AFRL tests Speed Agile transport vehicle concept

From left, AFMC commander Gen. Donald Hoffman and AEDC’s NFAC Test Director Patrick Goulding get a close look at a 23-percent scale model of the Speed Agile technology demonstrator that recently underwent aerodynamic testing in the world’s largest wind tunnel at NFAC in Mountain View, Calif. (Photo provided)

This testing will validate the low speed aero- dynamic performance of the hybrid powered lift system. Powered testing at this scale with Williams FJ-44 engines achieves realistic conditions and allows researchers to obtain crucial data on lateral directional stability, ground effects, aircraft performance, engine performance and aircraft operations.

Data gathered from this testing will be analyzed to determine the technology’s applicability toward future vehicles.

This technology could potentially benefit transport aircraft in both the civil and military realms. Future Air Force applications could include future transport aircraft operated by Air Mobility Command and the Air Force Special Operations Command.

The Speed Agile Concept Demonstration (SACD) concept is a four-engine, multi-mission aircraft that offers speed agility, operation routinely from short, improvised airfields, carries large and heavy payloads and employs simple and precise flight controls.

The SACD’s high-efficiency STOL design incorporates a hybrid-powered lift system. This lift system features a simplified mechanical design and low drag integration.

Together these features greatly reduce both the vehicle weight and overall drop on the vehicle, resulting in greater efficiency and payload capacity than conventional powered lift systems.

An aircraft employing Speed Agile technology could potentially operate from short, unprepared airfields. These benefits, coupled with the overall vehicle efficiency, could result in an extremely versatile aircraft capable of quickly and safely transporting equipment, supplies, and troops to remote areas.

Future plans for this technology development may include a large-scale demonstration to validate performance at representative vehicle scale and payloads.

The Speed Agile program is a combined effort of AFRL and Lockheed Martin Corporation, with testing facilities provided by AEDC and NASA, and models and associated equipment supplied by Advanced Technologies Incorporated and Williams International.

Article compiled by Philip Lorenz III

AEDC holds change of command

Gen. Donald Hoffman, Air Force Materiel Command commander, passes the AEDC flag to Col. Michael Brewer, commander, Arnold AFB, as Master Sgt. Michael Amara, Arnold’s senior enlisted member, watches during a change of command ceremony Aug. 2 at the University of Tennessee Space Institute. (Photo by Rick Goodfriend)

First Arnold police officer accepted into FBI Academy

By Shawn Jacobs

Arnold AFB Police Chief Richard Trull has been selected as the first Arnold Police Department (APD) officer to attend the FBI National Academy.

In addition, Trull was recently named the District 6 representative to the Tennessee Association of Chiefs of Police Board of Directors.

Trull will attend the prestigious FBI school at Quantico, Va., in 2012.

According to the academy’s website, its mission is “to support, promote and enhance the personal and professional development of law enforcement leaders by preparing them for leadership, dynamic and contemporary challenges through innovative techniques, facilitating excellence in education and research and forging partnerships throughout the world.”

Participation is by invitation only through a competitive process. Applicants include leaders and managers of state and local police, sheriff’s departments, military police organizations and federal law enforcement agencies.

“Trull is another one of those opportunities for law enforcement executives or senior leadership to fill their toolboxes with as much knowledge in the career field and in criminal justice as we possibly can,” Trull said. “It’s kind of the pinnacle of career-related opportunities for a police officer and not many get an opportunity to go, so it’s a pretty significant event. I appreciate the opportunity to be selected.”

The FBI regional office in Nashville submitted Trull’s name for selection to the academy after reviewing his application.

“Trull is an exceptional candidate. His personality is pretty awesome,” he said. “There’s a final process that has to be done at the actual academy at Quantico. I have until Dec. 16 to get all the paperwork done and notification to the academy to make the class.”

Trull is hoping AEDC will benefit from his attendance in many different ways.

“I really believe that the key to success to any police organization is being able to benchmark, being able to learn from how other people successfully handle incidents, situations and management of their organization,” he said. “I think that, at the very least, an opportunity to cross-talk and benchmark with police chiefs and assistant chiefs and sheriffs across the United States is an oppor-

Chief Master Sgt. of the Air Force makes first visit to Arnold and AEDC

Chief Master Sgt. of the Air Force James Roy, left, and his wife Paula get a tour of a rocket’s Dynamic Safety Test Cell J-4 from the AEDC Commander Col. Michael Panarisi and Richard Kirkpatrick, an aerospace engineer at AEDC. Chief Roy and his wife visited the base Aug. 10-11. Chief Roy represents the highest enlisted level of leadership in the Air Force and represents the interests of the enlisted force. Right, Chief Roy met AEDC employees at the base Model Shop. Chief Roy toured base facilities and spoke to the work force. An interview with Chief Roy and additional photos from his visit are on page 4. (Photos by Rick Goodfriend)

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August 19, 2011

Vol. 58, No. 16

Arnold AFB, Tenn.
Ready for the mission, ready for the challenges

By Col. Michael Brewer
AEDC Commander

First, I would like to thank our AEDC team and all of our people. Our national security is the number one priority, and we must continue to excel at this critical mission.

Being a member of this organization is absolutely critical to national security. It is that work we are doing today that will protect tomorrow, 15 years and 25 years from now.

In the history of AEDC, there have been many challenges and this team of military, government and contractor personnel have met those challenges head-on.

While many of these challenges will be technically tough, some will be as simple as demonstrating the same agility and the same ability to adapt as those before us.

Our team needs to work together to continue the dominant role that AEDC has been known for over the last several decades and that we will be known for years from now.

4. This letter supersedes previous letter dated 28 October 2006, subject as above.

For general information about High Mach, call (931) 562-4817 or go to the AEDC intranet at https://www.aedc.af.mil

The center’s vision: AEDC is the premier aerospace testing command, providing the resources and expertise required to ensure our nation’s aerospace safety and global security.

By Lt. Col. Arlene Collazo

Action Line

Team AEDC

I believe in free and open communications with the employees of AEDC. As your COMMANDER, I can assure you that the Action Line will be free and open.

You can use the Action Line by calling 454-6000. People can use the Action Line to share ideas, concerns or other matters. The Action Line is in one of three ways: via the AEDC intranet home page, in action line boxes at the base cafeteria, and by calling 454-6000.

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. Encourage everyone that the Action Line is available and that if the issue is not resolved, right give us a call.

Col. Michael Brewer
AEDC Commander

Smoking Policy

The following revised AEDC smoking policy is effective immediately. Smoking is permitted only in designated areas identified by a plastic "smoke zone" tag. This includes all areas behind the exterior exterior of the test stands and within all enclosed areas that are not designated as "smoke zones." Smoking in "smoke zones" is permitted.

The smoke zone(s) are any area in the following: areas used for fueling, and any areas within the test stand test cell facility. Space outside of the test stand test cell facility cannot be used as a "smoke zone." Smoking in any location other than a designated "smoke zone" is prohibited at all times.

The Air Force has eliminated smoking in all AEDC buildings in order to maintain a smoke-free environment for all employees. This policy aligns with AEDC’s core value, “service before self.” As leaders, we must set an example for our people.

Every day, our Airmen, Soldiers, Sailors and Mats...
A recently completed cryo-contamination experiment in AEDC’s small closed vacuum (UCV) chamber, overseen by AIAA’s Dr. Harold Lowry III and conducted by the University of Tennessee Space Institute graduate students, is being heralded as a success.

Jim Burns, AEDC’s space chambers lead, initiated the project with UTSI approximately a year and a half ago, bringing UTSI’s Dr. Trevor Moeller in as the principal investigator.

“This project has proven to be a win-win collaborative effort with UTSI and AEDC,” Burns said.

Dr. Lowry, AIAA’s technology and analysis/branch technical fellow, has been working with UTSI graduate students for 10 years at AEDC.

“We originally got Leanne Labelle as a graduate student and had been looking at cryo-contamination experiments,” Leanne said. “Dr. Labelle and we shifted over into trying to find out more about cryo-contamination. I’ve had several students and I’ve enjoyed working with all of them.”

Dr. Moeller, an assistant professor for UTSI’s Department of Mechanical and Aerospace Engineering, said cryo-contamination inside space chambers can lead to a lab or to satellites in space is not a new problem.

“His group had been experiencing some problems with the buildup of ice on surfaces and optics inside of their space environment chambers, and that would cause problems with optics because if it would build up enough it might crack a little bit so it would distort things,” Dr. Moeller said. “He was looking at ways to (prevent) that and warning of this icing buildup and to mitigate the problem.”

If the ice buildup is thick enough and cracks, ice/coolant will pass through a lens or reflect from a mirror due to absorption and scattering.

“This effect is so strong on the optical systems,” Burns said. Also, the problem of cryo-contamination is also a contamination of radiation of chamber optics.

“The other effect is on the cryo-contaminated mechanical components,” Burns said. “When those and then drives don’t move and things freeze up.”

Dr. Moeller spoke about how the team approached the project. Challenged to develop an early warning system, he explained his concept was if we put a small mirror that we put it in a laser beam and if we have detectors arranged in time, he could do a lot of things.

“It’s what the team approached the project. Challenged to develop an early warning system, he explained his concept was if we put a small mirror that we put it in a laser beam and if we have detectors arranged in time, he could do a lot of things.”

Haddon said he was just being practical and trying to save money and originally didn’t even think of turning his ideas into a suggestion program.

“I knew the project was running over budget to begin with,” Haddon said. “They welded one piece in and when I saw it I thought I realized that it would never be used and it was actually used in the way it’s used in the way it was intended to be used, and we didn’t use it at all.”

Haddon also said that they installed tie-off points allow for 100 percent of the original estimate for the ice buildup mitigation system but the project ended up with $20,000.

Haddon’s suggestion saves AEDC, ATA more than $20,000

Food collection continuing

University of the South vice chancellor visits AEDC

By Philip Lorenz III

AEDC leadership provided John McConnell, vice chancellor of the University of the South in Sewanee, and five other university administrators with their first tour of the base. Their visit included a stop at Arnold’s 16-foot Supersonic Wind Tunnel and Altitude Test Cell C-1 (see above), where the F135 Joint Strike Fighter Conventional Take Off and Landing and Carrier Variant (CV) engine is currently being tested. (Photo by Rick Goodfriend)

Dr. Trevor Moeller speaks about cryogenic contamination experiments at UTSI.

AEDC leadership provided John McConnell, vice chancellor of the University of the South in Sewanee, and five other university administrators with their first tour of the base. Their visit included a stop at Arnold’s 16-foot Supersonic Wind Tunnel and Altitude Test Cell C-1 (seen above), where the F135 Joint Strike Fighter Conventional Take Off and Landing and Carrier Variant (CV) engine is currently being tested. (Photo by Rick Goodfriend)
Chief Master Sgt. of the Air Force James Roy, left, learns about AEDC’s Aeropropulsion Systems Test Facility from John Kelly, a propulsion engineer at Arnold Air Force Base, Tenn. (Photo by Rick Goodfriend)

Chief Master Sgt. of the Air Force Roy also spoke July 25 at the Air Force Sargesons’ Association’s Professional Airman’s Conference in San Antonio. The event marked the 50th anniversary of the association. (Photo by Staff Sgt. Vernon Young Jr.)

Chief Master Sgt. of the Air Force, the highest-ranking enlisted leader in the Air Force, also spoke to the work force during his visit. (Photo by Rick Goodfriend)

Chief Roy: Air Force past, present, ahead, walk away

By Staff Sgt. Amanda M.
Air Force PA Agency

SAN ANTONIO (AFPS) – Chief Master Sgt. of the Air Force Roy also spoke to the work force during his visit. (Photo by Rick Goodfriend)

Chief Master Sgt. of the Air Force James Roy, left, learns about AEDC’s Aeropropulsion Systems Test Facility from John Kelly, an aeronautic project manager, and one of the base’s few U.S. Navy civilians employees. (Photo by Rick Goodfriend)

Chief Master Sgt. of the Air Force, the highest-ranking enlisted leader in the Air Force, also spoke to the work force during his visit. (Photo by Rick Goodfriend)

Chief Roy: Air Force past, present, ahead, walk away

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SAN ANTONIO (AFPS) – Chief Master Sgt. of the Air Force, the highest-ranking enlisted leader in the Air Force, also spoke to the work force during his visit. (Photo by Rick Goodfriend)

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Chief Master Sgt. of the Air Force James Roy, left, learns about AEDC’s Aeropropulsion Systems Test Facility from John Kelly, an aeronautic project manager, and one of the base’s few U.S. Navy civilians employees. (Photo by Rick Goodfriend)

Chief Master Sgt. of the Air Force, the highest-ranking enlisted leader in the Air Force, also spoke to the work force during his visit. (Photo by Rick Goodfriend)

Chief Master Sgt. of the Air Force, the highest-ranking enlisted leader in the Air Force, also spoke to the work force during his visit. (Photo by Rick Goodfriend)
Local CFC to begin in October at AEDC
By Darbie Sizemore
AEDC Newsroom

The 2011 local area Combined Federal Campaign will begin Oct. 5 and continue through Nov. 16, according to Tony Echols, this year’s campaign chairman.

“Times are tough for everyone, but that means those in need have an even greater need,” Echols said. “I’ve been at AEDC for nearly eight years and the generosity of the people at this center has really impressed and inspired me. Whether it’s CFC, bike-a-thons for AFSA [Air Force Ser- vant] or responding to the Nashville flooding, the people of AEDC step up. This year, like years past, the main goal of the campaign is to contact every eligible member to provide them the opportunity to donate. If past years are any indication, that’s all that will be required to ensure a successful campaign.”

The CFC is the annual fund-raising drive conducted by federal employees in their workplaces each fall. It brings many charity drives into a single annual campaign and raises millions of dollars that benefit thousands of non-profit agencies.

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

In 2010, AEDC employees raised more than $62,000, far exceeding the $50,000 goal. The goal for this year will remain the same.

More than 2,882 organizations are listed in this year’s campaign brochure; 283 of them are local. Collectively they represent a wide range of causes.

Several of the charities will be at the center between 11 a.m. and 1 p.m. Oct. 20 for the Annual CFC Charity Fair.

This is an opportunity for all AEDC employees to meet representatives from local charities and get detailed infor- mation.

“A mission for those of us leading the CFC is to make people aware how important it is to take advantage of this annual opportunity to help others in our communities, across our country and around the globe,” said Donna Paredez, this year’s CFC Deputy Chair.

CFC is the world’s largest and most successful annual workplace charity campaign, with more than 200 CFC campaigns throughout the country and internationally to help raise millions of dollars for eligible charities.

Pledges made by federal civilian, postal and military donors during the campaign season support eligible non-profit organizations that provide health and human service benefits throughout the world.

Although CFC is for DOD civilians and military, ATA has a separate charity campaign via payroll deduction which runs throughout the calendar year.

So what should people be doing now? According to Echols and Paredez, they just have to wait and they will be contacted by a key worker assigned to their organization very soon.

Ropes Course fondly remembered at recent facilitators reunion
By Shawn Jacobs
AEDC Newsroom

The official name was AEDC Teamworks Adventure.
But most folks on base prob- ably knew it as the “Ropes Course” and, in the early 1990s, it may have contributed as much to the concept of Team AEDC, as anything on base.

Spurred by Seat Systems Division Director RonPollock’s ap- proving retirement Sur. 2, Pol- lock and a number of other former facilitators of the Ropes Course met Aug. 3 for a reunion. They reminisced about the enjoyment the course brought to them and its value to AEDC.

Teamworks Adventure courses, which were located in the woods across from the Good- sfield Leadership Center (GLC), used a mix of warm-ups, games, activities and initiatives to take individuals and groups out of the daily routine and into challenges that called for cooperation, trust, team building, risk taking and problem solving, according to Bob Truesdale, group lead in Aerospace Testing Alliance’s (ATA) Space and Missiles Group and a former facilitator.

“It was a major thrust by the commander at that time and by the base in general to improve our ability to produce good people by being very team oriented,” Truesdale said. “We had a three- year agreement... about willingness to give 100 percent, to be accountable, to monitor and be monitored so that we made sure everybody was giving their best performance.”

“Safety included both physi- cal safety and mental safety,” Truesdale said. “You commit that you’re not going back to the office and make fun of [someone] for the next two years because they couldn’t climb something or do [some other activity].”

Truesdale and the course was excellent for groups of people who already worked together, but it was even better for employees who weren’t normally part of the same work team.

“That was the best use of the ropes because you would take people newly assigned to the same project but with dissimilar backgrounds and bring them to- gether, and they would problem solve and go through experiences for a day,” he said. “That would help them understand what team- ing is about: how to work with each other, how to respond to your strengths and my weak- nesses and how to collectively do a better job.”

Another former facilitator, Don Hervig, an engineer scientist in ATA’s Technology Depart- ment, said he thinks the course was very worthwhile.

“The Ropes Course was a dif- ferent way of learning,” Hervig said. “I think most people learn better by experience, and there you were experiencing some challenges that are different from what we do here at work.”

“Of course, I had a big engineering challenge, typically, but building up commu- nication skills and learning to listen to other people – those are some of the things we would hope they would take back here to AEDC and improve their skills here at work.”

Hervig doesn’t doubt the course’s lasting impact because he still bumps into people on base who speak of the activities with fondness. Many of the events, whether physical challenges or mental exercises, were designed to build confidence in employees.

Teamworks Adventure gained quite a reputation and eventually more groups from out- side the base began using the course.

“I think some people brought youth groups out from their churches or something like that and those were on weekends,” Truesdale said. “That wasn’t paid time, but facilitators were

Former facilitators attending a Ropes Course reunion lunch Aug. 3 at the pavilion near the GLC include (front row) Bob Truesdale, Terry Rayfield, Janie Casey; (second row) Larry Davis and Don Hervig; (third row) Ron Police, Bill Peters, Jim Posey and Lance Askins. Other current AEDC employees not in attendance include Chris Broadrick, Danny Catelanne, Bob McManus and Mark Smith. (Photo provided)
“We could count interference fringes and use theory to determine how much, or how thick that layer of ice is for the rate of build-up.”

He said the concept behind the experiment is fairly simple, but they had to overcome some environmental challenges.

“For one thing, one of the most challenging scenarios that we’ve had is that we had to find a way to introduce water molecules into the chamber in a controlled way,” Dr. Moeller explained.

“People will spend their entire careers trying to find ways to keep water molecules out of vacuum chambers. You look in the literature and you can find all kinds of information how to keep the stuff out, but no way to find a way to put it in.”

The team spent approximately nine months to a year investigating sources of water molecules and technologies for introducing them.

“The test that we just performed in July was really a major success for us because we had done a lot of our calculations ahead of time,” he said. “We had predicted a flux rate of water molecules into the system and calculated how the ice would build up and then predicted the characteristics of the interference fringes.

“The thing that was so impressive about it is that when the raw data started coming up on the computer, when we were running the experiment, the shape of those interference fringes that were coming up were exactly as we predicted. It was a big thing for us.”

James Rogers, who is working on his master’s degree in aerospace engineering, as we predicted. It was a big thing for us.”

James Rogers, who is working on his master’s degree in aerospace engineering, said he and the other two students who worked on this experiment did a lot of work ahead of time.

“We did lots of tests with a vacuum chamber at UTSI before we came over here and tested and compiled all that data. We all looked at it and said it looks good enough and it should work.”

Jesse Labelle, a physics graduate student working on his dissertation, has been working on the base for five and a half years.

“Dr. Moeller said, ‘I’ve done a lot of the background work as far as the properties of cryogenic vacuum chambers and I’ve been studying them, finding the properties, finding how they grow, how fast they grow in different situations and trying to look at different ways to get rid of them. Our big focus has been trying to calculate exactly what thickness distribution they will form under different environmental conditions.’”

Dr. Moeller said what will follow the cryo-contamination experiment is clear.

“We proved that our interferometer is effective,” he said. “The next step would be to reduce its component size so that these detectors could be positioned inside of the test chambers at strategic locations to monitor the buildup of ice that’s occurring in the natural environment.

“For that particular test, we needed to know how much water and ice was going into the system, and developed a very controlled approach to prove the concept.”

The team is also looking at mitigation techniques and technologies to reduce or remove ice from the critical components inside the space chambers. Those same methodologies could then be applicable to satellites in space.

“We talked about a helium curtain for keeping your helium from the cold surfaces elsewhere where it’s not an issue.”

Dr. Moeller said, “If you put a thin layer of helium across these surfaces, they kind of block the water molecules from getting to these surfaces, like a barrier.

“Another thing we’re investigating and we hope for as far as mitigation techniques goes, is that water molecules and the hydrogen molecules aren’t all in line, so if you applied a low voltage electrical field on critical test surfaces and just cycle that voltage rapidly enough it will excite these water molecules, kind of like your mature oven does.”

Dr. Moeller said this technique has a lot of potential.

“The electric fields from that voltage would add enough energy to the water molecules as they’re approaching the critical surfaces that they don’t condense [there],” he said. “So, they would still float around in other places and could condense on cold surfaces elsewhere where it’s not an issue.

And if we can show that this works, and doesn’t interfere with the test, it’s a very simple thing to do.”

Ropes from page 5

FW7 maintenance instrument technicians and electricians maneuver a fellow employee through the Spider Web during an AEDC Ropes Course exercise, Sept. 21, 1994. (Photo provided)
Air Force Chief of Staff speaks on diversity at NAACP dinner

By Alicia Garges

Air Force Chief of Staff Gen. Norton Schwartz addresses the audience at the NAACP’s Annual Armed Services and Veterans Affairs Awards Dinner held in Los Angeles July 26. The banquet was one of several events held in conjunction with the group’s annual convention and coincided with the 63rd anniversary of the executive order desegregating the military. (Photo by Lou Hernandez)

Air Force Chief of Staff Gen. Norton Schwartz addresses the audience at the NAACP’s Annual Armed Services and Veterans Affairs Awards Dinner held in Los Angeles July 26. The banquet was one of several events held in conjunction with the National Association for the Advancement of Colored People’s annual convention and coincided with the 63rd Anniversary of the executive order desegregating the military. (Photo by Lou Hernandez)

LOS ANGELES (AFNS) – Air Force Chief of Staff Gen. Norton Schwartz spoke about the importance of diversity at the NAACP’s Annual Armed Services and Veterans Affairs Awards Dinner here July 26.

The banquet was one of several events held in conjunction with the group’s annual convention and coincided with the 63rd anniversary of the executive order desegregating the military.

“As a nation, we are benefiting from having recognized the value of meaningful diversity,” General Schwartz said during an address to the attendees.

While earlier equal opportunity programs focused on race and gender, the current diversity movement looks beyond demographic considerations, the general said.

“We know that our strength is drawn from diverse perspectives that develop from different backgrounds – to name a few: socioeconomic, educational, geographical, philosophical and spiritual,” he said.

Ensuring Air Force working environments are conducive to equal opportunity and fostering diversity of perspectives in the service will lead to enhanced performance and effectiveness, Schwartz said.

“Our next challenge will be to identify more clearly how this is done and how we can measure our progress,” the general said.

Recently, the service formed the Air Force Diversity Committee, a senior-level working group chartered to find ways to leverage and better manage diversity, General Schwartz said.

According to the general, diversity should not be an end unto itself, but rather a means toward a broader desired state of enhanced effectiveness for the Air Force and its overall mission. General Schwartz pointed out that in academic literature, diversity management has been defined as the systematic and planned commitment on the part of organizations to recruit and retain employees from diverse demographic backgrounds.

“Note the open-ended sense of the phrase ‘diverse demographic backgrounds,’ which suggests that it is possible for any number of people, even of the same gender and race, to still have widely differing demographic backgrounds,” General Schwartz said.

“Therefore, managing diversity, I would argue, also implies – as well as important considerations of race, gender and ethnicity – a more active recognition and appreciation of the increasingly multicultural nature of contemporary organizations,” he said.

The Air Force’s diversity efforts focus on institutionalizing diversity throughout the service and allowing for the recruitment, development and retaining of a highly-qualified and talented total force, General Schwartz said.

“As we approach this challenge, we will consider ways in which we can engage every Airman – officer, enlisted and civilian across the total force as participants in this process, and encourage them to share in the responsibilities for ensuring that the talents and capabilities of each individual are mutually respected, valued and applied toward enhancing mission accomplishment,” Schwartz said.

Commanders and supervisors at all levels will be taking the lead in advancing diversity priorities, deepening the lines of communication and building personal interest in orchestrating individual success of others whose potential to serve the Air Force so values, he said.

“Your Air Force embraces the fundamental value of a diverse workforce, whose individual members, while possessing different backgrounds and perspectives, are singularly bound in common cause, lending their creativity, energy and dedication to the betterment of our mission and our nation’s security,” he said.
Aerospace Testing Alliance
By Shawn Jacobs

A lot of engineers at AEDC have tested jet engines. But Joshua Harman – fresh out of college with a mechanical engineering degree – can claim more than that: he’s actually built and tested his own jet engine.

Harman, a test project manager in the Turbine Engine Ground Test Complex (TSTB), credits this interest for driving him to study engineering while what better place to test jet engines than where he works.

He said his interest began about five years ago when he was a business major and ran across a book detailing how the Air Force built low cost power generation units using automotive turbochargers in the 1970s.

“I went on the Internet and found some guys in Britain who were actually doing that in garages … so I just started acquiring parts over the years, mostly automotive parts – oil coolers, fuel pumps [and] stuff like that,” Harman said.

Fast forward to 1972: Armstrong was a firefighter. He came home to visit the house one night and he said, “You ever thought about being a fireman?” Armstrong recalled. “I went back that day to work at the local old Howe.”

He was 17, uncle, who was a fireman, also encouraged Armstrong to consider going into the profession.

In 1961, Charlie Armstrong, along with his elementary school classmates, visited the Shelbyville Fire Department.

That experience left a distinct impression on Armstrong, an AEDC Fire Department firecrew chief who is retiring after nearly 38 years in the profession.

“Shelbyville’s fire chief [had] bought a new Howe fire truck,” he recalled. “There was just something about it I liked and use engines over there are all white.”

He said the Howe was “just powerful enough to run any call there was and you didn’t have to call a larger one.”

“You get there and went back in the woods about three or four miles, trying to get to a young man,” Armstrong said. AEDC firefighters use a variety of their extrication tools during training Nov. 19 at LSG Salvage in Manchester. (Photo by Rick Goodfriend)

“We get there and went back in the woods with one medic and the paramedics find them. Young Armstrong sent the grandfather. Armstrong sent the young man back to help the paramedics with the young man.

“The other crew was coming, the young man was coming back around, and I’m thinking there’s no way they can find us like that in the woods,” he said.

The two firefighters entered the woods after a three-car accident.

“We get there and the paramedics were talking to the young man. Armstrong said. “A couple of times I had to almost stop.”

A lot of engineers at AEDC have tested jet engines. But Joshua Harman – fresh out of college with a mechanical engineering degree – can claim more than that: he’s actually built and tested his own jet engine.

“In the process, I had to learn how to machine all of my own materials and perform some TIG [tungsten inert gas] welding. The whole engine is really made out of stainless steel.”

“It took about five years to complete the engine. Four of those were actually building parts, and then the last year was actually fully manufacturing and running through the engine test plan. The engine had two really tight budgets, so coming up with ways to save money was very important to me.”

Larsen at Wright State University in Dayton, Ohio, from which Hartman just graduated, are required to pass a project – and, in this case, the building of the engine, “so I did not make the engine as a hobby.”

SEMIS at Wright State University in Dayton, Ohio, from which Hartman just graduated, are required to pass a project – and, in this case, the building of the engine, “so I did not make the engine as a hobby.”

“Sure enough in about 10 minutes they come out with one medic and the paramedics and Chief Taylor and first, who was the young man’s grandfather. Armstrong sent the young man back to help the paramedics with the young man.

“They were up with a fully-functional jet engine, that ran off of propane fuel spewed all over.”

Josh Hartman, a test project manager in the Turbine Engine Ground Test Complex, where the object should make for quite a strong display.

“I realized then how this job is more than just something you do – it’s a way of life. I realize that now how this job is more than just something you do – it’s a way of life. I realize that now how this job is more than just something you do – it’s a way of life.”

In 1985, an explosion took place at the L-0 test cell, destroying the facility.

“I was there that night, but nobody was injured and we were thankful for that,” he recalled.

“The next day there was solid rocket fuel all over the ground. We had to clean it out the whole area and the night before we were over there for about right hours, just pumping the water into it. So to look at a 1,000 pound rocket motor engine explode like that is something that you don’t see, the power of what those things can do.”

Armstrong is pragmatic about his experiences as an industrial setting like AEDC.

“That’s what we do, we test things out there,” Armstrong said of engine malfunctions, and he’s not surprised at a catastrophic engine failure – the engine had been run to death, the fuel spewed all over.”

He emphasized that although accidents do happen, they are in the minority and there are solid rocket fuel safety lessons.

Armstrong enjoys his profession and appreciates the extensive training he has been provided to keep everyone safe and to help with his professional skills.

“This place has sent me to some of the best schools in the country,” he said. “They sent me to college, and I’ve been all over the country to the best fire schools. I’ve been fortunate enough to be able to go to those.”

In his collateral role to emergency medical technician, Armstrong and one of his main shift partners for approximately 10 years, Lonnie Brown, have been moving emergency patients.

“The last one was a unique case,” Armstrong said. “There was a one in a bay of his father’s landscaping business.

Josh Hartman and his jet engine are pictured Aug. 8 in his cubicle in AEDC’s Turbine Engine Ground Test Complex, where the object should make for quite a strong display. (Photo by Rick Goodfriend)

“The last one was a unique case,” Armstrong said. “There was a one in a bay of his father’s landscaping business.

As a special tribute to the 60th anniversary of Arnold AFB, U.S. Air Force A-10 West Coast Demonstration Team commander Capt. Joe “Rifle” Shetterly and P-51D “Mustang” pilot Mike Lunsford perform a Heritage Flyover for AEDC just prior to the Independence Day air show in Tullahoma July 4. The Heritage Flight package, which is formed up into actual Air Force fighter jets with vintage warbird aircraft as a moving aerial tribute to honor the sacrifices of the men and women of America’s Air Force. (Photo provided)

“In the process, I had to learn how to machine all of my own materials and perform some TIG [tungsten inert gas] welding. The whole engine is really made out of stainless steel.”

“It took about five years to complete the engine. Four of those were actually building parts, and then the last year was actually fully manufacturing and running through the engine test plan. The engine had two really tight budgets, so coming up with ways to save money was very important to me.”

Larsen at Wright State University in Dayton, Ohio, from which Hartman just graduated, are required to pass a project – and, in this case, the building of the engine, “so I did not make the engine as a hobby.”

“Sure enough in about 10 minutes they come out with one medic and the paramedics and Chief Taylor and first, who was the young man’s grandfather. Armstrong sent the young man back to help the paramedics with the young man.

“They were up with a fully-functional jet engine, that ran off of propane fuel spewed all over.”

Josh Hartman, a test project manager in the Turbine Engine Ground Test Complex, where the object should make for quite a strong display.

“I realized then how this job is more than just something you do – it’s a way of life. I realize that now how this job is more than just something you do – it’s a way of life.”

In 1985, an explosion took place at the L-0 test cell, destroying the facility.

“I was there that night, but nobody was injured and we were thankful for that,” he recalled.

“The next day there was solid rocket fuel all over the ground. We had to clean it out the whole area and the night before we were over there for about right hours, just pumping the water into it. So to look at a 1,000 pound rocket motor engine explode like that is something that you don’t see, the power of what those things can do.”

Armstrong is pragmatic about his experiences as an industrial setting like AEDC.

“That’s what we do, we test things out there,” Armstrong said of engine malfunctions, and he’s not surprised at a catastrophic engine failure – the engine had been run to death, the fuel spewed all over.”

He emphasized that although accidents do happen, they are in the minority and there are solid rocket fuel safety lessons.

Armstrong enjoys his profession and appreciates the extensive training he has been provided to keep everyone safe and to help with his professional skills.

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Dr. Eugene Sanders, AEDC Fellow, test pioneer, passes away 

Dr. Eugene J. Sanders, 75, of Winchester, passed away Aug. 11. Dr. Sanders served as AEDC’s representative to the NATO/AGARD Organization, Inc., was honored in 1999 and 1996 as a member of the Tennessee Chapter of the American Institute of Aeronautics and Astronautics, and retired from AEDC in 1998.

During his retirement, Dr. Sanders was a member of Highlands Fire Department in Tullahoma, was a member of the Board of Directors of the Scenic Tennessee of Tennessee’s Board of Directors, and served as Executive Director of Scenic Tennessee.

He was a member of the Tennessee Chamber of Commerce, served as a member of the Tennessee Board of Directors, served as chairman of the Tennessee Chamber of Commerce, and served as president of the Franklin County Chamber of Commerce.

He is survived by his wife of 54 years, Ann-Mar- ye Sanders of Winchester; sons, John Sanders and his wife Lindsay of Kingsville, Texas, and John Sanders and his wife Jill of Tullahoma, and four grandchildren; sister, Bobbie of Kennesaw, Ga.; brother, Patrick Sanders of Los Angeles; one sister-in-law, Betty of Nashville; one brother-in-law, Charlie Reuben of Nashville.

As a member of Highlands Fire Department, Dr. Sanders was a member of the Board of Directors of the Tennessee Chamber of Commerce, served as a member of the Tennessee Board of Directors, and served as president of the Franklin County Chamber of Commerce.

Dr. Sanders led three key efforts in the large wind tunnel area - cycle time reduction (from one test to another), benchmarking the facilities against like facilities, and cost-benefit analysis to improve the capabilities of the aeroballistic ranges and involved in the development of nose-tip materials for re-entry vehicles, materials to protect spacecraft, and the development of lethality of kinetic-energy projectiles.

During his tenure with the Air Force, Dr. Sanders served as program manager for three Air Force Data Exchange Agreement programs with the Scientific Research Associations in the United Kingdom and France. He was appointed chairman of the Tennessee section of the American Institute of Aeronautics and Astronautics.

Dr. Sanders oversaw high priority aerodynamics test programs like the F-22 Raptor, F/A-18E Super Hornet and the Joint Strike Fighter. He was also a key player in the AEDC commercial alliance with Boeing.

He was going to be in his position of an Air Force sponsorship, he received a doctorate in engineering from Vanderbilt University in 1993. His acquaintance with Vanderbilt continued with his acceptance of the position of adjunct professor. He has authored or co-authored more than 30 technical reports.

Dr. Eugene Sanders oversaw major aerodynamics test programs like the F-22 Raptor, F/A-18E Super Hornet and Joint Strike Fighter in the 1990s as aerodynamics technical director. He was a key player in the commercial alliance with Boeing. Responsible for resource requirements in the ’90s, he built programs in improvement and modernization, maintenance and repair and military construction.

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kerosene and unleaded fuel and has its own onboard aluminum tank. “It’s a pure turbojet,” Hartman said. “It puts out, with max afterburners, about 60 pounds of thrust. It’s fully instrumented [with] your basic engine instrumentation. “It has four temperatures, four pressures and core speed. Building the engine allowed me to relate my engineering coursework real-time to an application. It was really crucial for helping to retain information.” Hartman recently moved the engine from his Manchester apartment to his office cubicle. TSTB Director Lt. Col. Brent Peavy is Hartman’s supervisor and said he is extremely pleased to have Josh on board. “He has only been with us for a short time, but he hit the ground running at full speed,” Colonel Peavy said. “He is already applying the knowledge he gained building and testing his own engine. His hands-on experience has allowed him to step into several ongoing test programs with no spin up time and to be an extremely productive member of those teams. “And it gives him a great base to develop new knowledge. Josh is rapidly coming up to speed on test, instrumentation and plant issues, fields that take quite a bit of experience to tackle.” Hartman said he was recruited to AEDC by former Director of Engineering and Technical Management Tom Best as a Department of Defense Science, Mathematics and Research for Transformation (SMART) scholar, and the transition has been great. “For me, testing engines is something that I always wanted to do, so I think that was a big part of why I was a SMART scholar you’re geographically mobile and they can place you at any Air Force base in the country – and I got picked up here at Arnold, which I’m really excited about,” Hartman said. “The capabilities here are unmatched anywhere in the world as far as ground turbine engine testing goes. It’s exciting to play with the big toys, as opposed to some of the smaller stuff that I’m used to.” Hartman said he is excited about the future and wants to get a master’s degree in aerospace engineering, possibly from the University of Tennessee Space Institute (UTSI) or from the University of Alabama at Huntsville.
Robin Olds: Wolf Pack hero, legacy

Commentary by Howard E. Ryan

KANSAS AIR BASE, South Korea (AFNS) — The historian is the first to declare Robin Olds as the greatest pilot ever. He was in the Transportation system that was as big as his physique. He was a missionally consistent aiming – not always tactically a better fighter pilot, new tactics and the like. This did the entire career and afterwards as an after-dinner speaker and in interviews on television. And, of course, I don’t know of another fighter pilot who was ever at the heart of a beautiful movie star. Robin Olds was bigger than life.

Buck Gen. Robin Olds was born at Lake Field Hospital in Honolulu on Bastille Day, July 14, 1922 to Army Air Corps Capt. Robert Olds and Elsie Wichman Olds. His mother came from a line of Hawaiian landowners. His father was in his family from Virginia dating back to the 1750s.

The family was then stationed in Washington, D.C. and then moved to Langley, Va. Initially, one would think the young Olds would become successful due to some obvious, obvious but tiny grants included: Hap Arnold, Towner Spence, the Eaker, Florida La Conrada, Harley Gehrig, Frank Mather, Bob Williams, Roman Luft, Richard Eaker, Roscoe Turner, Edward Mannick, Elliot White Springs, Jimmy Mather, Reine Lou, and once even Eddie Rickenbacker.

However, Olds’ success was not achieved by great air power in itself. His ideas were shaped from those World War I heroes and other air power. He heard them discuss making air power prevail in future battles, the horror of trench warfare and an end- less standard. He knew air power could prevent thousands of casualties. Airplanes could carry the war to the enemy, attack his industrial base and his lines of communication, destroy his transportation system and go on to attack his population. Considering how far ahead they were looking into the future beyond its current air abilities, it is almost no wonder their ideas were disregarded as impossible. Billy Mitchell was at the side. Mitchell died in 1939, but World War II proved these ideas and fury returned, destroying all of them.

All of these were things Olds carried with him into the future. But now it was up to a new generation out of the pilots he still knew. In the Air Force After Lieutenant Olds gained entrance to World War II, he was quickly promoted to Captain in the 456th Fighter Squadron, flying a P-38 Lightning named “Scat 1.”

He became an ace in his first two combat missions, shooting down two FW-190s on Aug. 14, 1944, and three ME-109s nine days later. The 456th re-equipped with P-51 Mustangs in September and Olds scored his first kill in “Scat V” on Oct. 16.

Promoted to Major in his seventh victory southwest of Magdeburg, Germany on the same day. On Feb. 14, he recorded three more victories on Olds day, two ME-109s and an ME-110, he had shot down 11.5 others on the ground and was commander of the 456th.

Before leaving Europe with the 8th Tactical Fighter Wing on Sept. 2, 1944, young Major Olds was given direct orders to report to United States Strategic Air Forces near Paris. On arrival here was to report to Gen. Carl A. “T flew” Spaatz’s office for further instructions. The good major arrived and was how shown to names that were now known to the world: Eaker, Vandenberg, Stearns, and others. When General Spaatz arrived he greeted everyone and then ignored them all by taking Olds to a private room for a chat. It was in meetings like this and through personal experience that Olds grew to know what was important:

“Know the mission, what is expected of you and your people. Get to know those people, their attitudes and expectations. Visit all the shops and sections. Ask questions. Don’t be shy. Learn what each does, how the parts fit into the whole. Find out what supplies and equipment are lacking, what the workers need. To whom does each ship chief report? Does that officer really know the people under him? Is he aware of their needs, their training?”

“Does that NCO supervise or just make out reports without checking facts? Re number, these reports usually come to you. Don’t try to bully the troops, but make sure they know the back shops with you, that you’ll shoulder the blame when things go wrong. Correct without arrogance or anger. Recognize accomplishment. Reward accord ingly. Foster spirit through self-pride, not slogans and never the opposite of an unit.”

Col. Robin Olds preflights his F-4 Phantom before mission in Southeast Asia. He was the commander of the 8th Tactical Fighter Wing at Ubon Air Base, Thailand, and was credited with shooting down four enemy MiG aircraft in aerial combat over North Vietnam. (U.S. Air Force photo)

BUCKLEY AFB, Colo. (AFGS) – Service members guard Buckley AFB, Colo., hold a recognition ceremony Aug. 8 displaying pieces of steel from the terrorist attack on the World Trade Center.

“This special ceremony was to honor the lives that were lost on Sept. 11, 2001,” said Col. Daniel Dust, the 60th Space Wing Commander. “And for our fellow service men and women who, over the course of the last 10 years, have worked multiple times of duty, and in some instances, have paid the ultimate price for protecting our nation from another attack.

”As you know terrorism is an increasingly dangerous threat. Not just to Americans, but to all civil societies that value human life and the fundamental democratic principles that we all hold so dearly.

“Ten years ago, the United States was attacked by those attempting to challenge our freedom and our strength as a nation. However, we have demonstrated, and will continue to demonstrate and show our commitment and resolve and our country’s resolve.

“We are not afraid, and freedom will prevail.

“Looking at those relics reminds us of an evil that was perpetrated against us,” he said. “And with that, I would like you to leave with a thought. We still will be alive, we still will be father, and we still will not fail.”

Col. Daniel Dant looks on pieces of the World Trade Center Aug. 8 at Buckley AFB, Colo. The pieces, believed to be from the fifth floor of the North Tower, are only a few that have been shipped from the Port Authority of New York and New Jersey to cities and communities across the country. (Photo by Senior Airman Marcy Graham)

Commentary by Airman Nigel Sims

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His most famous operation, the one that gave the 8th TFW its name - the Wolf Pack - was Operation Bolo, a masterpiece of planning and execution. His tactics, along with another great Airman, Vice Commander Col. Daniel "Chappie" James, were the wonder of the world and grounded the communist foe’s air force for months. Olds shot down four MiGs rather quickly and then never shot down another. He had been told if he became an ace he would lose his command since his capture would be a public relations coup. He was also told he could only fly 100 missions in the Vietnam conflict. It is now known his final mission was his 152, and as much as we know about the man we can safely say he did not only kill four MiGs. Olds was almost certainly an ace in Vietnam, but being an ace mattered far less than leading his men and getting them home safe.

When Olds came home it was to brief the President and the Joint Chiefs of Staff. His words with then President Lyndon B. Johnson were few, "Get us out of this GD war!"

When LBJ asked how Olds replied, "It’s simple - air - war it!"

Olds was promoted to brigadier general but never held a major command. The remainder of his career was spent in non-operational positions, as Commandant of Cadets at the United States Air Force Academy and as a bureaucrat in the Air Force Inspector General’s Office. His inability to rise higher as a general officer is attributed to both his maverick views and his penchant for drinking. His ideas, however, have survived him. Modern fighters like the F-15E and F-16, "have capabilities we never knew in speed, range and accuracy," he said. Accuracy, stealth and range are the most important differences, according to the venerable fighter pilot. A few tactical planes now have the ability to do the job in one mission with surgical precision - just as Olds imagined might be done with P-51s in World War II.

"And that’s what the old boys dreamed of in World War I," he said. "It was the basis of their doctrine. So I guess it’s true: What goes around, comes around."

Olds, known for the flamboyantly waxed, regimental mustache he sported in Vietnam, talked openly about his individuality. An oil painting of him grinning through his illegal mustache is featured prominently in the lobby of the War-gaming Institute at Maxwell AFB, Ala.

"Generals visiting Vietnam would kind of laugh at the mustache," said Olds. "I was far away from home. It was a gesture of defiance. The kids on base loved it. Most everybody grew a mustache."

Returning home, however, he discovered not everyone was fond of his maverick behavior.

"I remember my first interview with [Air Force Chief of Staff Gen. John P.] McConnell," Olds said. "I walked briskly through the door, stopped and snapped a salute. He walked up to me, stuck a finger under my nose and said, ‘Take it off!’ And I said, ‘Yes, sir!’ And that was the end of that."

And you wonder where Mustache March comes from? Not everything Air Force comes from Robin Olds, but few will argue with you if you say it does. Are there other great Air Force men in the Air Force’s short history? Of course. There are many. But it was Robin Olds who was so persistent during all of those inter-war years constantly asking for better planes and better training when it would have been better for his career if he had toed the line more often.

Vietnam proved him right and the Air Force finally came to his way of thinking through Red Flag and more. What does this teach us? Do what is right and be ready to fight.
Supplement to High Mach

New movie time starting Sept. 7 through Sept. 17 at ALC

1. Runaway July and August due to the heat. The times remain the same – 9:30 a.m. – 3:30 p.m. – but lunch is no longer provided.

2. The group may decide to order take out from Multifly’s Coffee Bar and Grill and have a designated runner to place the orders and advance in line and pick them up.

3. A new feature has been added that will allow low expansion in the games played.

4. Play is open to ages 10 and up and ages 10-18 have a parent permission form. All participants must sign a hold harmless agreement.

Remember to wear protective clothing as the hot July and August make it hot. Outdoor Rac has enough equipment for 25 players or you can add your own equipment.

Outdoor Rac is capable of handling up to 50 players. There must be a minimum of four to hold an event. You must sign up in advance at 454-8684, especially if you need equipment.

A new rule this season is that all paintballs must be purchased from Outdoor Rac. Cost to play includes 500 balls but additional may be purchased a $1.35 per bag of 500 balls for a box of 2,000.

The cost is now $35 per player which includes equipment and 500 balls.

If you use your own equipment cost is $20 and includes 500 balls. CO2 refills are also available at $3 per tank.

If you need an extra coat to sign up no later than the Friday before the day you intend to play. Call Melissa at 454-3303.

Book Fair returns Sept. 7

Book Fair returns Sept. 7, page H7

Disneay Salute to Armed Forces special ends soon

Now through Sept. 24 discount tickets are available to active or retired military including active members of National Guard and reserves plus active or retired members of Coast Guard.

Remember to save money for lunch and souvenirs. Call 454-3303 for more information or to sign up.

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Barber Shop – By appointment – Monday through Friday 8 a.m. – 4 p.m.

Mulligan’s Grill – Monday through Friday 7 a.m. – 4 p.m.

Arnold Golf Course – Monday-Friday 5 a.m.-9 p.m.; Saturday 8 a.m.-4 p.m.;

Outdoor Rec – Main Office, Check In, Marina and Auto Shop Tuesday through Sunday 8 a.m. – 6 p.m., Movie Night Thursday 5-8 p.m., Friday 3:30-10 p.m. and Saturday 5-10 p.m.; Social Hour Friday 9 a.m.-5:30 p.m., Thursday 9 a.m.-6:30 p.m. The BX

Family Child Care – 454-3081

Barber Shop – 454-6867

Wings Inn – 454-3585

Fruit Festival (CO) – 454-GOLF (4653) or 454-7076

Multigan’s Coffee Bar and Grill – 454-FOOD (3663)

 août 19, 2011

Barber Shop now open 8 a.m.-4 p.m.

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

– Monday-Friday. Call 454-6987 for

– Special function luncheons available. Call 454-3350 for arrangements.

Arnold Lakeside Center – 454-6084

Recycling – 454-6068

Family Care – 454-3277

Family Member/Youth Programs – 454-3277

Human Resources – 454-5841

Marketing & Sponsorships – 454-3128

Barber Shop – 454-6867

Wings Inn – 454-3585

Golf Course (CO) – 454-GOLF (4653) or 454-7076

Multigan’s Coffee Bar and Grill – 454-FOOD (3663)

Services Division Phone Numbers

Area code 931  DNS 340

Services Director – 454-7776

Services Deputy – 454-5915

Community Services Flight Chief – 454-4062

Complex Manager – 454-3367

Arnold Lakeside Center (ALC) – 454-3350

Arnold Lakeside Center catering – 454-3350

Gossick Leadership Center – 454-3024

Barber Shop – 454-3081

Mulligan’s Grill – 454-FOOD (3663)

Arnold Golf Course – 454-3277

Outdoor Rec – 454-6084

Multigan’s Coffee Bar and Grill – 454-FOOD (3663)

September 2011

Sunday Monday Tuesday Wednesday Thursday Friday Saturday

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ALC Thursday movie start time 6:30 p.m.

starting Sept. 1

Barber Shop now open 8 a.m.-4 p.m.

Monday-Friday. Call 454-6987 for appointment.

Barber Shop now open 8 a.m. – 4 p.m.

Barber Shop – 454-3081

Mulligan’s Grill – 454-FOOD (3663)

Arnold Golf Course – 454-3277

Outdoor Rec – 454-6084

Multigan’s Coffee Bar and Grill – 454-FOOD (3663)

Barber Shop – 454-3081

Mulligan’s Grill – 454-FOOD (3663)

Arnold Golf Course – 454-3277

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First Friday Jam is canceled for Sept. 2. Please join us on Sept. 16. For weekend, Jam will return on Oct. 7 starting at 6 p.m. Each week a different group of listeners, dance and enjoy. Join in on a poem or song to play an instrument or sing and do your own performance.

Last Friday Trivia Challenges
Center to confirm eligibility. The contest is open to all and no pre-registration is required. Join in with the band and meet and greet with a special guest for trivia on the first Friday of each month. The quiz starts at 7 p.m. and is open to the first thirty to enter. Call to sign up by 5 p.m.

Preview of upcoming events:

- Flag Football is set to begin Oct. 4 with games played on Tuesdays. Practice will be at 6 p.m. on the Fairchild Field, Naami. Deadline to sign up is Sept. 27.
- Boot Camp is ongoing any day in the year in your space and time with no regard to the event. The first 25 spots are filled each time and is limited to six participants.
- Last Friday Trivia Challenges is open to all and no pre-registration is required. Join in with the band and meet and greet with a special guest for trivia on the first Friday of each month. The quiz starts at 7 p.m. and is open to the first thirty to enter. Call to sign up by 5 p.m.

AEDC Women’s Club
AEDC Women’s Club’s Clubhouse is open on Saturdays from 5-9 p.m. unless otherwise specified. All specials and topics are subject to change without notice. Call to sign up by 4 p.m. to ensure availability and openings.

Daydream special (all month long) on the Emerald City – Irish whiskey, Moscow mule, classic Racecar – scotch, kaz, cream.

Family Member/ Youth Programs (RFD 4-3277)

Saturday, Sept 4
- Fish fry at 4 p.m. at the Fairchild Field. Five stations throughout the field. No pre-registration required. All food will be provided. Includes corn on the cob, beverages, cookies and hot dogs. Cost is $10 for members and $11.50 for non-members. All money raised will be placed into a ‘trek’ where the map will be placed under the treasure chest where the grand prize drawings will be held. Those who are interested in working on the contact information form and any other volunteer opportunities please call Liz Gossick-Leader, AEDC, 603-776-1422. Lunch will be provided.

Best of the Best Karaoke Challenge
Come test your best karaoke skills on this path full of history. This is a private or-profit event, which generally includes a small entrance fee, snacks and fun. Bring your own equipment and PowerPoint presentation of your songs. The entrant with the highest score wins. The best karaoke choice of the “best of the best!”

Wednesday Lunch is back this month. Call ahead to 454- 5626 to order. No delivery available.

For better service, you may wish to call ahead one day and preorder. Regulars are welcome during lunch, including specials, burgers, chicken fingers, and stuffed burritos. All other meals are available for takeout or call CheckPoint Smokehouse.

Friday night din
ing room specials available at least one night per week in advance (see menu and nummer). No first Friday due to the jam (call the Center 454-5702 for info). Sept. 7; Prime Rib for Thursday Prime Rib for Thursday \$15.95 member, $16.95 non-member. Sept. 13; Prime Rib \$15.95 member, $16.95 non-member. Sept. 20; Prime Rib \$15.95 member, $16.95 non-member. Sept. 29; Prime Rib \$15.95 member, $16.95 non-member. Tabouli and meatballs, $12.95 member, $13.95 non-member. Sept. 24; All-you-can-eat spaghetti for $12.95 member, $13.95 non-member. Sept. 4; Pizza for $10.95 member, $11.95 non-member. Sept. 11; Open on Saturdays from 5-9 p.m. unless otherwise specified. All specials and topics are subject to change without notice. Call to sign up by 4 p.m. to ensure availability and openings.

Event Trivia Challenge
Saturday, Sept 4: Camp is Monday, Tuesday, Wednesday or Thursday, 6-7 a.m. Cost is $5 and there is food to live. Max 90 participants. The cost is $5 and there is food to live. Max 90 participants. Mount at AEDC and wear proper gear to protect you from water and wind. Some waters will be rough. Sept. 4: Old Stone Fort Day Bike tour.

Expo Date of Sale
Full-fledged group of vendors will be available at 4-11 p.m. on the Main Stage. Food vendors and beverage vendors will be available at 4-11 p.m. on the Main Stage. Food vendors and beverage vendors will be available at 4-11 p.m. on the Main Stage.

AEDC Women’s Club’s Clubhouse is open on Saturdays from 5-9 p.m. unless otherwise specified. All specials and topics are subject to change without notice. Call to sign up by 4 p.m. to ensure availability and openings.

Wingo Inn 454-3051
Check us out on Facebook! Arnold

AEDC Women’s Club
AEDC Women’s Club’s Clubhouse is open. It is a program from a retired high school teacher, Bonnie Sponaugle. Since her retirement, she has brought to us that “Quick, Poisn and Poverty” cooking classes.

Bring a friend. There has been a space available at AEDC, in the past, and the present, in the same location. The Quail’s of Halverson. She is also a master gardener, and has a waterfowl and herds of chickens. She has been a friend. She has a space available at AEDC, in the past, and the present, in the same location.

This is an open event for use of the young or older, who would like to learn more about small-scale growing of their own food. There are no prerequisites.

The Auto Shop is open to all ages. Participants may be young or older, who would like to learn more about small-scale growing of their own food. There are no prerequisites.

Bring a friend. There has been a space available at AEDC, in the past, and the present, in the same location.