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Model Shop upgrades decrease production time and lower cost

By Janaé Daniels
High Mach Editor

AEDC's Model Shop recently finished a \$5.5 million new equipment upgrade that is projected to reduce production time and cost by up to 80 percent.

According to Dave Simmons, branch manager of the Model Shop, the Model Shop supports AEDC test, investment, plant and maintenance operations with precision machining, fabrication and product installation support services. There are approximately 150 machine and fabrication assets.

These machines are capable of producing machined products small enough that the average person would need a magnifier to perform certain operations or as large as 35 feet in diameter and weighing up to 40 tons. Products produced include test models, balances, stings, flexures, thrust stands probes, rakes and ducting.

"We have fabrication equipment that can bend and shape metals up to three-inch thickness and capabilities are only restricted by the size of our overhead doors and the capacity of the cranes, 40



Machinist David Taylor operates the new 80-foot vertical machining center to grind compressor blade assemblies for Plenum Evacuation System. (Photo by Bob Boswell)

tons," Simmons explained. "The Model Shop assets were aging, averaging 38 years old, and the downtime

was driving up not only the maintenance costs but adding cost to the customer's product due to continuous

downtime."

So a decision had to be made — do we keep the capabilities of the shop and

invest in new equipment or does AEDC get out of the business?

"The real concern to us

was the impact to schedule that would be experienced

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Charles Easley has an inventive mind

By Philip Lorenz III
Technical Writer

When Charles Easley graduated from high school, he already knew the military would be the gateway to the world beyond his home in Jackson, Tenn. He originally thought the Army was the way to go, but when the time came to enlist, the Air Force won out.

Easley said almost from the beginning he loved military life, especially the 12 years he spent stationed overseas while serving in the Air Force. His military career included a tour at Clark AB in the Philippines, Yokota AB, Japan and time spent in Turkey and on Shemya, an island along Alaska's Aleutian chain.

Easley, a fuels specialist with the military and now with Aerospace Testing Alliance since 2007, said being overseas was a transformative experience. From learning about different cultures, meeting people and trying new foods, he said traveling to other countries enriched his life immeasurably and provided a valuable education.

The Jackson, Tenn., native continued his travels when he joined the Air National Guard as a fuels distribution system worker in 1994. Temporary duty assignments took him to England, the United Arab Emirates, Bahrain, Iraq and Kuwait with the Tennessee Air National Guard 118th Air Wing.

Easley is among a team of approximately nine specialists at AEDC whose job it is to operate the nitrogen and bulk and test fuel farms in support of test and base support facilities. Easley and his coworkers wear many hats. They perform operator-level maintenance, place orders and receive fuel stores and cryogen products and also support airfield refueling and marshalling activities at AEDC.

Easley said a fuels specialist at a place like AEDC has their hands full making sure the right fuel and the correct combination of it is delivered to the test facilities and the infrastructure that supports the mission at Arnold.



Easley, a fuels specialist at AEDC, adjusts a valve controlling the flow of JP-8 from the fuel farm to one of the test facilities on base. (Photo by Philip Lorenz III)

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BF-1 over Naval Air Station Patuxent River, Md. (Photo by David Draiss)

F-35 flies to PAX: Similar variant engine tested at AEDC

A Marine F-35 Short Take-Off Vertical Landing (STOVL) aircraft, BF-1, using an F135 engine variant tested at AEDC, made its first successful test flight Nov. 15 from Dobbins Air Reserve Base in Marietta, Ga., to Naval Air Station Patuxent River, Md.

The BF-1 is powered by

Flight Test Engine 6 (FTE-06). Team AEDC has completed development testing and qualification testing on the same type of engine — FTE-05.

According to John Kelly, Navy project manager, FTE-05 is the same STOVL type of engine as FTE-06. "FTE-05 has completed testing

here at AEDC in both C-1 and SL-3 test cells," Kelly said. "The engine recently completed Augmentor Development Testing in SL-3 and will eventually head to PAX as a flight test engine spare in support of BF-1."

Article compiled by Janaé Daniels, High Mach Editor.



Santa is coming to AEDC

Santa Claus will make his annual appearance and greet hundreds of excited little ones at the annual Children's Christmas Party Sunday at the Arnold Lakeside Center from noon-4 p.m. The event is free and open to all AEDC employees (active duty military, civil service, contractors, National Guard, Reserves, retirees and their immediate families, children and grandchildren for ages 12 and under). Other activities include inflatable jump houses, a rock climbing wall, horse and carriage rides, Dolly Parton's Imagination Library, face painting, letter writing to Santa, crafts and more. (Photo by Rick Goodfriend)

AEDC donates to warm up community children in need

By Philip Lorenz III
Technical Writer

Each year, the AEDC's Top 3 Council, Air Force Sergeants Association and Aerospace Testing Alliance (ATA) strive to make a difference to local communities with fund drives and donations.

As part of this effort, the local chapter of the Top 3 Council donated coats to at risk or disadvantaged children in the surrounding communities.

"Naturally, we ensure the quality of these coats, but it would be too costly to insist on new ones," Master Sgt. Harold Jones, Arnold Top 3 Council's secretary and treasurer, explained. "I called around Coffee County to figure out how to best distribute the donated coats within our area. The

Coffee County Department of Children services seemed to be the best fit and have the most need."

Since organizations like this can't solicit donations or funds, he said it seemed particularly appropriate to help the children they serve.

"I delivered 100-plus jackets, and they were extremely pleased and thankful," he said. "I asked when was the best time to deliver the jackets, and they told me right way because they had kids who were in need and going without."

Jo Ann Bobo, with the Department of Children's Services for Bedford, Coffee, Lincoln, and Moore counties, said the coats donated by AEDC and those who supported the effort positively impacted a particularly vulnerable segment of the population.

"Since our agency and no one associated with it is allowed to solicit donations, whether you're talking about money, clothes or anything else, this contribution from AEDC was particularly significant," she said.

Sergeant Jones said that this effort wouldn't have been possible without the support of others, both on base and outside the gate.

"AFSA (Air Force Sergeants Association's chapter at AEDC) has donated \$200 dollars, Wal-Mart kicked in another \$50, and the CGOs (Company Grade Officers) collected coats during the Turkey Trot. ATA (as voted on by the Employment and Community Activities Committee) will be donating \$200 as well."

Sergeant Jones said Arnold's enlisted Top 3 Council donated \$300 for the



On Monday, Master Sgt. Harold Jones, AEDC Top 3 Council's secretary and treasurer, delivered more than 30 coats to Dr. Brenda Welch, the guidance counselor at Tullahoma High School, who heads up the Karing for Kids program in that community. Sergeant Jones also delivered more than 100 coats to the Coffee County Department of Children services to distribute to disadvantaged children served by that agency. Arnold's Top 3 Air Council, the local chapter of the Air Force Sergeants Association and ATA joined forces to contribute money and coats with a total value of \$2,000. (Photo provided)

initial effort and that the group will also be delivering another 25 to 30 new coats for teens through their "Karing for Teens program" in Tullahoma School District.

Assistant fire chief takes service to his country and community seriously

By Janaé Daniels
High Mach Editor

George DeShields III, the newest AEDC assistant fire chief, can remember as a little boy watching his dad fight fires as a volunteer firefighter in Kennett Square, Pa.

"I thought it was a cool job," he explained. "Now, I know it's the best in the world. You get to help people and do well for your community whether it's actually responding to an emergency or just supporting the community in whatever they need."

In 1986, DeShields enlisted into the United States Air Force to become a firefighter.

"I joined the Air Force because I wanted to serve my country and as soon as I finished my training in Texas I was off to South Dakota to



Retired Master Sgt. George DeShields, 96th Civil Engineer Squadron firefighter at Eglin AFB, Fla., suits up to enter a burning kitchen in a multiplex housing unit June 2007. Sergeant DeShields guided the crews inside the blaze as part of his duties as the training superintendent. (Photo by Staff Sgt. Mike Meares)

begin my career as a firefighter," Throughout his 21 years of serving, DeShields says his as-

signments to Germany and Korea were his best.

"It's a toss-up between Germany and Korea. I liked Germany because I like to travel and I love being overseas learning new cultures," he explained. "I liked Korea because I was challenged. I worked in the fire department but worked in fire prevention, outside my normal realm of things, so I was learning the job and learning something new about the fire service and doing my job a different way."

DeShields visited AEDC from Eglin AFB, Fla., during a Unit Compliance Inspection in 2004. He immediately took an interest in AEDC and its working environment.

"I came as an augmentee for the inspection and really liked

what I saw," he recollected. "It was the first time I had done an inspection in the states [he did several overseas] and it was the first time I inspected an all-civilian fire department. I thought the level of professionalism and the quality of people and the way they did things – I just thought it was awesome."

He was also impressed by the way people were treated and the way the fire chief looked after his guys and the things he did for them.

"I walked into the fire station and plastered down the wall was photos of department members who have been deployed to defend our country and on the other wall were plaques, pictures and

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Upgrades from page 1

by eliminating these machines and their capabilities," Roger Kraft, Model Shop section manager and 30-year veteran of the Model Shop, said.

A significant portion of the work performed at the Model Shop is concurrently produced while being designed or what is known at the shop as concurrent engineering.

"This means the engineer or project manager can provide some initial information and we can get the process started while awaiting the final design or specification," Kraft explained. "This also reduces cycle time significantly and helps us meet critical test and maintenance schedules."

According to Kraft, the shop's overall cycle time is anywhere from 40 to 60 days faster when compared to outsourcing. The engineer or project manager can work hand-in-hand with craft personnel, which allows them to see what the product looks like while it is being produced and tweak the requirement to ensure that the best possible product is provided.

"Without the right equipment, however, we couldn't make this happen," Kraft said.

Simmons added, "We sat down with ATA and Air Force financial folks and shared our concerns with them and the potential impact to the center that would result from the loss of this capability. We had strong advocacy from both groups."

Alan Fleenor, Air Force resource adviser, was glad to help with this initiative.

"These are some of the hardest working and most under-recognized folks on the base and they perform tasks that are vital to our test operations," Fleenor said. "When the Air Force project managers and Simmons approached me for help, I jumped at the opportunity."

Inside machinist for the Model Shop Norman Smith is thankful to all those involved who showed interest in the Model Shop upgrades. "I know we have had a lot of support from Dave Simmons, the Air Force and various test customers. Without their support we would still be using machines from the past attempting to keep up with the present," Smith said.

"With the purchases of the new machines and the recent upgrades to some of the older machines, we have gained easier set-up, faster machining, better repeatability, safer work area and some capabilities we did not have before."

The machines identified for upgrade would not only sustain the core capabilities of the Model Shop but provide new technology that would benefit the AEDC customer. This investment strategy began in fiscal year 2005 with the purchase of a new electrical discharge machine, Wire EDM, at a cost of \$360,000. Since that time, 16 new machines have been added. This includes a new 30-foot horizontal machining center and a vertical machining center.

"These machines provide a short return on investment due to the efficiency and reduction of maintenance costs," 2nd Lt. Jason Lackey, Air Force

functional manager for the Model Shop, said. "The machine set up time has been reduced by 50 percent and the time to complete the machining process has been reduced by up to 96 percent over conventional, manually operated machines."

According to Kraft, these upgrades will not only help AEDC customers, but help the craftsmen who work on the machines on a daily basis.

"We have always had talented craftsmen and I believe the best anywhere in the world," Kraft said. "We now have machines to compliment that talent."

According to Numerical Control Programmers Paul Denton and Joel Gregory the machines proved to be everything that was advertised.

"We have example after example where the new equipment has reduced costs. Parts that in the past took up to eight hours per part are now being produced in minutes," the men said.

These machines are also helping AEDC designers to design parts on the leading edge of technology while reducing and simplifying the part.

"We have been seeing an increase in business from other Air Force and government customers also," Jim Myers, 704th Maintenance Squadron director, said. "Many of these bases no longer have machine and fabrication facilities. We currently are producing parts for Langley and Edwards and have produced parts for the Army. We just finished a prototype part for Edwards that if all goes well could bring a significant amount of work to the

AEDC Model Shop."

What does it mean for AEDC and its customers?

According to Simmons, these investments will enable the Model Shop to provide unmatched capabilities to AEDC and other outside

Air Force and government sources. Not only can more aggressive customer schedules be met, the parts can be provided at a greatly reduced cost than experienced in the past.

"We invite our custom-

ers to come by and discuss their needs with us," Simmons explained. "I believe that they will be pleasantly surprised at the new capabilities and the potential advantages that can now be offered by the Model Shop."

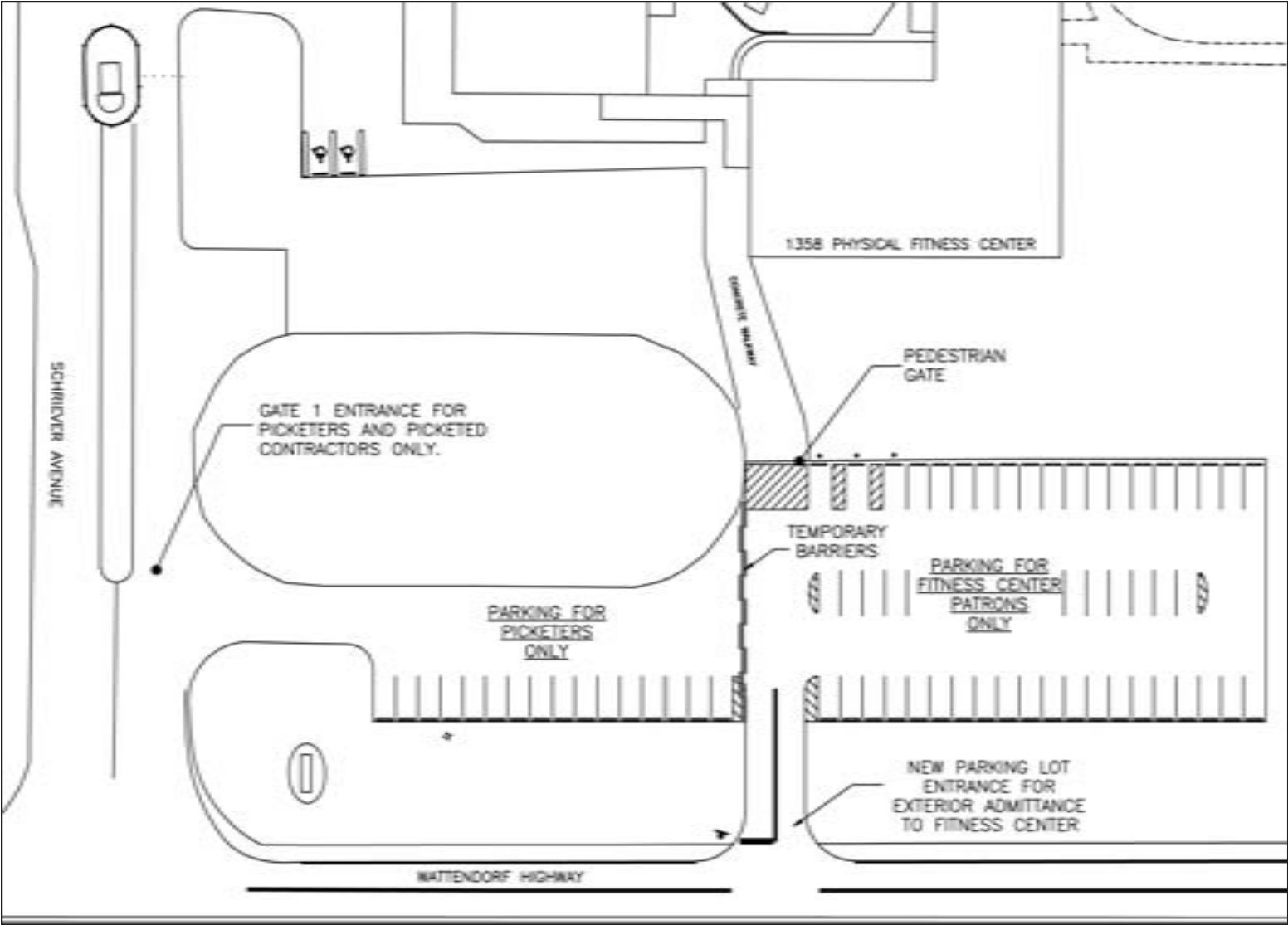


Machinist Gregg Adams operates a new milling machine to produce a part used to collect engine exhaust data. (Photos by Bob Boswell)

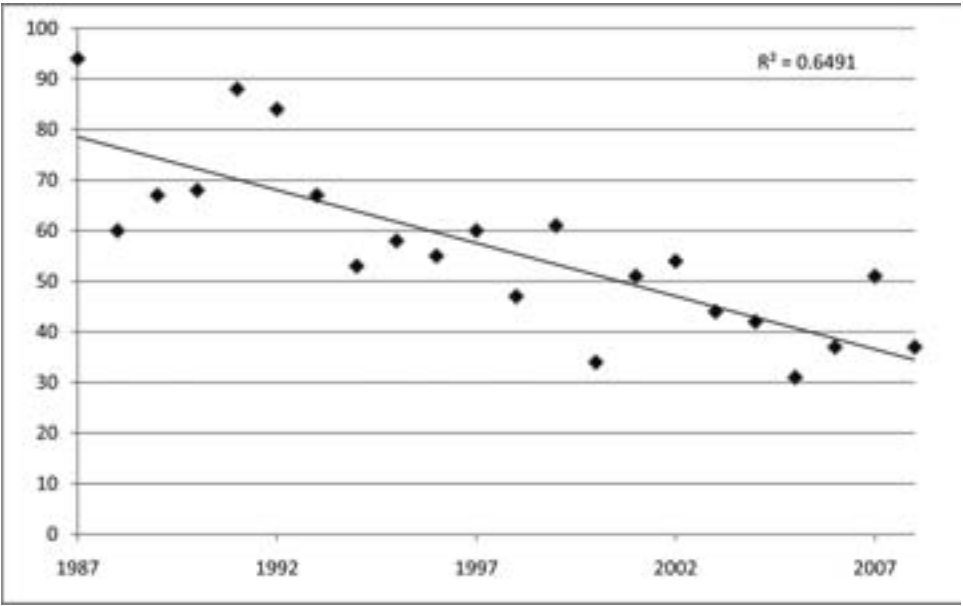


Designer Scott Wieland and Machinist Bill Hopkins observe a new electric discharge machining (EDM) in operation as it is being used to produce balances used in 16T. EDM is a manufacturing process that shapes an object by eroding the material into a specific shape with electrical discharges (sparks).

Wattendorf access to Fitness Center is now open



Wattendorf Highway access to the base Fitness Center is open. The Fitness Center parking lot has been divided into two sections (See map). Fitness Center patrons must use the new parking lot entrance from Wattendorf Highway. Use of the Gate 1 entrance is restricted to picketers and picketed contractors. Internal (mission area) customers must have a working AEDC badge with PIN as they will now need to ingress, egress through the turnstile.



Number of reported Deer Vehicle Collisions on Arnold AFB from 1987-2008. (Illustration provided)

Drivers asked to be more vigilant in reducing deer strikes

By Janaé Daniels
High Mach Editor

Arnold Air Force Base is currently working in partnership with the Tennessee Wildlife Resources Agency (TWRA) on new strategies to reduce the deer population and thereby reduce the number of deer vehicle collisions (DVC).

ATA Conservation Biologist John Lamb says there are two ways to reduce DVCs - reduce the deer population and increase driver awareness.

“The only feasible way to reduce deer populations is with hunting. To that end, we have a Memorandum of Agreement [MOA] which allows the TWRA to operate a State of Tennessee Wildlife Management Area on Arnold AFB property, except for the AEDC Security Area,” Lamb explained. “It gives us the benefit of their expertise in dealing with the hunting public as well as saving us the expense of running the program ourselves.”

Lamb continued, “The deer hunts and other hunting seasons on the area are

proposed to the Natural Resources Manager at least 90 days before scheduled TWRA Commission meetings. The commander reviews the proposed dates and approves or alters the dates and/or regulations to ensure no net loss of the military missions from this outdoor recreation program.”

According to Air Force Natural Resource Manager Rick McWhite, special deer-archery zones have been designated near areas with a high occurrence of DVCs.

“We set goals in coordination with TWRA in the current INRMP [Integrated Natural Resources Management Plan] 2007-2011 to start a deer census program to determine what the deer population is on the AEDC WMA [Wildlife Management Area],” McWhite said. “We already use a camera census method to track trends in population changes of deer within the AEDC Security Area and the Arnold Weapons Range.”

McWhite says TWRA, Arnold and the University of Tennessee will test four

deer survey methods on 14,000 acres from January-March 2010 including the use of new forward looking infrared heat sensing cameras from ground and air vehicles.

“We are also putting Global Positioning System (GPS) collars on about 20 deer to track their movements for 1 and 1/2 years,” McWhite said. “We anticipate this data providing valuable information about deer movement patterns to reduce deer vehicle strikes even more.”

Additional help by TWRA comes in using hunters to harvest the correct number of deer each year.

“We have created special hunts and deer sex restrictions to ensure enough female deer (called does) are harvested,” McWhite explained. “Doe harvest is the key to managing the deer population. Our goal is to keep the deer herd at or below 30 deer per square mile and have less than 20 deer vehicle strikes a year.”

According to the Insurance

See Deer, page 7

AtHoc – What is it?

Recently, an e-mail was sent out to all AEDC personnel requesting they establish a PIN (personal identification number) for use with the AtHoc program.

“Once this message was received, there were numerous calls to the Operations Center and Network Support questioning whether this e-mail was spam or a phishing e-mail or if it was legitimate,” explained AEDC Operations Controller Ricky Bruce. “In fact, many folks just deleted the message without reading it. Their concerns are warranted based upon all the computer network security emphasis currently placed on the use of the internet and e-mail systems.”

To prevent this from happening in the future, Bruce said it might help to explain what AtHoc is and what the system is capable of doing for the users.

“AtHoc is a network centric emergency notification system that the Operations Center uses to publish mass notifications,” he said. “In other words, it is an installation warning system. It is owned by AFMC and has been implemented throughout the entire command for AFMC bases to use for mass notifications at their respective installations.”

He said it is important to understand that AtHoc is “server-based” and the system is located at Eglin AFB, Fla.

“It’s very flexible and has the capability to publish alerts through a variety of means such as pop-up messages on your computer screen, e-mails, telephone calls, text messages and pages,” he explained. “When alerts are received whether by pop-up message, e-mail or phone call, the origin of the alert will always be identified as the ‘Air Force Materiel Command.’”

The alert will either appear in the title line of the pop-up alert, e-mail subject line, or will be spoken by the text to voice option during phone calls.

Since the system is an AFMC server-based system used by all AFMC installations, the alert will always indicate it is from the Air Force Materiel Command even though the Arnold AFB Operations Center is publishing the alert from the Operations Center in A&E Building 100.

When an e-mail notification is received, the “From” line will state “AFMC Emergency Notification System” with an identifying message number contained in brackets.

An example would be, AFMC Emergency Notification System [19268888_373944440@notify2.mir3.com].

The “Subject” line will begin with

“AEDC Operations Center” with the subject of the alert following. Be aware the e-mail will come from a “.com” address because a server at Eglin AFB is sending out the e-mail.

The use of a PIN number will only be required when phone alerts are published. It is important for the Operations Center to be able to validate when an alert is received by the intended recipients.

When a phone alert is received, you will hear the following message, “This is the Air Force Materiel Command with an important message for (insert your name). If you are (insert your name) please press 1.” If you press #1 on the phone key pad, you will be prompted to enter your unique PIN number, and the message will be read aloud over the phone. If you do not press #1, additional options will be read off for you to select from.

Please listen to the entire message to ensure you receive the complete alert. By using a PIN number, the system ensures the intended recipient has received the message and not your co-worker, family member or someone else.

To ensure the user’s contact information is current, they can access the AtHoc System by following these steps: right mouse click on the AtHoc icon (purple globe at the bottom right of your desktop display), select the “Access Self Service” option, select “My Info” tab, enter a unique PIN number in the “PIN and Confirm PIN” lines, and select “Save.” While in this area, please verify your contact information is correct by selecting the “Devices” tab and enter the appropriate contact information (phone numbers / e-mail addresses) as needed.

Please remember that the AtHoc system is used for any notification that the AEDC Commander or ATA’s General Manager deem necessary. Notifications will include weather dissemination (e.g. warnings, watches, lightning, high winds, hail, etc.), incident notifications (e.g. fires, bomb threats, force protection condition changes, active shooter, etc.), base wide and specialized team recalls, as well as general service announcements such as road closures, flag at half staff, sonic booms, etc. Additionally, Base Network Control also has the capability to use the system for network notifications such as e-mail or server outages.

For more information on AtHoc, contact Rick Hoots at 454-7955, or Rickey Bruce at 454-5361.

Article compiled by Philip Lorenz III, Technical Writer.

Have a suggestion? Send it to the ATA suggestion program

The ATA Ideas in Action Employees 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 company objectives.

A suggestion is a written, original idea that identifies a specific problem and suggests a specific method or improvement to do any job or procedure better, quicker, easier, safer or cheaper; or to improve the quality of services and facilitates the quality of work and life. The amount of the award an employee may receive for the idea depends on its value to ATA and the government. Awards are based on tangible and intangible benefits.

Intangible Suggestions are suggestions that involve improvement in department services, work conditions, energy savings and water conservation, changes in procedures, revision of forms, improvement in employee morale, health or safety or related improvements for which monetary values cannot be

determined. Tangible Suggestions are suggestion where a cash value can be measured. Tangible suggestions may result in savings/avoidances in labor, materials and services, energy savings or water conservation.

The month of October produced one implemented suggestion resulting in a \$150 cost savings. Cooling tubes that carry coolant to reactor coils originate from a header block facing inside the area of each reactor coil. It’s difficult for craftsmen to access the confined area to repair leaks. The suggester proposed

to unbolt the base of each reactor coil and disconnect the power supply buss and pick up each coil unit and rotate them and lower to LCI base and rebolt into place. Now the tubes are facing outside of the cabinet and can be easily repaired while standing outside of each cabinet. As a result, it is safer for craftsman to repair.

For more information on the suggestion program, log onto the AEDC Portal and click on the “ATA Suggestion Program” or contact Tina Bonner at 454-6804.



Above, Lieutenant Meredith practices with the Air Force rugby team before a game. (Photos provided) Inset: Lieutenant Meredith stands with a teammate of the Air Force rugby team after their Armed Forces Championship win.



Lieutenant Meredith with one of his kills, a wildebeest, during a hunting trip in 2004 to Zimbabwe. (Photo provided)

Air Force lieutenant hopes to one day return to Africa

By **Janaé Daniels**
High Mach Editor

Growing up the son of missionaries, 2nd Lt. Wes Meredith considers Africa his homeland.

Other than being born in Atlanta and going to college in Nebraska, Lieutenant Meredith has spent most of his life in Africa.

“Since I grew up there, I never had anything to compare it to. So Africa is home as far as I am concerned,” he said. “I compare things to the U.S. living there, but I never compare there to living in the U.S.”

Learning and living in a different culture can be difficult, but for Lieutenant Meredith, project manager in the Aerodynamic and Propulsion Test Unit, it has been an eye-opening, life-changing experience.

“The people over there are so welcoming and nice,” he explained. “The culture is very laid back. I found it difficult when I got to the states at first because everyone has to be doing something; everyone has to be on a schedule all the time.”

“When I got to field training and we had some time off, everyone asked me what I was going to do,” he said. “I told them I was just going to relax and they looked at me really funny.”

As a fellow lieutenant, 2nd Lt. Alex Henning, Arcs project manager for the 718th Test Squadron, believes Lieutenant Meredith brings a different perspective to the

Air Force and to AEDC.

“Wes grew up in Africa, so he shares interesting stories about cultural differences,” Lieutenant Henning said. “At the same time, he almost has an ‘outside-looking in perspective.’ Since he grew up in a different nation he shares what other countries think about our lifestyle and governmental policies.”

Capt. Catercia Isaac, from the 718th Test Squadron, finds Lieutenant Meredith interesting and a great asset to the Air Force.

“What I find most interesting is that he grew up in Africa and is an avid rugby player,” the captain said. “Not only is he the first person I know who plays rugby, but he’s on the Air Force rugby team. That is an accomplishment and shows the amount of skill he has.”

Lieutenant Meredith has also experienced a more relationship-oriented culture in Africa.

“I feel the culture in the U.S. is more materialistic-oriented and people live to work. I think Americans have a strong work ethic, but you have to be able to balance it all or you will get burned out,” he explained. “This is just my viewpoint but it’s what I have observed since being in the U.S.”

Lieutenant Meredith finds it a little ironic that he joined the military, which usually has a rigid routine and schedule, but coming from a long line of family members who were or are in the military, he decided to join the ranks anyway.

“I didn’t originally want to be in the military and never really thought about it, but I roomed with a guy at Nebraska who was in ROTC and the benefits sounded nice,” he explained. “I did want to be a mechanical engineer so I thought maybe the Air Force could help me pay for school, but I never got a scholarship.”

His father began at the Air Force Academy, but transferred to the University of Tennessee after his sophomore year.

“This past summer my dad and I were in Colorado and we drove by the academy and he said, ‘I’ve always thought about if I’d graduated from there,’” Lieutenant Meredith said recollecting the drive. “I told him I was glad he didn’t stay because he wouldn’t have been a missionary.”

As if he didn’t have enough to do with balancing ROTC and a degree in mechanical engineering at Nebraska, Lieutenant Meredith was also in the rugby club.

“I played soccer and basketball, but I was mediocre in those sports and I just liked rugby better,” he said. “Rugby was really where my passion was.”

Lieutenant Meredith just finished up competition earlier this month where the team beat the U.S. Army team in the championship 34-0. During the tournament, the Air Force rugby team played a total of five games and beat their opponents by a score of 226-3. This helped them won their sixth consecutive Armed Forces Championship. They also played against the Royal Australian Air Force and beat them by a score of 34-18 to go undefeated on the week.

Easley from page 1



Technical Sergeant Charles Easley poses with actor Robin Williams during a USO event in Kuwait during Operation Northern Watch in 2003. Easley, who retired from the military as a master sergeant, said he went to the desert three times, the first being to Kuwait for Operation Northern Watch. After 9/11, he deployed for Enduring Freedom, ending up in Baghdad when conditions there were still primitive for the troops. (Photo provided)

“If the wrong mix or some contaminant gets into the fuel going to a test cell and gets into an engine while it’s being tested, besides the lost test time and costs involved, you may have destroyed a multi-million dollar test article,” he said.

Even with his years of experience, Easley acknowledged it was a challenge to learn the ropes when he first came to Arnold.

“It’s not as easy as you’d think,” he said. “Everybody is going to teach you something – it’s definitely a team effort.”

ATA Fuels Team Manager Gary Chain said most people on base are probably not aware of the job’s complexity.

“They’re responsible for all the hydrocarbon fuels [JP-4, JP-7 and JP-8] that

come on base as far as the receiving goes and offloading, all the quality control and the sampling,” he said. “They’re also required to blend in additives, whether it is fuel system icing inhibitor, corrosive inhibitor lubricity improver or status 450, which is a conductivity additive. We’ve also had to blend some of the new types of fuel, like Fischer Tropsch, with JP-8.”

Chain said the team’s responsibility to get fuel to the test facilities at the correct rate, in the right amount and with the necessary additives can be quite a challenge.

Easley acknowledges that a positive attitude, staying focused and taking a proactive approach has served him well throughout both his personal and professional life.

Robert Holley, another

a member of his church brotherhood working with the young men in his local church, mentoring them and giving them an alternative to the street. Chuck is also interested in biking and photography.”

One thing Easley has not widely shared with others, but takes great pride in, is his solitary pursuit as an inventor.

He vividly recalls his reaction when the first digital watch, a Pulsar LED (light emitting diode) prototype made its debut in 1970.

“I thought of that before it even came out,” he said. “That’s where it all started.”

Easley said when an idea strikes, he writes down a plan and starts trying to figure out how to build a model of the invention. This often involves exploring the aisles of places like Home Depot for parts and additional

ideas to develop the plan.

“I’ve got to build a prototype, without that it’s nothing,” he explained. “I started working on my first invention in 1992.”

To date, Easley has two patents with more pending.

A patent is a set of exclusive rights granted by a national government to an inventor or their assignee for a limited period of time in exchange for a public disclosure of an invention.

“There are actually three kinds of patents that are granted by the U.S. Patent and Trademark Office,” explained Jasemine Chambers, the director of the technology center at the USPTO that examines design patents. “The first one is called a utility patent and we usually see about 440,000 of these a year.”

Utility patents, which make up most of what the

USPTO deals with, are for inventions with a specific useful function. A second type is called a plant patent.

She said Easley was involved with what is known as a design patent.

“The design patent is to protect the aesthetic appeal of the article, so it protects the looks of it, but not the underlying article,” she said. “That’s a big difference between a design and a utility patent.”

Corporate entities make up the majority of applicants for design patents annually, with only 10 percent or less being initiated by individuals like Easley.

Whether working on the next invention, helping young men at his church, or working a shift at AEDC, Easley said he views each day as a blessing, an opportunity to contribute something worthwhile.



Charles Easley sits in his workshop at home, holding a specialized toilet seat for residential use, one of two inventions he was able to get a patent on since 1992. He has other patents pending. (Photo provided)

Chief from page 3



DeShields drives in response to a fire in the air traffic control tower at the Army/Air Field during his tour in Kuwait. (Photo provided)

Mach articles commemorating successful rescue and training operations – it’s things like that – that says a lot about the quality of the troops and leadership here,” he said. “So I thought this would be a great place to be someday.”

But, before that someday would come, DeShields decided to retire from the Air Force in October 2007. He was a little unsure of what to do next.

“I chose to go overseas as a contractor for two years,” he said. “For 21 years I had a job and then one day I didn’t because I retired and I needed a job. But, it was also a way for me to continue supporting the troops.”

Although DeShields was proud to serve his country in time of need, he felt it was time to move on to the next phase of his life and career.

“I was ready for a change. It was very fast paced over there,” he said. “When I first got there I was working in operations 48-hours on and 24 off. Then I moved to their headquarters running 39 fire departments in three countries seven-days-a-week, 15 hours a day - it’s gets old.”

That someday finally came in September 2009 when DeShields was hired as an assistant fire chief.

“It’s a lot slower paced here, but it’s good because I get to learn at a slower pace,” he explained. “I’m

not being thrown to the wolves and it’s easier to take things in. It’s a really unique operation here; different than anything I have ever done. It also gives me time to get accustomed to what’s going on here and do a lot of training with the guys I work with.”

DeShields realizes there is a wealth of knowledge and experience he is coming into and is willing to not only learn but also teach as well.

“I often get the ‘that’s not the way we do things here’ and I allow them to explain to me where they’re coming from and then usually I explain to them where I am coming from and the light comes on for

both of us. They agree that there is a different way to do things and that they could learn from it and it’s been a piece of cake.”

“Twenty something years in the Air Force and a couple of years as a contractor overseas, I would be remiss in my duties as a leader to come in here and think I knew everything and I could show them the light. I keep my mind open to what is going on and what has gone on and build from there.”

For someone who has known him personally and professionally, George Chambers, assistant chief, says DeShields is a great asset to AEDC.

“I have worked with and known George for the past 14 years and have found him to be people oriented, fun loving and hard working. He is an excellent leader, mentor and assistant chief,” Chambers said. “He brings a wide range of experience to AEDC, from not only the private sector, but the Air Force and from the contract side of fire protection.”

“He is very people minded; taking care of his people is priority #1, which leads to priority #2 getting the job done. He has brought a fresh perspective into the fire department along with more than 20-plus years experience in this profession.”

DeShields considers Chambers a mentor and is glad to be working with him again.

“I worked with George in Germany for the better part of four years and he is an outstanding leader and a great mentor to me,” he explained. “He has taught me a lot about fire service, leadership and about taking care of people.”

Firefighter Brandon Gunn con-

siders DeShields the best supervisor he’s worked for to date.

“Chief DeShields is one of the best supervisors that I’ve ever had the privilege of working with,” Gunn said. “He is fair with everyone and treats all of his men with respect, and he is ever willing to help us with any issues we may have. He expects his people to excel in everything they do and his experience and knowledge is unmatched.”

When asked if he considered anything outside of firefighting once he retired, DeShields said he couldn’t and didn’t imagine it.

“I believe that everyone is called to something and this is me,” he explained. “This is what I was supposed to do. I went to school for a year to be an electrician and I’ve toyed with the idea of being on the medical side of this job; however, it’s just not for me. This is all I’ve wanted to do and I feel so comfortable doing it.”

From the day he arrived, DeShields feels like he’s been a part of the family.

“Normally, in a fire station you are part of the family immediately. I can go to any fire station in the United States and they will accept me because I’m a fireman,” he explained. “But, here it was as if they were waiting for me. It was as if I was a long lost brother and I came home.”

Crew Chief Gary George summed it up in a nutshell.

“We’re having a great time indoctrinating George to our ways here at Arnold,” George said. “He’s got a great personality and we’re looking forward to working with him.”

The University of Alabama in Huntsville will be visiting today in the EAF Lobby, Building 1103 from 10-11:30 a.m. The topic is distance learning graduate programs in engineering. Degrees offered are engineering management, systems engineering, modeling and simulation, industrial engineering, rotorcraft systems engineering, missile systems engineering, operations research and software engineering. For more information contact Dr. Dawn Utley, director of distance learning at (256) 824-6075.

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UTSI student and professor featured in Royal Society Review

University of Tennessee Space Institute (UTSI) doctoral candidate Tony Saad and Prof. Joe Majdalani are a team from Tennessee that will publish a review article in the Proceedings of the Royal Society A, considered by most to be the oldest scientific academy still in existence.

Their manuscript is entitled “On the Lagrangian optimization of wall-injected flows: from the Hart-McClure potential to the Taylor-Culick rotational motion.”

This scientific study introduces several new concepts for modeling gaseous motions in solid and hybrid rocket motors.

The study focuses on the Taylor-Culick model, a rotational motion that arises in several captivating applications, such as isotope separation and rocket internal ballistics.

In this context, the Lagrangian optimization principle is used to unravel two complementary families of solutions showcasing energy signatures. These extend from the irrotational Hart-McClure potential with minimum kinetic energy to a highly rotational flow motion with peak energy.

The Taylor-Culick motion is found to be at the confluence of both families.

To better understand the inclination of fluid particles to toggle between energy states, the entropy maximization principle is used. This principle helps to identify the Taylor-Culick configuration as the most probable pattern among those starting from rest.

The Taylor-Culick solution is found to correspond to a local equilibrium point at the convergence of both Type I and Type II families.

Finally, the study culminates in a unique reconstruction of Kelvin’s 1849 energy theorem, mostly known for its applicability limitation to a specific class of fluid motions and surface boundaries.

In their review article, Saad and Majdalani extend the theorem to a wider range of applications such as those involving open boundaries and arbitrary inlet and outlet conditions. In applying the generalized Kelvin theorem to the two families of injection driven motions, these researchers show that the Hart-McClure potential indeed carries the least amount of power among all possible solutions.

The Royal Society currently publishes seven peer reviewed journals covering many facets of mathematical, natural, and engineering disciplines.

Article by UTSI office of the Associate Vice President and Chief Operating Officer.

Deer from page 4

ance Institute for Highway Safety, about 1.5 million DVCs are estimated to occur annually in the U.S., resulting in around one billion dollars in property damage and 150 deaths. The results of close analysis of DVC data collected since 1987 by ATA Security Forces and Conservation personnel can answer some important questions regarding safety.

1) Have the DVCs on base increased? Analysis of the annual number of DVCs indicates that there has been a significant decline.

2) Are there months of the year in which DVCs are more likely to occur? Analysis by Lamb indicates that there is a significant difference in the pattern of DVCs. Drivers should always be vigilant watching for deer when driving but take extra care in the fall and winter months.

3) Are DVCs more likely to occur during certain times of the day? The time of the DVC is not a variable recorded on base. However, numerous other studies have found that DVCs are more likely to occur during the hours around dawn and dusk. Drivers are asked to take extra precaution at these times when deer are more active and drivers are less likely to see them.

4) Are there areas where DVCs have been concentrated in the past and are, therefore, more likely to occur in the future? A Geographical Information System analysis was used to identify areas with “extreme, high and medium” risk of DVC. A DVC can happen on any road, but drivers should slow down and be extra vigilant in the high DVC probability areas.

For more information contact Rick McWhite at 454-5086.

Tips to prevent, avoid deer vehicle collisions

- No strategy can completely eliminate the risk, so it is up to drivers to take due diligence on the road. The following tips are for avoiding DVCs:
- Use extreme caution during the months of October through January – this holds true on the base.
 - If you see one deer you should expect others.
 - Be attentive from sunset to midnight and hours shortly before and after sunrise. These are the highest risk periods for DVCs.
 - When driving at night, reduce your speed and also use high beam headlights when there is no oncoming traffic. The high-beams will better illuminate the eyes of deer on or near the roadway.
 - Brake firmly when you notice a deer in or near your path, but stay in your lane. Many serious crashes occur when drivers swerve to avoid a deer and hit another vehicle or lose control of their cars.
 - Do not rely on devices such as deer whistles to deter deer. These devices have not been proven to reduce DVCs.
 - Avoid the use of cell phones and other distractions while driving.
 - Make sure you buckle up.
 - Scan both the roadway and roadsides.
 - Be especially careful in the rain – deer can be harder to see and they slip easily on the pavement.
- If a DVC is unavoidable, the same sources offer this advice:**
- Don’t swerve, brake firmly, stay in your lane, hold onto the steering wheel and bring your vehicle to a controlled stop.
 - Pull off the roadway. Turn on the vehicle hazard flashers and be careful of other traffic when you leave your car.
 - Don’t attempt to remove a deer from the roadway unless you’re convinced it’s dead. A deer can inflict serious injuries.
 - Contact law enforcement to report the incident. On base, be sure to report it to the AEDC Police.
 - Contact your insurance agent or company representative to report any damage to your car. Collision with a deer is usually covered under the comprehensive portion of your automobile policy.
 - Tennessee law allows deer killed in a collision to be taken and used as food as long as the driver contacts the nearest TWRA regional office to report the accident within 48 hours.

Free holiday greetings from video-conferencing center

The video conference center is open for morale and welfare holiday videoconferences. This service is available for family members to contact DoD personnel and their families located in the continental United States, Hawaii and Alaska. AEDC has expanded the program to include deployed members overseas, including Reserve and National Guard members. Videoconferences will be scheduled on a first-come, first served basis. Reservations are being taken now through Dec. 23, Monday – Friday, from 7:30 a.m.-4 p.m. For additional information or to schedule a videoconference, contact Mike Arnold at ext. 7500.

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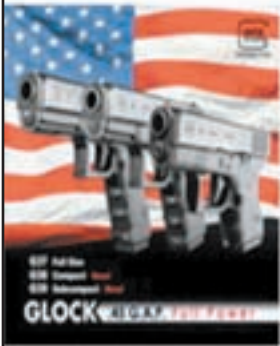
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Pratt & Whitney delivers 400th F119 engine to Air Force

East Hartford, Conn.— Pratt & Whitney has delivered the 400th F119 engine, which powers the Lockheed Martin F-22 Raptor, to the U.S. Air Force. This milestone delivery marks a significant accomplishment for the only operational fifth generation fighter engine in service today and demonstrates

the maturity of this highly advanced propulsion system. Pratt & Whitney is a United Technologies Corp. company.

“The F119 logbook continues to grow, surpassing more than 125,000 operational flight hours.

Delivery of this 400th F119 engine is tangible proof of the maturity of this fifth generation engine,” said Tyler Evans, F119 program director. “We are proud of our ongoing partnership with the U.S. Air Force and Lockheed Martin, and this delivery reinforces our commitment to on-time delivery of quality propulsion systems to our valued customer.”

The maturity in both production and flight experience of the F119 engine continues to provide a heritage of proven performance for the F135 engine because the F135 is a derivative of

the F119 engine and uses a common core.

The F135 engine is the lead propulsion system on the F-35 Lightning II and is the only engine currently powering the F-35 Joint Strike Fighter. The common technology derived from the proven F119 offers a significant advantage to the F135 with respect to maturity and single engine safety.

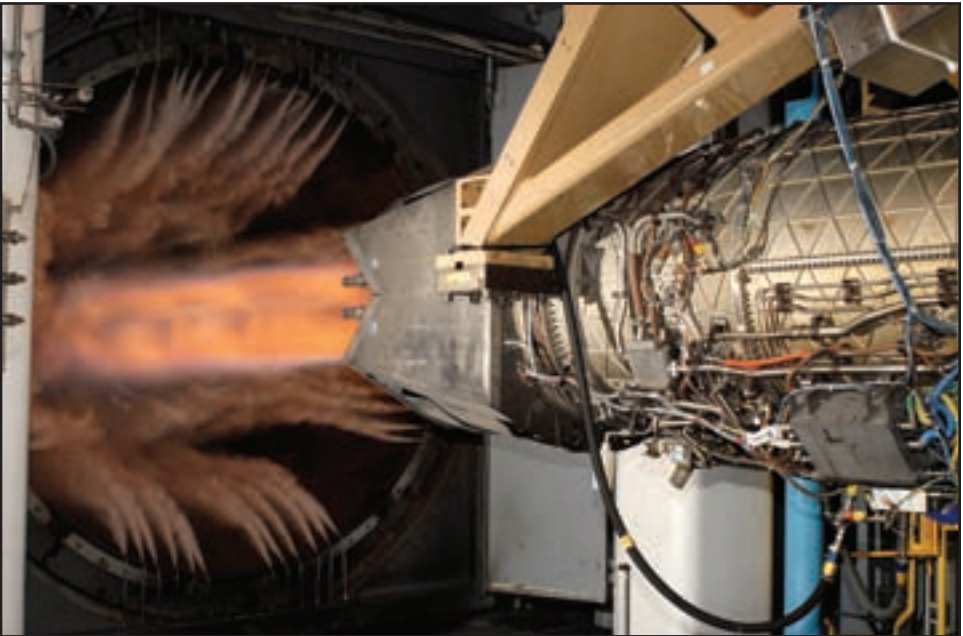
“The core of the F135 engine is being matured and proven in the twin engine F-22,” Evans said. “With 125,000 flying hours, we are able to incorporate the maturity and learning from the F119 core into the F135

propulsion system for the single-engine F-35.”

Two F119 engines power the F-22 Raptor, delivering unparalleled aircraft maneuverability and unmatched operational performance and reliability.

The F119 features an unrivaled combination of stealth technologies and vectored thrust with high thrust-to-weight performance. The F-22’s ability to operate at supersonic speeds without afterburner, known as supercruising, gives the F-22 exceptional combat performance without compromising mission range.

Article by Erin Dick, P&W Military Engines.



An F119 engine, the power plant for the F-22A Raptor, undergoes sea level Accelerated Mission Testing (AMT) in AEDC’s SL-2 testing facility in June 2006. According to Sean Smith, AEDC’s F119 project manager, the completion of the block of testing represented 75 percent total life for the engine. Smith said the tasks associated with the test included upgrades that could reduce life cycle costs and required maintenance man hours for future and currently fielded engines. (Photo by Rick Goodfriend)

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Commander’s Fit Tip: *Get adaptation on your side*

By Col. Michael Panarisi
AEDC Commander

Now that we understand the mechanics behind our exercise programs (thanks to last editions refreshingly short fit tip!) we need to look at the physiology and how we respond to exercise.

If you want to improve your fitness (note, this is different from sustaining your current fitness level), adaptation will become an obstacle, and the best way over, through, or around that roadblock is a relatively new training regimen the pros call “periodized workouts.”

Sounds pretty sophisticated, doesn’t it? Here’s how it works, and how to make it work for you.

As you progress through a workout program, your body is changing. Muscle fibers are growing, blood vessels are rerouting and expanding their networks, and nerve bundles are learning to work together. These changes tend to occur in parallel, but no single workout routine is optimized for all three simultaneously.

The result...a performance “plateau” as one of these components becomes the limiting factor. Breaking your workout into phases, or “periods” lets you focus your efforts on one at a time, and for this technique, “order matters.”

In a “periodized” program, you increase the resistance or load in three distinct phases.

The first phase is analogous to building a foundation...get the footings wrong and everything else suffers. Since most workouts rely on repetitions (a.k.a. “reps”) and sets, it’s easy to build the phases by adjusting the load to meet a rep schedule.

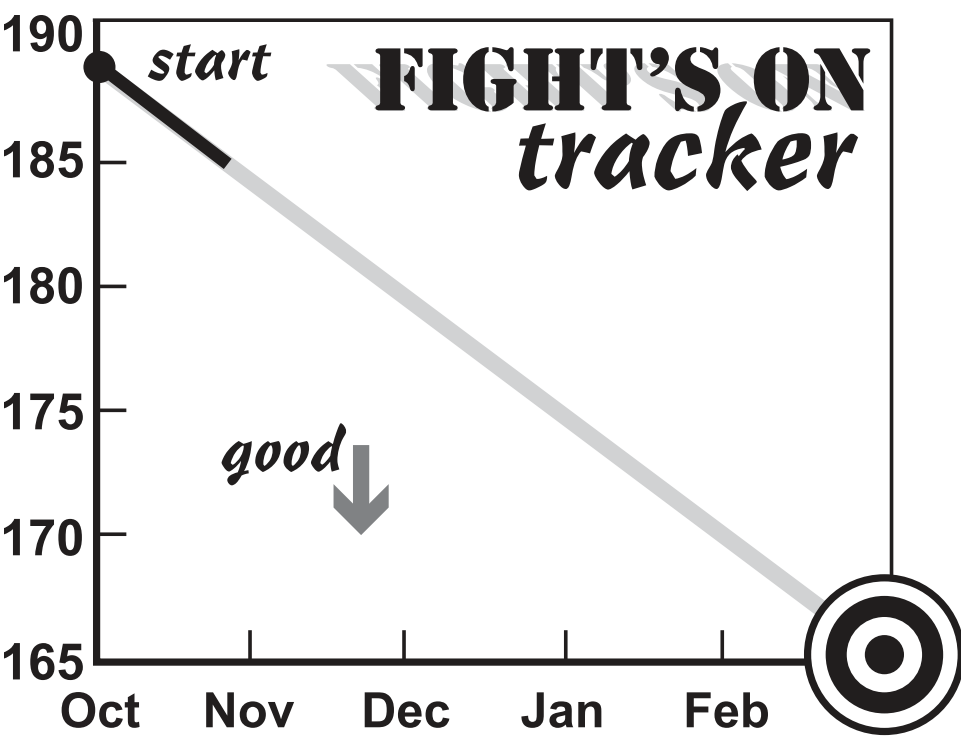
For the first period, it’s all about blood flow and careful execution, so we’re talking high reps and low weights. Most trainers will put you on a plan that uses 15-20 reps for three sets in this phase, with the last rep in each set approaching failure. I like to start with 15 reps, and a weight that produces failure in the third set (i.e. you can’t complete the third set).

If you can’t quite com-

plete the third set, that’s OK. If you misjudge the resistance level, and the third set is easy, just do another. The beauty of this approach is that you can get a clear signal of when to switch to the next “period”...when 20 reps at that weight does not produce failure. At three times a week, this will take about a month.

The second period shifts the emphasis to the muscle fibers. Here the classic “three sets of 10” comes in. Except 10 is the minimum, not the target. So, just like the first period, shoot for a weight that produces failure in the last set of 10 reps, and jump to the next period when 15 reps does not produce failure.

The third and final period targets the neuro networks, and challenges you to get all the complicated signals lined up to produce max power. This is like coaching a rowing team...all the rowers are ready to fly, but each one has to put their oar in the water at the right time to maximize the team effort. In this period, the reps are reduced to 4 to 6, and this is the spooky period. Easy to



get hurt if you aren’t careful when the resistance gets to this level, so patience is key, and if you are using free weights, a spotter is an absolute MUST. It may take a few attempts to find the right weight, but just like the other periods, target 4 reps with failure in the third set, and keep at that weight until 6 reps won’t produce failure.

What next? Easy! Start over. You now have a new “engine,” and you can re-initiate the sequence. You’ll find the resistance needed to produce failure in the third set of 15 reps will be significantly higher than previously, and from that point on you’ll see consistent gains in performance. Note this is a performance building technique,

not a body building technique. You will see some increased muscle mass, but you won’t be in danger of de-throning Mr Universe. These “periodized” plans let your body adapt sequentially, and for long term fitness, this is hot ticket. Give this a run for three months, and if nothing else, you’ll still sound sophisticated!



Air Force Chief of Staff Gen. Norton Schwartz visits with Airmen at Camp Eggers, Afghanistan, Nov. 26, 2009. Gen. Schwartz and Chief Master Sgt. of the Air Force James A. Roy joined deployed Airmen assigned to the NATO Training Mission - Afghanistan and Combined Air Power Transition Force for Thanksgiving. (U.S. Air Force photo/Senior Airman Brian Ybarbo)

Air Force leaders make Thanksgiving Day visit to Airmen in Afghanistan

By Staff Sgt. Larry E. Reid Jr.
NATO Training Mission - Afghanistan PA

Camp Eggers, Afghanistan (AFNS) – The Air Force’s top officer and enlisted member paid a Thanksgiving visit to Airmen who are deployed to the NATO Training Mission – Afghanistan and Combined Air Power Transition Force here.

During an Airmen’s call, Air Force Chief of Staff Gen. Norton Schwartz and Chief Master Sgt. of the Air Force James Roy spoke about the Air Force’s role in the current conflict in Afghanistan and thanked the Airmen and their families back home for their unwavering sacrifices.

The visit was special for the two Air Force leaders as they were able to spend some of their time meeting and speaking to the Airmen who are deployed alongside sister services and coalition forces to train, equip and mentor Afghan forces to secure their country against terrorism.

“Sincerely, it’s a wonderful thing to have all of you here this morning, particularly on Thanksgiving Day,” General Schwartz said. “For me and Chief Roy, this is a moment of thanksgiving... to be with you, to be with the folks who are on the front line doing the nation’s business as well as you are.

“The key message from the United States leadership is that what is happening here is important,” the general said, “for the security of our country and for the security of friends and allies here in this region. What we are doing is training the Afghans to be able to help secure their own space.”

The general also emphasized the importance of each and every Airman’s contribution to the coalition fight, and how joint-force cohesion can mean overall success in Afghanistan.

“All of you play your position well and on the front line you represent your Air Force so well,” the general said. “You are credible with your joint teammates, which is important because we are doing

this together. I just want to emphasize the fact that what you’re doing is worth your separation from your families. What you’re doing is worth the sacrifices you will make as individuals.”

During the Airmen’s call, Chief Roy briefly touched on the Year of the Air Force Family by talking about program improvements to better serve Airmen and their family members who are back home.

“What we are trying to do is bring the sense of community back to our bases,” said Chief Roy. “The sense of community at many of our stateside bases has diminished, so we are trying to bring that back and make sure that the programs available on our installations are useful to the members. We are not looking at having new programs, but to make sure the programs that we have are suited for members who are utilizing them.”

Airmen who were present during the Airmen’s call were reminded to make morale calls back home during the Thanksgiving holiday and to reassure their loved ones that they are safe.

“I hope you will take the opportunity to make contact at home,” the general said.

The general noted the importance of working hard today and every day and to make every day count towards helping the Afghans reach self-sustainability.

“As we go forward for the next couple of years, we need to make the best of each and every day,” he said. “We need to work as hard as we can to make the Afghan Army Air Corps credible and capable so that they can move the Afghan National Army and police to where they can secure their own space and protect them while they’re out doing their nation’s business.

“America needs good people to do this stuff,” General Schwartz said. “We need all of you, we are grateful that you are here doing this work. Chief Roy and I and the leadership of your Air Force are all in, in making sure that what you are doing here and will do, will be valued for years to come.”

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General Hoffman outlines the ‘State of the Command’

Shortly after I assumed command one year ago, we set out to define our fiscal year 2009 priorities for the men and women of AFMC.

Through our corporate process we instituted the following five priorities:

- Reinvigorate AFMC Role in the Nuclear Enterprise
- Implement Effective and Efficient Integrated Life Cycle Management
- Recruit, Train, and Retain a High Performing Work force
- Nurture and Protect our People and Families
- Be Good Stewards of Government Resources

This past year we made significant progress, and I would like to quickly highlight some of your accomplishments.

Reinvigorate AFMC Role in the Nuclear Enterprise

This continues to be our number one priority as a Command.

We worked hard to create clear lines of authority and responsibility within AFMC’s nuclear sustainment enterprise by consolidating all major nuclear sustainment and future system development activities into a single organization – the Air Force Nuclear Weapons Center (AFNWC).

Three major milestones occurred over the last year: on March 2, AFMC stood up the Directorate for Strategic Deterrence and Nuclear Integration (A10) at AFMC Headquarters; on Nov. 1, AFMC became the single nuclear weapons authority for all CONUS-based weapons storage areas (WSAs); and on Nov. 4, AFMC gained approval from the HAF Nuclear Oversight Board to establish an Air Force Program Executive Officer for Strategic Systems.

In conjunction with these milestones, we conducted our first rigorous WSA Logistics



Hoffman

Compliance Assessment Program evaluation, with the mandate that “compliance is not an option.”

We have implemented Positive Inventory Control Fusion, which provides functional users with a single source of data for enterprise tracking of Nuclear Weapons Related Materials and implemented Integrated Maintenance Data System in the Missile community to support standard configuration management activities.

Implement Effective and Efficient Integrated Life Cycle Management

We are currently working hard to rebuild and reshape the acquisition work force.

To establish clear lines of authority and accountability, AFMC will realign from a Wing/Group/Squadron structure to a Directorate/Division/Branch structure for most acquisition organizations.

In addition, several new Program Executive Officer positions will be created. This will provide a greater number of experienced senior leaders to oversee the execution of our acquisition programs and address span of control issues.

Another significant on-going effort is an initiative to recon-

stitute the Life Cycle Logistics (LCL) Work force, a long overdue response to an erosion of the Acquisition Logistics function and work force.

This initiative is an unprecedented leap in building a future state of Life Cycle Logisticians who are armed and trained in the competencies necessary to ensure future sustainment of our Weapon System development.

I have committed to advancing the LCL Reconstitution effort by standing up a Logistics Functional Office to serve as the AFMC focal point for LCL Work force management and development.

Recruit, Train, and Retain a High Performing Work force

Over the last year we put our primary focus on the nuclear and acquisition work force.

We secured 518 new authorizations for AFMC’s Nuclear Enterprise as a result of the Air Force Comprehensive Assessment of Nuclear Sustainment I (AFCANS).

Combined with intra-Command transfers, our nuclear-focused manpower is growing by almost 1,000 billets across the Command. AFMC recently secured an additional 40 manpower authorizations through the Air Force Corporate Structure as a result of AFCANS II.

We identified leaders and supervisors in key nuclear billets that require specialized experience and training. The AFNWC now provides some of that training by way of a Nuclear Management Fundamentals Course and a periodic executive-level “road show.”

In the acquisition arena we increased our overall end strength by hiring 1,773 new employees. Strategic hiring and recruitment approaches, such as partnering with universities, contracting with private recruitment firms,

job fairs, aggressive marketing campaigns, use of expedited hiring authority, and block hiring were fully put into place across the Command.

This collaborative effort enabled AFMC to execute 103 percent of our civilian pay budget on civilian pay. Over the next year, we will continue to face challenges in civilian hiring but must remain focused to ensure we meet our objectives.

Nurture and Protect our People and Families

Nurturing and protecting our people and families is necessary for our mission to succeed.

Over the last year, we continued our Civilian Health Promotions Services by providing numerous benefits to our civilian workforce to promote healthy lifestyles including cholesterol checks, blood pressure checks and a wide range of counseling and educational classes and events.

We also piloted the only AF smoking cessation program expanded to support civilians. The program includes medication, classes and access to a tobacco quit-line. As a result of this initiative, several hundred civilians quit using tobacco, and we intend to build upon this success during the upcoming year.

In this increasingly complex financial environment, staff members in seven of our Airman and Family Readiness Centers have become Certified Financial Counselors and we are training additional counselors at all locations to ensure all personnel have access to expert advice.

AFMC is the only DoD agency that reviews and tracks civilian employee suicides.

This year, AFMC chartered studies by RAND to help us better understand this complex issue and identify methods for early intervention to assist our members

struggling with stress in their lives. Through 2009, as before, AFMC continued to emphasize the importance of maintaining our Wingman culture.

Be Good Stewards of Government Resources

I challenged each of you to use and conserve our resources as if they were your own.

This past year, AFMC directly supported the President’s 2009 American Recovery and Reinvestment Act (ARRA) by securing \$260 million (23 percent of all ARRA funds for the USAF) in appropriations for 551 facility projects across the Command.

These “shovel ready” projects not only helped stimulate local economies, but significantly improved quality of life across the Command by repairing, sustaining and modernizing old infrastructure and facilities.

Additionally, AFMC awarded 66 facility energy projects this year, valued at \$71 million – a tremendous investment as the Command continues to reduce its energy demand and water consumption.

In fact, over the last year AFMC consumed 6 percent of our energy from renewable sources – doubling the AF’s target of 3 percent. Our Energy Management Steering Group is in place to ensure AFMC continues to meet our energy goals.

Each of our accomplishments and successes can be attributed to the great people of this Command. Your continued efforts to improve our ability to execute the mission through innovative initiatives are impressive.

The job is not over...many challenges remain, but I look forward to another great year delivering war-winning expeditionary capabilities to the war-fighter!

Thank you for what you do every day.

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Former UTSI student has lead role in future of space habitation

“The sky is not the limit. The sky is where we begin.” Those are the words of Dr. Robert L. Howard, Jr., Manager of the Habitability Design Center, with NASA’s Johnson Space Center in Houston, Texas.

Dr. Howard, or “Bobby” as he was affectionately called while he was a student at the University of Tennessee Space Institute (UTSI), Tullahoma, Tennessee,

received his Doctorate in Aerospace Engineering in 2002. Dr. Frank Collins was his major professor.

Today, Dr. Howard is leading a team of architects, industrial designers and engineers in NASA’s Constellation Program who will develop concepts for the lunar lander, lunar outpost, and lunar rover.

It is his responsibility to design the inside of the space vehicle into comfortable living quarters for up to four crew members who will be making their home on the moon for up to six months



Howard

at a time.

There are many obstacles to overcome before the United States makes it way to the moon for long durations. Shielding the astronauts from solar radiation, conservation of all forms of water, including recycling and purifying perspiration and urine, are just a few but necessary things that are being investigated as part of the program.

Dr. Howard says it helps to have a strong imagination in order to create something that has never been done before.

As a child, his imagination was allowed to

thrive, even when at eight years old his mother found where he had used a key to “create” a control panel for a spacecraft on a closet wall.

He met astronaut Ronald McNair on two separate occasions when he was in grade school and former astronaut Fred Gregory became a mentor during his internship at Johnson Space Center.

Born in Xenia, Ohio, but raised in Greensboro, North Carolina, Dr. Howard received a Bachelor of Science in General Science from Morehouse College in 1995, and a Bachelor of Aerospace Engineering from Georgia Tech in the same year, under the Morehouse-Georgia Tech Dual Degree Engineering Program.

He received a Master of Science in Industrial Engineering with a focus in Human Factors from North Carolina A&T State University, graduating in

December of 1997.

His thesis was entitled “An Expert Systems Approach to Spacecraft Cabin Design.”

In September of 2002 he received his PhD in Aerospace Engineering from the University of Tennessee Space Institute. His dissertation was entitled “Formulation of a Cislunar Human Transportation Architecture Through Use of Analytic, Heuristic, and Parametric Algorithms.”

Upon graduation from UTSI, Dr. Howard began working at the NASA Johnson Space Center in October 2002.

He has been involved with the National Society of Black Engineers (NSBE) since 1990, serving in numerous chapters.

He is the Chairperson for the 2010 NSBE Aerospace Systems Conference, and founder and president of the Houston Space Chapter. He is the founder and director of NSBE’s Space Special Interest Group.

Dr. Howard is a member of the American Institute of Aeronautics and Astronautics, National Space Society, and the Moon Society.

Milestones

40 YEARS
Wayne Knight, ATA
Rufus Jones, ATA

35 YEARS
E W Ray Jr., Premier
David Hartful, ATA

30 YEARS
Willie Jo Taylor, AF
Dowe Jones, AF
Kathy Moore, AF
Toni Trimble, AF
Mark Moran, ATA
Sidney Steely, Jr., ATA
Richard Evans, ATA
Alice Moran, ATA
Kenneth Delaney, ATA

25 YEARS
Robert Reed, ATA
James Stewart, ATA
Donald Bell, ATA

20 YEARS
Roy Campbell, FRC
Richard Rose, ATA
James McCoy, Jr., ATA
Randy Nunley, ATA
Richard Minor, ATA
Ricky Tate, ATA
William Benedict, ATA

15 YEARS
Carlton Walker, ATA

10 YEARS
Larry Philpott, ATA
Beverly Caldwell, ATA
Ricky Bailey, ATA



David Hartful, ATA
35 years

5 YEARS
Matthew Kennedy, ATA
Brian Knack, ATA
John Ganser, ATA
Joseph Chapman, ATA
Jefferson Thames, ATA
Tony Pederson, ATA

NEW HIRES
Maurice May, AF
Leo Marple, AF
Joseph Maniscalco, AF
Joseph Weaver, AF

INBOUND MILITARY
SSgt Shana Lodge, AF

OUTBOUND MILITARY
Lt. Col. Latheef Ahmed, AF

RETIREMENTS
Dave Zeija, AF (21 years)

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454-7076

Do you have family, friends or coworkers that golf? **Why not do your Christmas shopping at Arnold Golf Course?** The entire month of December is a merchandise sale with special discounts ranging from five to thirty percent off. Pick out your merchandise then come to the counter and roll a die to determine your discount. You must pay for the merchandise immediately after rolling. Roll a 1 for five percent off, 2 for ten percent off, 3 for fifteen, 4 for twenty, 5 for twenty-five or 6 for thirty percent off. No double discounts and Members First Plus discount does not apply in conjunction with this offer.

Mulligan’s Grill is open seven days a week from 7 a.m. to 2 p.m. Try the “Good Morning Breakfast” special Monday through Friday. This includes two eggs, choice of bacon or sausage, hash browns and one biscuit and gravy for \$4.50. Breakfast is served until 10:30 a.m. New lunch specials for December are **Monday:** hot ham and cheese sub, fries and fountain drink for \$6; **Tuesday:** Potluck – different special each week; **Wednesday:** turkey bacon club Panini, fries and fountain drink for \$6; **Thursday:** chili cheese dog, fries and fountain drink for \$6; **Friday:** club sandwich, fries and fountain drink for \$6. Try the soup of the day with a sandwich. New to the menu is the Fairway Combo – club sandwich, fries and fountain drink for \$6.25. As of Dec. 1 the Birdie Combo (chicken strips) will be \$5.50, Double Eagle Combo (Philly steak), Duffer Combo (chicken or steak wrap), Hole in One Combo (quesadilla), and 9 Iron Combo (Panini) will all be \$6.25. Other menu changes on individual items are Philly steak sandwich will be \$4.50 and chicken strips will be \$3.95. As always, Mulligan’s Grill meals are a great value and include unlimited drink refills. Call ahead for advance or to go orders at 454-7076. Remember to show your Members First Plus membership card for a ten percent discount on purchases of \$4 or more.

Arnold Lakeside Center
454-3350

Pizza Wednesdays. Call ahead to 454-5555 to order takeout pizza for your office luncheon or group gathering. Pizza is available for pick up on Wednesdays from 10:30 a.m. to 1:30 p.m. No delivery available. For better service, you may call on any day and pre-order. Pizzas are available in 12 or 16 inch and range in price starting from \$7. House favorites include the Falcon (cheese), Eagle (pepperoni and cheese), Stratofortress (pepperoni and bacon Stromboli with mozzarella and ricotta), Mustang (ham, bacon, pineapple and cheese), Spirit (veggie – mushrooms, green pepper, onion, tomato, black olives, basil, olive oil and feta cheese) and Galaxy (pepperoni, sausage, ham, green pepper, onion, mushrooms, black olives, bacon and extra cheese). Gourmet specialties include the Warthog (ground beef, cheddar, red onion, tomato, spinach and sesame seeds), Phantom

(spinach, basil, sun-dried tomatoes, garlic, olive oil, pesto, mozzarella and parmesan), Blackbird (chicken, spinach, jack cheese, alfredo sauce, parmesan, gouda and mozzarella) and Raptor (pepperoni, ham, sausage, bacon, ground beef, olive oil and cheese). Fly solo and build your own (\$1 for individual toppings). The pizza menu is also available for dinner on Thursday, Friday and Saturday from 5-9 p.m.

Arnold Lakeside Center will be open on Monday nights starting Dec. 7 for **Monday Night Football.** The games will be shown in The Landing. Order from the Express or Pizza menus 6-9 p.m. Contests will be held throughout the season and prizes awarded. Since the first Monday is also Pearl Harbor Day, the movie Pearl Harbor will be shown in the ballroom starting at 6:30 p.m. Games kickoff at 7:30 p.m. with Baltimore at Green Bay on Dec. 7, Arizona at San Francisco on Dec. 14 and New York Giants at Washington on Dec. 21. The ALC will be closed Dec. 28 for the holidays.

Movie nights are every Thursday at 6:30 p.m. with dinner available from the Express or Pizza menus from 5-9 p.m. The schedule for December is: **Dec. 10** – “All About Steve,” rated PG-13 starring Sandra Bullock and Bradley Cooper. Mary and Steve meet on a blind date and Mary, convinced they are soul mates, follows Steve around the country trying to win his love. **Dec. 17** – “Shorts,” rated PG starring Jimmy Bennett and Jake Short. Toe is picked on by bullies in his community but when a mysterious rock falls from the sky the neighborhood he already thinks is weird is about to get a lot weirder. **Dec. 24 & 31** – no movie due to holiday closure.

Friday night dining room specials available from 5-9 p.m. **Dec. 4:** All You Can Eat Pizza From the Kitchen, \$9.95 for members, \$11.95 for non members. No First Friday Jam in December. Jam night returns Jan. 8. **Dec. 11:** The Lynchburg Ribeye served with baked potato, chef’s veggie and salad bar, \$11.95 for members, \$13.95 for non members. **Dec. 18:** Frog Legs served with mashed potatoes, chef’s veggie and salad bar, \$9.95 for members, \$11.95 for non members. **Dec. 25:** Closed. Please call for reservations to ensure special is available. All specials and times are subject to change without notice. Please call ahead to ensure availability and openings.

Saturday availability and specials: **Dec 5:** Prime Rib for Two served with baked potato, fried squash or okra and salad bar, \$33 for members, \$35 for non members. **Dec. 12:** Closed for special event. Express and Pizza Menus available. **Dec. 19 & 26:** Closed. The dining room is open on Saturdays from 5-9 p.m. unless otherwise advertised. Please call for reservations to ensure these specials are available. All specials and times are subject to change without notice. Please call ahead to ensure availability and openings.

Arnold Lakeside Center will host a **New Year’s Eve Party** featuring the American Pie Band playing from 8:30 p.m. to 12:30 a.m. A club classic dinner buffet

will be served from 7:30-9:30 p.m. to include roasted prime rib of beef au jus, rustic mashed potatoes, Italian-style green beans, fresh baked rolls and fresh fruit sorbet. A big country breakfast will be served from 12:30-1:30 a.m. to include scrambled eggs, bacon, sausage links, biscuits and gravy, home fries, apple and orange juice, along with the New Year’s Eve traditional black-eyed peas, collard greens and cornbread. This event comes complete with party favors and commemorative glass flute souvenir all for \$48 for members and \$52 for non members. Tickets must be purchased by Dec. 21. Space is limited so call today to reserve your tickets at 454-3350.

Fitness Center
454-6440

Random Fitness Initiative continues. Twice a month the Fitness Center staff will roam the base during lunch and award people for showing self initiative for working out on base at a location other than the Fitness Center. Those selected will receive a prize.

Winter Workout Challenge is set for Dec. 9. Come by anytime during regular hours and draw a workout. Receive a prize upon completion of the workout.

Intramural Basketball will begin Jan. 12. Games are played on Tuesdays and Thursdays beginning at 5:30 p.m. Open to ages sixteen and up. Call to sign up as individuals or teams.

Family Member/Youth Programs (FamY)
454-3277

Youth Movie Night is back Dec. 18 from 6-9 p.m. Ages 9 and up are invited to the Open Rec Center to watch a movie. There will be free popcorn and pizza by the slice for \$1. Juice and water will also be provided free of charge.

As a companion to the ALC event, **Youth Programs will host a “black and white” attire New Year’s Eve party.** This event is open to any eligible children ages 5-12, not just those of parents attending the ALC event. The event will be from 6 p.m. to 1 a.m. for \$20 per child (\$16 for additional siblings). Parents - that’s less than \$3 per hour for your children to have an evening of fun ringing in the New Year. Why pay a baby-sitter when the whole family can celebrate the new year. This event includes a buffet of chicken tenders, pizza slices, veggies and dip, sliced fruit, cheese and crackers and popcorn bar with various toppings such as cheddar cheese powder, cinnamon & sugar, sprinkles, chocolate sauce and more. New Year’s Eve wouldn’t be complete without a toast at midnight so there will be juice and ginger ale to fill the glasses. Party favors will be provided to include party hats, noisemakers and balloons. Other activities are planned throughout the night so be sure to sign your children up by Dec. 28. There will be a \$5 late/cancellation fee after that date. A minimum of ten children are required to hold this event so call today at 454-3277.

704th Services Division hours of operation:

Arnold Lakeside Center – Special function luncheons available. Call 454-3350 for arrangements. Catering/Management offices Tuesday-Friday 10 a.m.-3 p.m.; Dinner Arnold Express Menu or Hap’s Pizza only Thursday 5-9 p.m., dinner or Arnold Express Menus and Hap’s Pizza Friday and Saturday 5-9 p.m.; Main Bar Thursday 4:30-8:30 p.m., Friday and Saturday 4:30-9 p.m.; Social Hour Friday 4-6 p.m. **Closed Dec. 22-30**

Family Member/Youth Programs – Youth Open Rec Tuesday and Thursday 4-7 p.m., Wednesday 1-6 p.m., Friday 4-9 p.m., Saturday 12-5 p.m.; Mommy and Me Playgroup Thursday 9-11 a.m. **Open 12-4 p.m. Dec. 24; Closed Dec. 25; Open 12-4 p.m. Dec. 26**

Outdoor Rec / Arts & Crafts – Main Office, Check In, Marina and Auto Shop Tuesday through Sunday 8 a.m. – 6 p.m.; FamCamp Store Tuesday through Friday 3-5 p.m., Saturday and Sunday 8-11 a.m., 2-5 p.m. **Closed Dec. 25 and 26**

Fitness Center – Monday-Friday 5 a.m.-9 p.m.; Saturday 8 a.m.-4 p.m.; Sunday 12-5 p.m. **Open 5 a.m. – 6 p.m. Dec. 24; Closed Dec. 25; Open 8 a.m. – 4 p.m. Dec. 28 through Jan. 1. Note: no classes will be held during holiday hours**

Arnold Golf Course – Pro Shop and Driving Range daily 8 a.m.- 5 p.m.. Mulligan’s Grill: daily 7 a.m. – 2 p.m. **Pro Shop open 8 a.m. – 3 p.m. Dec. 24; Closed Dec. 25**

Recycling – Monday through Friday 7 a.m. – 4 p.m.

Wingo Inn – Monday through Friday 7 a.m. – 6 p.m., Saturday and Sunday 8 a.m. – 4 p.m.

Barber Shop: by appointment – Monday, Wednesday & Friday 8 a.m.-2 p.m.; Thursday 8 a.m.-noon

Outdoor Rec (ODR)
454-6084

New Prices for Dixie Stampede starting Dec. 1. Adult tickets will be \$40.75 (\$46.29 at the gate) and children age 4-11 tickets will be \$22.75 (\$24.24 at the gate).

Paintball set for Dec. 19. Ages 10 and older are invited to play. Meet at Outdoor Rec at 9:30 a.m. Cost is \$20 and includes lunch. Remember to wear long sleeved shirts and long pants. This event was moved from the second Saturday due to a hunting date conflict.

Reservations for pa-

vilion usage by authorized personnel must be made through the Outdoor Recreation Program. This includes the two pavilions at Gossick Leadership Center Beach, the Arnold Lakeside Beach and two in the Crockett Cove area. Rental fee is \$25 per day and a \$50 refundable cleaning deposit is required. Reservations may be made up to 30 days in advance at Outdoor Rec (building 3055, previously known as Community Activities Center) or by calling 454-6084.

Corn Hole is now available for rent for office functions and private events. Four sets are available to accommodate larg-

er groups. Cost is \$10 per day or \$15 for two days. Rental reservations may be made through Outdoor Recreation (building 3055, previously known as Community Activities Center) or by calling 454-6084.

Reservation policy: FamCamp and Crockett Cove reservations may be made 45 days in advance for active duty military and reserve components and 30 days in advance for all other eligible patrons. Marina reservations may be made 15 days in advance for active duty and reserve components and 10 days for all other eligible patrons. Reservations are made through Outdoor Rec, 454-6084.

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To purchase classified space in the High Mach, contact Beth Ramsey at The Saturday Independent at (931) 728-9040 or by e-mail at bethindependent@bellsouth.net

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House for Rent 3BD 2BA in Blue Lake Villas in Tullahoma. Just renovated. Good location and view. \$720 mo. 931-434-4680

FOR RENT: Cute one-BR/ one BA home, Hwy 55 between Manchester and Summitville. Extra room for office or small second BR. Refrigerator, range, microwave, W/D hook-up, walk-in closets. Immaculate inside and out. No smoking or pets. \$450/month. Deposit and references required. 931-728-5899 or 931-273-7153.

Room For Rent: Centrally located in Manchester, TN. All utilities included. \$450/month. Please call 931-723-7239 for details.

HOUSE FOR RENT 2 Story, 5 bdrm, 4 bathroom house in Manchester. Carport, 2 fireplaces, large backyard in quiet neighborhood. Great for large family. Pets TBD. \$1000 p/m, \$1000 dep., credit check, available 7/15/09. Please call 917-412-4661 for details.

For Rent, Lease or Sale 2br, 1.5ba, 1022 sq.ft. Stove and Refrigerator. 25x35 shop. References required. 3 miles out of the city. View

at: forsalebyowner.com # 21142748. Call 728-4273 or 841-0252.

FOR RENT 3BD 2BA TWNHSE Clean and quiet - close to AEDC Tullahoma Schools. Must have references from past landlord and pass credit check. 1017 E. Lauderdale \$520 + \$500 dep call 931-461-7836 for application

FOR LEASE Roomy 3 bedroom, 1 bath brick home in walking distance to New Union School. Dishwasher, stove and refrigerator furnished. Washer and dryer hook ups. With small attached apartment, with stove and refrigerator, all freshly painted. \$800.00 and \$800.00 rent. References required. 728-4935. If no answer please leave a message and your call will be returned.

FOR SALE, 3 bedroom, 1 bath, 1150 sq. ft. house + 30 acres. 5805 Summitville Road, Morrison, TN. \$200,000.00. 256-426-0373

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Home For Sale, Rent 1228 sq. ft. 3BR/2 BA One Car Garage, Stove, Dishwasher & Built-in Microwave; House Built in Summer 2008. Located in Hannah Grace Subdv Manchester City Limits \$90,000 purchase price \$700 monthly rent + deposit 931-607-2816 or 931-581-5818

FOR RENT: 48 Regalwood Drive, Manchester; 1600 sq ft single family home, 100'x200' lot 3 Bed, 2 Bath; Brick home with 2-car garage/concrete drive; Dead end street; Well – restricted neighborhood. No smoking; Prefer no pets (will consider). \$1,000/

mo. One year contract (will consider less). One month rent as deposit. Call Dennis Winnett – 931-409-7495

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Training & Investigations Inc.



“We care about your safety!”

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Executive Protection Bureau

Training & Investigations Inc.

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ascendfcu.org

1.800.342.3086

Everyone knows it's been a tough year for the economy.

It seems like every day there's a new report of layoffs and cut-backs, foreclosures, dwindling retirement savings, and one more of this country's largest and most prominent financial institutions in turmoil.

But at the start of this year, Ascend Federal Credit Union promised to be your Personal Economic Recovery Kit, or PERK. We've spent the year delivering low-cost mortgage and auto loans, fixed-rate credit cards, free electronic account access, and more.

Plus, we are once again returning \$8 million in bonus dividends and loan interest refunds to members.¹ That brings the total returned over the past five years to more than \$26 million.

As we look forward to a new year of helping you recognize and raise your possibilities, we thank you for choosing Ascend as your primary financial institution. If you love your membership, please share it by referring your friends and family. Simply visit ascendfcu.org and click the "Refer a Friend" link. Fill out the brief referral form, and your friend or family member will receive an invitation to join Ascend. You'll receive a \$10 cash bonus for each referral who joins within six months.²

There has never been a better time
to be a member of Ascend Federal Credit Union.
Spread the word!

¹ Members will see their return on their December statements. The return excludes business accounts.
² Ascend employees are not eligible to receive the incentive. Maximum payment for all referrals is capped at \$500 per year.

This credit union is federally insured by the National Credit Union Administration. Membership is limited. 