we will identify folks for training and send them TDY

[temporary duty]. Part of their responsibilities will be to bring the training to AEDC and start CPI awareness classes.”

Training for LSS begins with “Lean Management” for business owners and executives who design the future of the company. The next levels, “Yellow Belt” and “Green Belt,” extend to key employees then progresses to leadership under training categorized as “Black Belt” and “Master Black Belt.”

TOS contractor individuals, operating under the LSS program, can also anticipate having access to training.

“In the future we can expect there to be some level of LSS training for employees,” Szendre said. “Whether that be some level of computer or classroom based training providing the basics of process definition and measurement, we will train people to be able to identify value added and non-value added steps within processes and how to build efficiencies around the process while taking into consideration

upstream and downstream requirements.”

Briggs, who is working to complete his CPI Black Belt certification, expressed that team members at AEDC have a background geared for CPI and LSS.

“Many of the concepts of LSS and CPI are already incredibly well engrained in the AEDC workforce,” he said. “Engineers and technical communities generally do very well with these methods. Some of the basic tools include root cause analysis and problem breakdown. AEDC does these better at all levels than any other organization I’ve seen.”

“Good CPI organizations also experience a culture shift with more engagement and empowerment at lower levels, resulting in increased job satisfaction from the workforce. From the worker’s perspective, change stops being forced from top-down, but instead becomes bottom-up. It is very rewarding and powerful to be part of an organization that truly understands CPI.”

Team AEDC Spotlight



Engineers' effort to reduce cost of preventative maintenance program for Model Shop

By Deidre Ortiz
AEDC Public Affairs

In a combined effort, two AEDC engineers helped reduce the cost of the preventative maintenance program for welding machines used by the AEDC Model and Machine Shop.

According to David Hurst, Asset Health Assurance Group Manager for the AEDC Model and Machine Shop, the efforts of Ashley Clark and Tracy McDonald will lead to a savings over the life of the contract of at least \$200,000.

"They developed a pre-operations checklist for each welding machine which moved a lot of the preventive maintenance program from a calendar driven program to a condition-based maintenance approach," he said.

Clark stated the approximate savings for Fiscal Year 2017 alone is \$20,000.

"We will be reducing the preventative maintenance activities and implementing the pre-operation reminders sheets attached to each welder," she said.

Currently, there are more than 240 welding machines on base, but that number will soon be reduced.

"Once identified during the preventative maintenance cycle, welding equipment will be replaced based on age, usage, capacity or duty cycle, and corrective maintenance cost," Clark said. "The plan for FY17 is to identify and eliminate the top 30 percent of welding machines that meet this criteria. This will provide additional cost savings by eliminating the PM program and purchasing newer equipment with higher technologies such as ability to provide energy savings and runtime data, greater capacities at as high as 100 percent duty cycle, and lower maintenance requirements."



AEDC engineers Ashley Clark, right, and Tracy McDonald, check the performance of a welding machine at the Model and Machine Shop as part of the preventative maintenance program for the machines. Clark and McDonald worked to reduce the cost of the preventative maintenance program by developing a pre-operations checklist for each welding machine which moved a lot of the preventive maintenance program from a calendar driven program to a condition-based maintenance approach. This change is anticipated to yield a major cost savings for AEDC. (U.S. Air Force program/Rick Goodfriend)

Hurst commented on the many benefits of replacing older welding machines.

"New machines have much more flexibility," Hurst said. "Our welders will be able to do multiple types of welding with a single machine. By doing this, you replace two or three current machines with one, which will reduce

operating and maintenance costs even further.

"Tracy and Ashley did an outstanding job, tracking down each welder and developing an overall maintenance strategy and replacement plan. This effort changed paths several times along the way but they stuck with it and in the end

made it successful."

In addition to these savings, a process has been developed that will produce better quality maintenance data for the welding preventative maintenance program and the total savings to the Complex is anticipated to grow after further cost accounting.

Tyndall AFB team develops solution to F-22 weapon's system issue



Senior Airman Samuel Privett, a 43rd Aircraft Maintenance Unit weapons load crew member, stands at parade rest in front of an F-22 Raptor at Tyndall Air Force Base, Fla., Nov. 4. Privett recently led a team of 43rd AMU Airmen to troubleshoot a re-occurring maintenance issue with an F-22. Privett ensured accurate communication between multiple work shifts to isolate the issue, and played a key role in developing a cost effective solution. (U.S. Air Force photo/Tech. Sgt. Javier Cruz)

By Tech Sgt. Javier Cruz
325th Fighter Wing Public Affairs

TYNDALL AIR FORCE BASE, Fla. (AFNS) – A re-occurring weapon's system issue with an F-22 required a small team of Airmen to collectively work together recently to develop an innovative solution.

The team's problem solving is a testament to the amount of responsibility and confidence the Air Force puts in its Airmen regardless of age or experience.

"During roll call, our expeditor (an experienced crew chief responsible for coordinating required maintenance taskings) gave out the tasks for the day. My task was to figure out why we were having this re-occurring problem with one of the jets," said Senior Airman Samuel Privett, a 43rd Aircraft Maintenance Unit weapons load crew member.

Privett spent a lot of time working with his team and interpreting the engineering diagrams to trace the problem the jet had.

"It took us about two days and several people overall to finally nail it down," said Privett, a 23-year-old native of Dallas.

NAS makes a significant impact in local community with new United Way payroll program at AEDC

By Alicia Bell

United Way of Coffee and Moore Counties

TULLAHOMA, Tenn. – National Aerospace Solutions (NAS) launched a new United Way payroll deductions program at AEDC with a \$9,000 match contribution.

NAS General Manager, Cynthia Rivera, announced the program at a series of All Hands meetings for employees from Nov. 9 – 11. The match contribution is shared among three NAS locations in California, Maryland, and Tennessee.

NAS developed a “Community Commitment Plan” when arriving at AEDC,

and has made quick and dedicated strides to support our local community. One initiative of this plan is to support The United Way, “as an officially endorsed NAS-sponsored charity.”

The United Way program allows NAS employees to sign up to give a one-time, or continuing donation from a portion of their paycheck directly back to our community. United Way will make efficient, effective investments in our service sector, or NAS employees can designate their donation to a specific cause.

NAS employees can choose to give in four ways:

1. Where it is Most Needed: which will go through United Way’s refined allo-

cation program that assesses immediate and emerging community needs.

2. A Focus Area: education, income, health, or essentials.
3. A United Way Partner non-profit or
4. Write-In a nonprofit that serves citizens of Coffee and Moore counties.

All NAS employees must sign up by Dec. 2 to contribute for the 2017 year. Employees can sign up to contribute on their NAS team website at <https://team.nas.llc.us/>. Click on the link and find the United Way NAS tab at the top, then follow the prompts. For an instruction sheet, please go to the NAS administrative office and see the administrative assistant at the general manager’s office, or go to <http://unitedwaycmc.org/>

<wp-content/uploads/2016/08/Sign-Up-Information.pdf>.

This is the first time for our local United Way office to run a campaign at AEDC. NAS employees have the chance to leave a legacy for our local nonprofit community. If everyone at NAS gives a few dollars a paycheck, our nonprofits will be changed forever. Donations stay local and are directed to our community’s most pressing needs.

Find out more about United Way’s giving program and allocation process at unitedwaycmc.org/index.php/give.

If you are interested in joining United Way’s 2016 Community Campaign, please contact Alicia Bell at (931) 455-5678 or by emailing cmcunitedway@gmail.com.

Boom operators help develop new KC-46 system

By Kenji Thuloweit

412th Test Wing Public Affairs

EDWARDS AIR FORCE BASE, Calif.

(AFNS) – Earlier this year in Everett, Washington, workers from Detachment 1, 418th Flight Test Squadron, and Boeing teamed up to achieve major test milestones for the KC-46A Pegasus, which resulted in the Defense Department authorizing initial production in August.

Going forward in the test program, the KC-46 will complete a robust schedule of Federal Aviation Administration and military certification flight testing, including refueling test flights, in order to achieve certification for aircraft in the Air Force and DOD inventory.

As with all aerial tankers, the aircraft requires an Airman to operate the refueling boom that transfers gas to receiver aircraft.

To date, boom operators from Edwards Air Force Base are the only Airmen to have operated

the boom on the KC-46A and are paving the way for future testing and training with the new system.

“The initial cadre of boom operators was selected from the test boom cadre here at Edwards,” said Senior Master Sgt. Scott Scurlock, a 370th Flight Test Squadron boom operator. “You had to be a test boom operator to be considered for the initial KC-46 developmental test cadre; this is a test program, and the KC-46 test organization in Seattle, Washington, is a detachment of the 418th Flight Test Squadron.”

Scurlock said Edwards AFB has three qualified KC-46A boom operators at the 370th FLTS and five active-duty operators assigned to the Det. 1, 418th FLTS, in Washington.

He and Master Sgt. Aaron Ray, of the 370th FLTS, are the first two Airmen in the Air Force Reserve to be qualified on the KC-46A. They have recently been joined by Tech. Sgt. Colin Wernecke, who transferred to the Reserve

after spending three years with the 418th FLTS.

The 370th FLTS is an Air Force Reserve unit with the mission of providing aerial refueling test support to the Edwards 412th Test Wing.

The three KC-46A test boom operators went through formal initial cadre training consisting of classroom academics taught by Boeing, simulator time and flight training. All are seasoned veterans of the legacy KC-135 Stratotanker and KC-10 Extender.

“When you compare the KC-135, a tanker that was developed in the 50s and uses a lot of 1940s’ technology when it comes to the boom system, and you think about the new systems that we’re dealing with today in the KC-46, it’s a huge difference,” Scurlock said.

One of those huge differences is the new location of the boom operator’s workplace.

“We have transitioned from laying down on your stomach or sitting at the back of the airplane, look-

ing out a window at receiver aircraft, to sitting up front in the airplane at an air refueling operators’ station (AROS) looking through a 3-D stereoscopic vision system,” Wernecke said.

The new vision system is designed to replicate depth perception under all lighting conditions, he said.

“Aspects, such as lighting, have been designed into the AROS to make operating the boom easier,” Wernecke added. “Lighting shouldn’t play as big a part with the new remote vision system. They’re able to utilize cameras in such a way that conventional external lighting from the tanker looking down on the receiver doesn’t play as big a part. While operating legacy systems, you have to adjust your lights to allow the boom operator to gain depth perception in dark environments.”



From left, Master Sgt. Aaron Ray, Senior Master Sgt. Scott Scurlock and Tech. Sgt. Colin Wernecke, of the 370th Flight Test Squadron, stand in front of a KC-135 Stratotanker test aircraft. (U.S. Air Force photo/Kenji Thuloweit)

Operators still fly the boom with their right hand and extend the boom with

their left as with legacy tankers, but the KC-46 fly-by-wire boom system is more advanced.

“The control and operation of the boom is similar, but the boom handling

qualities are improved drastically,” Scurlock said.

Scurlock and Wernecke said the KC-46 boom operators from the 418th and 370th FLTS are providing feedback to Boeing to help with training and further development of the new tanker boom system.

TYNDALL from page 4

This in-flight weapons system maintenance issue affected the radar cross section of the F-22 and persisted over a period of a few months. This reduced the effectiveness of the F-22’s low observability, which meant enemy aircraft and radars – operational or simulated – would have a better chance of identifying the aircraft.

“We have a fabrication machine in the shop that allowed us to create what we needed. We were able to fix the problem ourselves without having to send the jet off to the depot for maintenance,” Privett said.

Replacing the entire affected system would have cost approximately \$40,000 to \$50,000, but an in-house team solution cost the Air Force only \$250. The team also saved more than 200 hours in labor and lost flight time.

“Senior Airman Privett plays a key role in fostering teamwork and ensuring accurate communication from shift to shift,” said Master Sgt. David A. Riddle, the 43rd AMU weapons flight chief. “In conjunction with other members of the mighty 43rd Hornet Weapons Flight, we were able to isolate the malfunction that had been eluding us for quite some time.”

The repair reduced the downtime of the aircraft, allowing a quick return to

the sky with student pilots. The hard work of the 43rd AMU enabled Tyndall AFB to meet its main mission objective, to train and project unrivaled combat airpower.

“The teamwork displayed throughout the process was excellent, and Senior Airman Privett was one of the key leaders of that 10-plus member team,” Riddle said.

The Air Force relies on the diversity of its force to find innovative solutions to mission-essential problems. This is not limited to race, gender and religion, but also in the age and maturity of an individual.

“Diversity within teams helps us to view problems from a multitude of perspectives, experi-

ence levels and individual technical knowledge capabilities,” said Col. Jacqueline M. Mongeon, the 325th Maintenance Group commander. “We have the unique ability to leverage the knowledge of both more experienced maintainers with the fresh perspective and innovation the younger generation brings to the fight. New ideas tempered by a steady hand sets us apart as an organization and contributes to the overall mission.”

(Editor’s note: Due to the sensitivity of the specific maintenance issue affecting the F-22 Raptor, the exact details of the problem and solution could not be released to the public and are described in simplified terms.)



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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3 Café 100 National Sandwich Day Combo \$6 Movie: Ben-Hur PG-13	4 ALC Jam Night 6pm	5
		8 Café 100 National Cappuccino Day Venti \$3 Grande \$2.75		10	11 Veteran's Day Arnold Lakeside Center - Closed Barber Shop - Closed Café 100 - Closed Fitness Center - Open 8-4	12
6 Set your clocks back 1 hour!	7	Autumn Dinner by the Lake M \$23 NM \$25 Age 12 & under \$10.50 5:30 PM Outdoor Thanksgiving dinner overlooking the lake behind the ALC with live guitarist and fire pits. Top Round and Roasted Turkey carving station, baked potato and salad bar, desert, and drink. Sign up by Nov. 11 Call 931-454-4003		16 FC Triple Threat Challenge First 20 participants get a T-Shirt. Lift 1000 lbs. and get a hoodie. BENCH PRESS BACK SQUAT DEADLIFT	17 JEWELRY FAIR Café 100 7am-1pm	19
13	14		23 Barber Shop Open 8-12	24 Holiday Closures: Arnold Lakeside Center Barber Shop Café 100 Fitness Center Golf Course Outdoor Rec	25 Holiday Hours: Arnold Lakeside Center - Closed (No trivia) Barber Shop - Closed Café 100 - Closed Fitness Center - Open 8-4	26
20	21	22	29 Fitness Center Kettlebell Class Tuesdays and Thursdays 11-11:45am	30	Membership has its privileges! Weekly Prizes: 3 Apple MacBooks 4 Ticketmaster eGift Cards 2 Curved 4K Ultra HD Smart LED TV's Grand Prize: Jeep Wrangler	
					Every Friday at Arnold Lakeside Center... Members enjoy free social hour food 3:30-5:30pm (non members \$5) AND... Members could win Services gift card 6:00pm – starts at \$25 goes up \$5 weekly if no winner (max \$500) Grab an entry in all Services facilities by showing your current club card! Must be present to win! One entry per Club Card per facility per day.	

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Innovative cyber program protects critical Tyndall AFB assets

By Senior Airman Solomon Cook
 325th Fighter Wing Public Affairs

TYNDALL AIR FORCE BASE, Fla.

(AFNS) – The 325th Communications Squadron became the first Air Combat Command squadron to join a new initiative to ensure Tyndall Air Force Base is able to train and project unrivaled combat airpower. The Cyber Squadron Innovation is a pathfinder program among Air Force communication squadrons, enabling com-

munications squadrons to provide secure communication assets and services with a focus on security assurance.

“The big thing is understanding the mission, and we do that by a process called functional mission analysis,” said 1st Lt. Terel Hayes, the 325th CS special missions flight commander. “We look at the 325th Fighter Wing as a whole, and see how it actually projects that airpower. We break that down into smaller mission threads, and we then do analysis on those threads to see where cyber has an impact on them, positively or negatively.”

The ever-growing need for cyber surety from enemies, home and abroad, prompted the initiative. The pathfinder program brings Airmen of different Air Force specialties together to build the future structure of communications squadrons.

“Senior leaders were concerned with cyber surety, and they wanted us to move our cyber talent to assuring the mission,” Hayes said. “We also looked at how an air tasking order comes in and how leadership works together to disseminate the work that is required to fulfill the air tasking order.”

Prior to establishing the program in February 2016, leaders within the 325th CS met to make sure they had the right personnel for the job by adding diverse Airmen to the program, all the while ensuring manning in other areas would not be adversely affected.

Although all the Airmen were carefully selected, originating from different specialized jobs, program managers needed to lay the founda-

tion for future standardized training programs to close the knowledge gaps.

“Since February, we have provided our Airmen various different types of training. This started with learning the basics of the network and building upon that,” said Senior Master Sgt. Lisa Spicer, 325th CS plans flight chief. “There were different levels of experience. Some already had that understanding, but others did not. It was the chance to get everyone on the same page. The baseline training took three months, giving everyone the same understanding.”

As the digital pathfinders continue to learn their new roles within the program, communications program managers continue to look forward. The role of these Airmen will become more unique depending on the mission as the initiative further spreads to other bases.

“The main intent is to deliver mission assurance for those capabilities that are pertinent to the base,” said Tech. Sgt. Antwane McDowell, the 325th CS cyber mission defensive team NCO in charge. “If you look at Tyndall (AFB), our primary objective is to provide air dominance and training with F-22 Raptors. We are giving mission assurance for those information systems that directly interact with the aircraft. We provide the internal defense of the systems.”

Air Force senior leaders are considering creating a new Air Force specialty code in communications squadrons or attaching a special experience identifier to Airmen in the program. The identifier would allow Airmen to integrate into a new team easily, McDowell added.

As the program advances, 16 communications squadrons Air Force-wide will come together and finalize an official training program. The 325th CS recently completed a local training program that is currently in the review process.

“We have created a pseudo-master training plan, providing the ability to get someone with no computer knowledge spun up on what they would need to become familiar with the program,” Spicer said. “The training plan is not official, but it is a template for those here. We will share a career field functional manager, which is something that is being asked of all the bases that have a pathfinder program. The end goal is to see how Tyndall and other bases do it and come up with an official master training plan.”

With the need for maintaining cybersecurity, the professionals of the 325th CS will continue to monitor network traffic, searching for vulnerabilities that may interfere with operations.

McDowell spoke highly of on-base partners who have and will continue to assist with the program.

“We wouldn’t be where we are without our mission partners giving us the insight of the systems they work with day to day,” McDowell said. “From the training support squadrons to the maintenance squadrons, providing knowledge of maintenance operations, flight simulators and mission planning systems, they have been a great help. In the 325th CS, we see a problem and we fix it, but they are the ones who know what is important to them and how important it is to stay mission ready.”

Hawkeye: Eyes, ears of the RQ-4



Capt. Thomas, a 12th Reconnaissance Squadron RQ-4 Global Hawk pilot, conducts a walk around of a RQ-4 prior to takeoff Nov. 1 at Beale Air Force Base, Calif. Thomas fulfilled the role of “Hawkeye,” which is the call sign for the designated RQ-4 pilot who performs preflight inspections before departure. (U.S. Air Force photo/Staff Sgt. Bobby Cummings)

By Staff Sgt. Bobby Cummings
9th Reconnaissance Wing Public Affairs

BEALE AIR FORCE BASE, Calif. (AFNS) –

An aircraft accelerating down the runway with 8,500 pounds of thrust and a wingspan greater than a Boeing 737 is inherently dangerous. The danger is amplified when the pilot isn't even located on board the aircraft.

Trailing behind pursuing the aircraft is “Hawkeye” ensuring the remotely piloted aircraft ascends from the surly bonds of Earth.

The RQ-4 Global Hawk, serves as the Air Force's high-altitude intelligence, surveillance and reconnaissance, long endurance RPA. Global Hawks are loaded with an integrated sensor suite and cameras capable of providing global all-weather, day or night ISR, however while on the ground visibility for pilots operating the aircraft from within the Mission Control Element is limited. That is where Hawkeye fulfills its role.

“Hawkeye is any RQ-4 pilot who performs preflight inspections no differently than a typical pilot would conduct a preflight inspection,” said 1st Lt. Jeffrey, a 12th Reconnaissance Squadron RQ-4 pilot. “The pilots in control at the MCE have limited visibility; Hawkeye is the eyes and ears of RQ-4 Global Hawks on the ground. While maintaining a safe distance, Hawkeye pursues the aircraft at 40 mph down the runway until takeoff.”

Prior to engine start Hawkeyes reviews a checklist with maintenance personnel verifying the functionality of the aircraft.

“We guide them from a maintenance perspective during their walk arounds,” said Staff Sgt. Josh Reynolds, a 9th Aircraft Maintenance Squadron RQ-4 crew chief. “We provide a second set of eyes and answer any maintenance related questions the pilots may have.”

According to Jeffrey, he has personally witnessed multiple occasions where a Hawkeye prevented a potential incident.

“Hawkeye has prevented various incidents from bird strikes, runway incursions, located leaking hydraulic fluid and damaged aircraft,” he said. “While deployed serving as Hawkeye I once identified an engine fire on another jet.”

Aside from locating potential hazards and serving as the eyes and ears of the aircraft, Hawkeyes are also responsible for communicating critical information to the pilots coordinating with the air traffic controller before takeoffs and landings.

“When the air traffic controller gives clearance to land, Hawkeye is on the taxiway visually locating the jet, ensures the airfield has no debris or obstructions, and serves as a secondary source to the tower notifying the pilot the aircraft is cleared to land,” Jeffrey said.

See HAWKEYE, page 11

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NAS team members recognized for outstanding performance



Receiving recognition at the NAS All-Hands meetings Nov. 9-10 was a team of NAS employees who delivered a refabricated nose cone for the H2 diffuser in the Arc Heaters Facility. The award recipients pictured left to right are Norman Smith, Danny Owens, Ken Vassar, Joel Gregory, Paul Denton, Teddy Perry, Michael Dickey, Jeff Tate, Mark Duke and Terry Hand. Scott Murphy, not pictured. (NAS Photo by Rick Goodfriend)



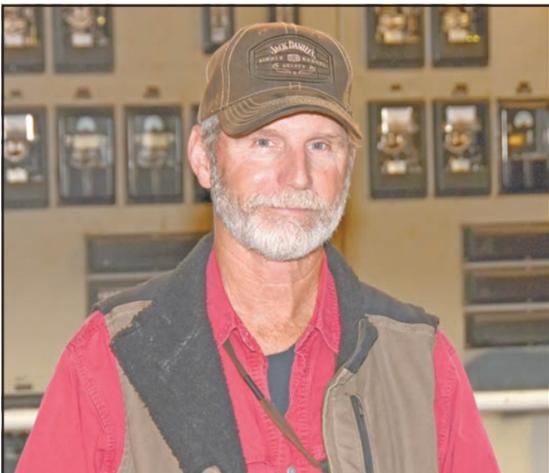
At the All-Hands meetings, NAS leadership recognized a group that oversaw the development and deployment of a new version of Engine Data Acquisition and Processing System (EDAPS) for Hypervelocity Wind Tunnel 9, which will provide additional data acquisition capability. Those making up the team recognized for this accomplishment are: Basil Hall, Mark Duke, Margaret Smith, James Murr, Hanh Tran, Paul Schwer, Karen Zarecor, Melissa Miller, Doug Hamilton, Ulrika Cooper, Greg Renner, Joel Barr, Larry Oaks, Keith Bowling and Rick Smith. Those pictured here, left to right, are Ulrika Cooper, James Murr, Doug Hamilton, Margaret Smith, Hanh Tran, Karen Zarecor, Mark Duke and Melissa Miller. (NAS Photo by Rick Goodfriend)



NAS leadership awarded several employees for their outstanding performance during the All-Hands meetings held Nov. 9-10 at UTSI. Ashley Clark was presented an award for developing a maintenance optimization approach for welding preventative maintenance, which resulted in a cost savings of \$20,000. (NAS Photo by Jacqueline Cowan)



During the recent NAS All-Hands meetings, five NAS employees were recognized for their assistance in ensuring the completion of DD2875 forms, which re-establish access to Air Force network systems. Those receiving the award, left to right, are Phyllis Lafferty, Judy Brewer, Courtney Gregory and Jeannie Bowden. Not pictured is Vickie Adams. (NAS Photo by Jacqueline Cowan)



NAS employee Jody Frame was awarded at the NAS All-Hands meetings held at the University of Tennessee Space Institute for adopting a new process for executing Electrical Utilities preventative maintenance resulting in a 96 percent completion rate. (NAS Photo by Rick Goodfriend)



Rylan Cox was recognized at the NAS All-Hands meetings held at the University of Tennessee Space Institute for recently receiving his doctorate in mechanical engineering from the University of Tennessee. (NAS Photo by Jacqueline Cowan)

AEDC Woman's Club prepares for scholarships and the holidays

By Barbara McGuire
AEDC Woman's Club

The November meeting of the AEDC Woman's Club offered the opportunity to Shop for Scholarship thanks to three AEDCWC secret shoppers Pam Wiedemer, Cecelia Schlagheck and Delma Kamuf.

Wiedemer was crowned as Queen of the Secret Shoppers.

Judy Prince of the Paint Rock Valley and Birmingham, Alabama was the meeting presenter. Prince is a psychotherapist that has worked for decades in clinical and community therapy. She spoke about building her life through community and her career.

Table donations of \$100 went to the Fisher House of Murfreesboro.

The next meeting of the AEDC Woman's Club will be Dec. 1 at the Arnold Lakeside Center where the ladies of the club will

be presenting the Christmas Boutique with many wonderful items up for silent auction. The award winning homeschool show choir the Lyric Ladies, from Tullahoma, will perform at the meeting.

This group made history last year by being the first-ever homeschool show choir to be accepted to compete in a national show choir competition. The Lyric Ladies won the overall People's Choice award at the 20th Annual Music City Show Shoppe Competition at Belmont University. They have been invited this spring to be guest performers at Dollywood in Gatlinburg, Tenn. They are directed by Amy Cooley, who is the Praise and Worship Director at Christ Community Church in Tullahoma, and former independent international gospel touring artist. The Lyric Ladies are excited to be performing for the AE-

DCWC singing Christmas Music as well as having a special guest appearance for their grand finale.

Donations for the December meeting will go to Toys for Tots. Meeting participants may bring an unwrapped gift to be placed in the bin or to leave a donation on the table. Chief Jeff Smith from the Tullahoma Fire Department will be at the Arnold Lakeside Center to pick up donations at 9 a.m.

The December meeting is open to the public and provides the opportunity to meet the AEDCWC members and become a member. You don't need to have military connections or be involved with Arnold Air Force Base to visit and become a member.

For information about the AEDCWC call 455-3569.

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 cancellations must be made no later than noon, Nov.

23. Make reservations or cancellations by calling 931-393-2552 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.



AEDC Woman's Club meeting participants view Secret Shopper Items at the Nov. 3 meeting. Pictured left to right are Anne-Marie Pender, Sande Hayes, Violet Nauseef, Shirley Clark, Wanda Gobbell and Susie Schulz. (Courtesy photo)



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NEW HOURS: 0900-1730

November 24, 2016
Thanksgiving - **CLOSED**

November 25, 2016
Day after Thanksgiving - **CLOSED**

November 26, 2016
Saturday after Thanksgiving - **OPEN**;
Regular Hours: 0800 - 1630

December 19, 2016
Monday before Christmas - **CLOSED**

December 24, 2016
Christmas Eve - **OPEN**;
NEW HOURS: 0800 - 1600

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HAWKEYE from page 8

Global Hawks possess the pilots and their aircraft Although pilots and mission elements such as "Hawkeye conducts the Hawkeye is there for the capability to fly nonstop are geographically separated, their aircraft are sometimes separated, technology and Hawkeyes, enable missions those firsthand checks," every single takeoff and for 28 hours. Occasionally, rated. Jeffrey said. "When we fly, landing."

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2016

December

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sat.
	5	6		1	2	3
	12	19		8		
	12		14			
	19	20	21			
	27	28	29	30	31	

SERVICES HOLIDAY HOURS

ALC/GLC	Dec. 18-Jan. 8	Closed
Cafe 100	Dec. 23 & 26 Dec. 27-30 Jan. 2 Jan. 3-6	Closed 7am-12:30pm Closed 7am-12:30pm
Golf Course & Mulligans Grill	Dec. 25	Closed
Outdoor Rec.	Dec. 22 & 25 Dec. 24 & 31 Jan. 1	Closed 10am-4pm Closed
Fitness Center	Dec. 26 Dec. 27-30 Jan. 2	Closed 8am-4pm 8am-4pm



