



HIGH MACH

Serving the World's Premier Flight Simulation Test Complex



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Tunnel 9 engineers conduct boundary layer transition experiments at Mach 10



Air Force Project Engineer and Purdue University graduate student George Moraru examines the illuminated temperature sensitive paint (TSP) coating on the large, 7-degree cone prior to the test program. The testing is performed under the Test Resource Management Center (TRMC) and the Air Force Office of Scientific Research (AFOSR) funded Hypersonic Center of Testing Excellence (CoTE). (Photo by Michael Smith)

By Eric Marineau
AEDC Contributing Writer

The AEDC Hypervelocity Wind Tunnel 9 is performing experiments on a large 7-degree cone test article at Mach 10 to improve the understanding of hypersonic boundary layer transition in testing and evaluation (T&E) facilities. The testing is made possible under the Test Resource Management Cen-

ter (TRMC) and the Air Force office of Scientific Research (AFOSR) funded Hypersonic Center of Testing Excellence (CoTE).

According to Dan Marren, White Oak site director, this program was modeled after the AFOSR lab programs and is the first of its kind for the test and evaluation commands.

"The first CoTE pilot program is in the area of hyper-

sonics and is located at AEDC White Oak because of the unique hypervelocity test facility (Tunnel 9) located there. The University of Maryland was chosen as the anchor university," he said. "The basic vision of this program is to bring together researchers, students and testing professionals working on U.S. Air Force priorities in a collaborative way that strengthens the vitality of both the re-

search and the work force."

The experimental program conducted over the Fall-Winter 2013-2014 consists of approximately 20 Mach 10 runs at units Reynolds number between two and 10 million per foot. High fidelity measurements are required to make better flight predictions based wind tunnel measurements and to validate boundary layer stability computations. Such

computations offering predictive capabilities and their validation based on wind tunnel data are essential to reduce the developmental risks of new hypersonic systems. The ability to predict whether or not a vehicle will maintain a laminar boundary layer while travelling at hypersonic speed is critical. For turbulent boundary layers,

See TUNNEL, page 3

MLK Jr. Remembrance Walk



Employees recently participated in a Remembrance Walk at AEDC as a tribute to Dr. Martin Luther King Jr. and others who made sacrifices for equality and fairness in providing opportunities and freedoms for all people. The event was also in recognition of the national birthday celebration of King with a theme of "Remember! Celebrate! Act! ... A Day On, Not A Day Off." The theme focused on community service. The event began with remarks from AEDC African American Heritage Committee Remembrance Walk Coordinators Fred Rone and Art Walker and AEDC Commander Col. Raymond Toth followed by a walk around a portion of the Complex. (Photo by Jacqueline Cowan)

AEDC Fellows nominations needed by Mar. 28

By Raquel March
ATA Public Affairs

AEDC is currently accepting nominations for the 2014 Fellows Program with submissions due no later than March 28.

Established in 1989, the Fellows program recognizes AEDC individuals who have made substantial and exceptionally distinguished technical contributions to the nation's aerospace ground testing capability at AEDC.

Since the inception of the program, AEDC has bestowed the complex's highest honor to a total of 79 individuals (Fellows, Craftsmen Fellow, Lifetime



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HIGH MACH

Arnold Engineering Development Complex
An Air Force Materiel Command Test Complex

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Commander

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Public Affairs



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



Core Values

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



Vision

"ATA will be a trusted partner in delivering best value warfighter support and assert stewardship to AEDC"

Core Values

- Be accountable for our own actions
- Ensure the safety of individuals and equipment
- Demonstrate the highest integrity and ethical standards
- Communicate clearly and openly
- Deliver professional and technical excellence
- Nurture, enable and treat people fairly
- Align with customer goals and objectives
 - Use disciplined and innovative processes
 - Continually improve in all that we do

AEDC personnel reminded to follow base flag and song courtesies

By Raquel March
ATA Public Affairs

AEDC Commander Col. Raymond Toth authorized that "Reveille" play at 7 a.m. each morning beginning Feb. 17.

"Reveille" is a bugle call at about sunrise signaling the first military formation of the day. The name comes from "réveille", the French word for awaken. The "Reveille" signifies the beginning of the duty day for most employees at Arnold AFB and is therefore scheduled to play over the base public address system.

Due to the personnel structure of AEDC – which include military, government civil service employees and contractor employees – there are some proper respects that should be followed when the music for "Reveille" begins.

Whether in uniform or

not in uniform, protocol dictates that you stop and face the flag or the music out of respect. At the first sounds of "Reveille", stop where you are and turn to face the flag, or in a case where the flag is not visible, turn in the general direction of the flag or the sound. If in uniform, stand at parade rest. Arms should be at your sides for government civilians and contract employees.

For employees already engaged in physical work and stopping your task will create a safety risk, continue to work but respect fellow workers who are observing the morning ceremonies.

If you are driving a vehicle during "Reveille", drive the car to the side of the road and stop. All occupants should sit quietly at attention until the last note of the music plays.

The gate police officers stop traffic coming onto the

base at 7 a.m. to coincide with the playing of "Reveille".

At 3:30 p.m. each day at AEDC, "The U.S. Air Force" song is played as a reminder of our heritage and to instill pride in our Air Force military personnel. It also serves to remind our government civilians and contract employees that we are also a part of the Air Force team in support of our national defense.

"The U.S. Air Force" song was written in 1938 by Robert MacArthur Crawford in response to General of the Air Force Henry "Hap" Arnold's song writing contest to help give the Army Air Corps its own musical identity. The original title of the song was "Army Air Corps." After the Army Air Corp became the Air Force in 1947, the song title changed to "Air Force Song." Today the of-

ficial title is "The U.S. Air Force."

When "The U.S. Air Force" song is played, it is customary to stand, clap and join in singing. However, it isn't necessary for base personnel to clap and sing at the 3:30 p.m. playing of "The U.S. Air Force" song. Each individual should stand and face the music if outdoors. Do not salute.

AEDC personnel are instructed to observe the playing of the national anthem each day at 5 p.m. The "Retreat" will play before the national anthem to signal the end of the official day.

During the playing of the national anthem when the flag is displayed, all present – except those in uniform – should stand at attention facing the flag with the right hand over the heart. Men not in uniform should remove their headdress with their right hand and hold

it at the left shoulder, the hand being over the heart. Persons in uniform should render the military salute at the first note of the anthem and retain this position until the last note. Veterans and service members not in uniform may render a salute during the national anthem if they so desire. When the flag is not displayed, those present should face toward the music and act in the same manner they would if the flag were displayed there.

Additionally, the gate police officers stop traffic at 5 p.m. to coincide with the playing of the national anthem.

If you are driving a vehicle during the playing of the national anthem, drive the car to the side of the road and stop. All occupants should sit quietly at attention until the last note of the music has played.

James ceremoniously sworn-in by Hagel

WASHINGTON (AFNS) – Deborah Lee James, the 23rd secretary of the Air Force, was ceremoniously sworn in by Defense Secretary Chuck Hagel at the Pentagon Jan. 24.

Hagel called James well suited to lead the Air Force as the nation faces an increasingly uncertain security environment.

"The rise of emerging powers, dangerous rogue states, affiliated terrorist organizations, and the proliferation of technology will mean more contested and complicated domains, from space to cyber to sea lanes," he said.

Hagel noted that James has spent the last 30 years serving on the staff of the House Armed Services Committee, at the Pentagon, where she served three secretaries of defense, as well as in the private sector. Her approach, he said, "has been to understand the problems and opportunities, listen carefully, and then act decisively." This, he added, will make her a success leading the Air Force.

At today's ceremony, Hagel said he, James and Air Force Chief of Staff Gen. Mark A. Welsh III are deeply concerned "about the



Defense Secretary Chuck Hagel, left, ceremoniously swears in Deborah Lee James, second from left, as the 23rd secretary of the Air Force, as her family looks on during a ceremony in the Pentagon, Washington, D.C., Jan. 24. James pledged to leave the Air Force some years from now on a path toward greater capability and better affordability. (U.S. Air Force photo/Jim Varhegyi)

overall health and professionalism and discipline of our strategic forces," and called the problems facing the new Air Force secretary daunting. But he credited James with a "swift, decisive and thoughtful response," to the matter after she visited missile bases around the country in recent days. Even so, he said, "restoring confidence in the nuclear mission will be a top priority."

James, who was officially sworn in as secretary last month, thanked her family, friends and mentors for their support along the

way.

"I owe a deep debt of gratitude to everyone who has been a source of support to me," James said. "As our former Secretary of State, Senator, and First Lady Hillary Rodham Clinton famously wrote, 'It takes a village.' Well, look around you, for you are the village of my life. I am humbled and grateful that you are with me."

From the start, James' focus has been on people.

"Our Airmen form the foundation of all we do," James said. "Over the last few weeks, I have

been able to look into the eyes of young Airmen who stand sentinel for our country. I have heard the pride in our Airmen's voices, the pride they have in their profession and as members of the United States Air Force."

James pledged to leave the Air Force some years from now on a path toward greater capability and better affordability, but cautioned the service will continue to face difficult challenges and trade-offs brought on by shrinking budgets. She recognized that this is no easy feat, but is optimistic none the less.

Wood attends SecAF swearing-in ceremony

Civic Leader Walt Wood attended the Secretary of the Air Force Swearing-in Ceremony for Deborah James at the Pentagon and visited with the new Secretary after the event.

"The USAF is indeed fortunate to have Secretary James as our leader; she has excellent experience in both the private and public sector," Wood said. "She brings a strong leadership style that deals with issues decisively and quickly.

"Our nation is faced with huge challenges when it comes to maintaining air superiority, but Secretary James is focused on keeping our airmen in mind. We have an Air Force second to none, but that is only possible through the outstanding job done by our Airmen."

Wood was a charter member of the Arnold Community Council and a past president. He continues to participate in the ACC and support AEDC.



Civic Leader Walt Wood, right, speaks with the new Secretary of the Air Force Deborah James after her recent swearing-in ceremony as Secretary of the Air Force. (U.S. Air Force photo/Jim Varhegyi)

Smoking Policy

1. The following revised AEDC smoking policy is effective immediately. Smoking is permitted solely in designated areas identified by a plastic "smoke genie." This receptacle is for the sole purpose of cigarette butt disposal. If there is no receptacle, smoking is not permitted in that area. It is the responsibility of all smokers to clean up the area surrounding the receptacles for any cigarette butts on the ground. Smoking in government-owned vehicles is strictly prohibited. Personnel are allowed to smoke in their personal vehicles at any time. Smoking areas will be held to the absolute minimum and will be located in low traffic, low visibility areas away from points of building ingress/egress and air intakes. A map of all authorized smoking areas is available on the AEDC web portal at https://papro.arnold.af.mil/PORTAL/images/Smoking_area_map.pdf. Smoking near a facility in an area not designated on the map is prohibited and any smoking receptacles located in areas not shown on the map will be removed. All "smoking permitted" and "no smoking" signs will be removed unless specifically required by OSHA.

The fact a person smokes has no bearing on the number of breaks they may take. Breaks should be taken in accordance with the company/agency personnel policies that apply to all employees.

Smoking, including the use of electronic cigarettes and smokeless tobacco, is prohibited in any area, at times when official business is being conducted with government clients, test customers, outside visitors and dignitaries, and where official business is being conducted including conference rooms, auditorium settings, business meetings, or in any other area where Air Force regulations specifically prohibit use. Containers of tobacco waste product, including sealed containers, must not be left unattended or disposed of in trash receptacles. Users of smokeless tobacco must flush tobacco waste down the toilet. Due to the nature, appearance, and safety concerns of electronic cigarettes (also known as "e-cigs"), the use of said products will abide by the same rules for tobacco products stated above and governed by AFI 40-102, *Tobacco Use in the Air Force*.

2. Supervisors at every level will ensure this policy is followed. Disciplinary action is appropriate for repeated violations.

3. Updates to this policy will be made in the future to further align with Air Force guidelines.

4. This policy remains effective until rescinded. (This policy is dated December 20, 2013)

Action Line

Team AEDC

I believe in free and open communications with our Team AEDC employees, and that's why we have the Action Line available. People can use the Action Line to clear up rumors, ask questions, suggest ideas on improvements, enter complaints or get other issues off their chests. They can access the Action Line in one of three ways: via the AEDC intranet home page, Action Line boxes at the base cafeterias and by calling 454-6000.

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

Col. Raymond Toth
AEDC Commander

Software management team encourages users to follow software use guidelines

By Denise Gavin
AEDC Contributing Writer

It is the responsibility of all AEDC personnel to prevent software misuse, theft or piracy. As users of government owned computers, please read the following guidelines concerning your responsibilities in preventing software misuse at Arnold Air Force Base.

It is the responsibility of all software users to ensure the following:

- Software must be lawfully obtained before it can be installed on a government-owned computer
 - Proof of license ownership, media, and documentation must be supplied to the Base Network Control Center prior to installation of new software to the network
- Government-owned software must not be installed or used on a home computer unless the software license explicitly allows users to do so and the Base Communication and Information Systems Officer has authorized such use
 - When authorized for installation on a home computer, only use the software for official Air Force business
 - Personal use may be a violation of *The Copyright Act*, rendering the individual user accountable and liable for misuse
- Do not install free-ware, shareware, or personally owned software on government systems without approval by the Information Assurance Office
- Do not make any illegal copies of copyrighted software
 - A single copy of software is permitted for backup

purposes if the licensing agreement permits and will be retained by the Base Network Control Center

- This backup copy cannot be used to install the software in additional locations
- Ensure software is properly disposed of according to the licensing agreement at the end of the software use
 - Software can be forwarded to the

Base Network Control Center when no longer needed

Further guidance on software licensing can be found in AF133-114 AFMC Supplement I, Executive Order 13103, and on the Team AEDC website at the Arnold EIM SW Licensing Site https://cs.eis.afmc.af.mil/sites/afmc_slm/arnold_afb/default.aspx. For more information call the Arnold Air Force Base Software License Manager at 454-5948.

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the heating rate and viscous drag both increase sharply leading to more stringent thermal protection requirements, a reduced range and/or increased propulsion requirements.

Previous measurements in large scale hypersonic T&E facilities over the last 40 years were mostly limited to the determination of the transition location and provided limited insight into the physics of the transition process. Several cutting edge measurements techniques providing new insight are used during this test campaign including temperature sensitive paint (TSP), high frequency response pressure sensors and high speed Schlieren cinematography.

A new high speed data acquisition system is being deployed during this program to simultaneously acquire signals from 90 pressure transducers at sample rates between two and 10 MHz. Pressure measurements at frequencies up to 1 MHz are required to measure the acoustic instabilities (2nd mode wave) propagating and growing inside the laminar boundary layer and their breakdown which leads to turbulent flow. Such measurement can be achieved using high frequency response piezoelectric pressure transducers. The high density of pressure transducers on the cone test article allows the determination of the spatial amplification rates of instabilities which can be directly compared against boundary layer stability computations. In addition to point measurements, TSP provides global surface heat transfer to reveal detailed information about the shape of the transition front and transitional flow features such as crossflow vortices.

The 61-inch long cone model is fitted with interchangeable nose tips with radii between 0.06 and two inches in order to assess the effect of nose bluntness on boundary layer transition. Previous measurements have revealed that transition moves downstream with an increase in nose diameter. Such measurements have been corroborated with stability computations showing reduced second mode growth with increased bluntness. However, high fidelity instability measurements have yet to be performed for a wide range of nose bluntness.

The effect of small angle of attacks on the shape of the transition front is not well understood. This effect is investigated by using the unique Tunnel 9 hydraulic pitch system which allows measurement over a wide angle of attack range during a single wind tunnel run. Measurements at angles of attack up to 10 degrees are performed to quantify the effect of crossflow instability on the transition process.

Economic and Community Development Commissioner visits AEDC



The Tennessee Economic and Community Development (ECD) Commissioner Bill Hagerty (far left) recently met with AEDC officials on Friday to get an update on the Complex. The commissioner and several of his staff members met with AEDC Commander Col. Raymond Toth (3rd from left), Dr. Douglas Blake (2nd from right), Col. James Krajewski, Clark Brandon, John Laviolette, and Jason Austin (not shown). Each time the legislature goes into recess, the commissioner and his team hit the road to talk with businesses across the state. One topic included in their discussion at AEDC was the Enhanced Use Lease Program which allows the Department of Defense to lease land or facilities to public entities or private developers. Area ECD from Coffee and Franklin counties and local government representatives also attended the meeting. (Photo by Jacqueline Cowan)

AFMC promotes American Heart Month

AFMC Wellness Support Center

WRIGHT-PATTERSON AIR FORCE BASE, Ohio – February is American Heart Month. The Centers for Disease Control and Prevention report approximately 600,000 Americans die from heart disease each year – that’s one out of every four deaths. Heart disease is the leading cause of death for both men and women, but heart disease is preventable and controllable when individuals make healthy lifestyle choices and manage their health conditions.

Risk factors are conditions and lifestyle habits that increase your risk of

heart disease. The more risk factors you have, the higher your chances of having a heart attack. According to the American Heart Association, risk factors for heart disease include:

- High blood pressure
- Being overweight
- Physical inactivity
- Tobacco smoke exposure
- High blood cholesterol
- Diabetes
- Uncontrolled stress
- Increasing age
- Family medical history

While certain risk factors – such as age and family history of early heart disease – cannot be changed, it is important to understand that you can lower your risk for heart disease. The CDC states that on average, people at low risk of heart disease live nearly 10 years longer than people at high risk. Keys to prevent or delay the onset of heart disease include healthy lifestyle habits that focus on weight management, being physically active, avoidance of tobacco smoke, and proper nutrition.

To help prevent heart disease and increase awareness of its effects, Civilian Health Promotion Ser-

vices is promoting the “Do You Know Your Numbers” wellness campaign during American Heart Month. Some risk factors for heart disease, such as high blood pressure or high blood cholesterol, may not have obvious signs or symptoms. The Cardio Risk Profile screening available through CHPS can help with early identification of risk factors for heart disease. The CRP screening is free to all Department of Defense (appropriated fund) AFMC civilian employees. For more information regarding wellness screenings, contact your local CHPS team or visit www.AFMCwellness.com.

NOMINATIONS from page 1

Achievement Fellows and Honorary Fellows).

AEDC Fellow nominations may be submitted by any present or former AEDC government or operating contractor/subcontractor employee. All current or retired military, civilian and operating contractor and subcontractor personnel assigned or previously assigned to AEDC can be considered candidates for selection as an AEDC Fellow. Candidates qualified for consideration as an AEDC Fellow must personally have made sustained, notable and valu-

able contributions in aerospace ground testing at AEDC.

AEDC Craftsmen Fellow nominations may also be submitted in the same manner as the AEDC Fellow nominations. All current or retired military, civilian and operating contractor/subcontractor personnel assigned, or previously assigned, to AEDC can be considered candidates for selection as an AEDC Craftsmen Fellow. The Craftsmen Fellow category recognizes exceptional craftsmen who possess the ability to identi-

fy customer requirements and respond with sustained technical innovations, working effectively and efficiently as part of technical teams and have dedicated their careers to the success of AEDC’s mission. They must have personally made notable and valuable lifetime contributions to AEDC in any area relevant to the AEDC mission.

AEDC Lifetime Achievement Fellow nominations may be submitted by any present or former AEDC government or operating contractor/subcontractor

employee. AEDC Lifetime Achievement Fellows are reserved for exceptional candidates and are not necessarily selected each year. All current or retired military, civilian and operating contractor/subcontractor personnel assigned or previously assigned to AEDC can be considered candidates for selection as an AEDC Lifetime Achievement Fellow. Candidates qualified for consideration as an AEDC Lifetime Achievement Fellow must personally have made notable and valuable lifetime

contributions to AEDC in any area relevant to the AEDC mission.

Only AEDC Fellows may submit a nomination for an AEDC Honorary Fellow. AEDC Honorary Fellows are reserved for exceptional candidates and are not necessarily selected each year. Candidates qualified for consideration as an AEDC Honorary Fellow must have made sustained, notable, valuable and significant contributions to AEDC. These eminent individuals need not have worked at Arnold AFB.

Newly selected AEDC Fellows are honored annually on or about June 25, the birthday of General of the Air Force Gen. Henry “Hap” Arnold.

For more information including the format for AEDC Fellows nomination submissions, contact AEDC Chief Technologist Edward Kraft or Debbie Williams at (931) 454-6505. Nominations must be submitted in written form with supporting materials to: AEDC/CZ, 100 Kindel Drive, Suite A327, Arnold AFB, TN 37389-1327.

ATA thanks employees for their hard work



ATA recently held a special barbecue luncheon for employees at the Chem/Met Lab to express appreciation for a couple of major efforts. The Chemicals Lab successfully received recertification by the American Industrial Hygiene Association (AIHA) and the Non-Destructive Testing (NDT) lab's X-ray support of a recent solid rocket motor. ATA Director Lynn Moran, Deputy Director Debbie Bayer and Branch Manager Walt Bishop say they organized the luncheon to recognize the Chem Lab employees for their continued excellence of work. AIHA certification is difficult to obtain and establishes high standards of performance for laboratories; it promotes the production of quality data for use in evaluating exposures that impact public health, the environment and public resources. The NDT folks were recognized for successfully meeting a customer's requirement on schedule which was a complex task requiring experience and flexibility. (Photo by Rick Goodfriend)

Milestones

40 YEARS

Sandra Burnette, ATA
James Poole, Premiere
Warren Shells, ATA

35 YEARS

Ricky Burdette, ATA
Darhl Frazier, ATA
Cynthia Marshall, ATA
Charles Morgret, ATA

30 YEARS

Arnold Collier, AF
Aubrey Delk III, ATA
Gary Jarrell, ATA
Stephens Savelle, ATA
Doyle Veazey, ATA
Clark Wright, ATA
25 YEARS
Gary Garner, ATA

Charles Reed, ATA

20 YEARS

Donald Anderson Jr., ATA
Sarah Newberry, ATA
Stephen Sliger, ATA

15 YEARS

Stephen Farrington, ATA

Jeffery Grosch, ATA
Condy Sisson, ATA
Alice Sparks, ATA

5 YEARS

Tommy Anderson Jr., ATA
Johnny Hicks, ATA
Kevin Lovvorn, ATA
Andrea Stephens, ATA

INBOUND MILITARY

Tech. Sgt. Jason Nelson
Capt. Matthew Hornung

RETIREMENTS

Katherine Brasier, ATA
Edward Broxson III, ATA
William Cathcart, ATA
Phillip Estep, ATA
James Morton, ATA
Eldon Powell, ATA
Margie Thronberry, ATA
(Deceased 1/15/2014)
James Wiesen, ATA
Donald York, ATA

NEW HIRES

Joshua Blair, ATA
David Brooks, ATA
Carlos Bussche, ATA
Kacie Croxen, AF
Justin Davis, ATA
Janice Denny, ATA
James Evans Jr., ATA
Marcus Frey, ATA
Benjamin Howell, ATA
Joshua Hudson, ATA
Chad Luttrell, ATA
Michael Mason, ATA
Charles Medley, ATA
Craig Morris, ATA
Nolan Murray, ATA
Andrew Redmon, ATA
Brandy Rogers, ATA
Erica Krajewski, AF

PROMOTIONS

Amber Bowen, ATA
Ryan Glasby, ATA
George Blasingame Jr.,
ATA



Charles Morgret

Charles Morgret – ATA Integrated Test and Evaluation, Engineer

What is your most memorable AEDC moment during your years of service?

"There have been many, but probably at the top of the list was the meeting in 1992 at which we successfully proposed to Lockheed an integrated test and evaluation approach to F-22 store separation wind-tunnel testing, based around unique AEDC-developed simulation capabilities. That meeting led to a savings of several million dollars to the F-22 program and kicked off a long and productive partnership with the F-22 store-separation community extending through the wind-tunnel test program into the flight test program."

Cindi Marshall – ATA Human Resources, Human Resources Information Specialist

What is your most memorable AEDC moment during your years of service?

"Over these 35 years I have worked in Human Resources, Plant Operations, Rocket Projects, Turbine Projects, and in the Office of the President and Chairman of the Board, all of which have been positive and filled with great memories of accomplishment and good people. One moment that stands out in my mind was the first time the award fee was shared with employees. Lee Gossick, the Deputy General Manager at that time, handed out \$100 bills and shook the hand of every employee in the company."

AEDC quarterly award winners announced



Capt. Brett Ramnarine
Company Grade Officer
(3rd quarter)



Tech. Sgt. James Key
Non-Commissioned
Officer and Honor Guard
(3rd quarter)



2nd Lt. Andrew Spurgeon
Company Grade Officer
(4th quarter)



Master Sgt. George Allen
Senior Non-
Commissioned Officer
(4th quarter)



Tech. Sgt. Rodney Clemmons
Non-Commissioned
Officer (4th quarter)



Christy Charter
Civilian of the Quarter
Clerical/Technical
Support (3rd quarter)



Jennifer Clark
Civilian of the Quarter
Administrative
(3rd quarter)



Elijah Minter
Civilian of the Quarter
Scientist/Engineer
(3rd quarter)



Judy Mohler
Civilian of the Quarter
Clerical/Technical
Support (4th quarter)



Sara Rozell
Civilian of the Quarter
Administrative
(4th quarter)



Art Walker
Civilian of the Quarter
Scientist/Engineer
(4th quarter)



Kelly Roberts
NAF Employee
of the Quarter
Category I (3rd quarter)



Brianna Curbow
NAF Employee
of the Quarter
Category II (3rd quarter)



Paul McCowan
NAF Employee
of the Quarter
Category I (4th quarter)



Sarah Jordan
NAF Employee
of the Quarter
Category II (4th quarter)



Cheryl Posey
ATA Customer Service
Excellence (Internal)
Award (4th quarter)
Information Technology
and Systems



Michael Bennett
ATA Customer Service
Excellence (External)
Award (4th quarter)
Information Technology
and Systems



Kevin Holst
ATA Customer Service
Excellence (External)
Award (4th quarter)
Integrated Test and
Evaluation



Dan Lewis
ATA Customer Service
Excellence (External)
Award (4th quarter)
Integrated Test and
Evaluation – Tunnel 9



Carol Smith
ATA Customer Service
Excellence (Internal)
Award (1st quarter)
Mission Support

AEDC Team Members were recently recognized for their outstanding performance in their areas of expertise. Military and government civilian team members received awards for the 3rd and 4th quarters of 2013. ATA personnel received awards for their 4th quarter of FY2013 and 1st quarter of FY2014.

A photograph wasn't available of Noel Pujol, the ATA Customer Service Excellence (External) Award winner for the first quarter. Pujol works in the ATA Integrated Test and Evaluation Department.

Knack receives People's Choice Award



Brian Knack, an ATA project manager with the Integrated Test and Evaluation Department, recently received the William M. Dunne People's Choice Award for the 3rd quarter.

Knack was recognized for his outstanding performance as the project manager and project engineer in the Aeropropulsion Test Projects section. He directed his team in several first time achievements and other noteworthy accomplishments.

General Lee Gossick Team Excellence Awards



Advanced Hypersonic Weapon Analysis Team (Team leader: Frank Langham) (3rd quarter). Team members shown here are (front row, l-r) Dr. Donald Malloy, Frank Langham, Calain Schuman, Dereck Daniel, and Ken Tatum; (back row, l-r) 1st Lt. Joshua Coughenour, John Hopf, Chuck Morgret, Fred Lawrence and 2nd Lt. Kyle Monsma. (Photo by Rick Goodfriend)



Advanced Missile Signature Center Field Measurement Team (Team leaders: David Cox and Celia Doub) (4th quarter). Team members shown here are (front row, l-r) Roy Carroll, CeCe Doub, Sarah Cothran and Paul Schwer; (back row, l-r) Henry Horne, Chad Overcast, David Cox and 2nd Lt. Michael Parmentier. (Photo by Rick Goodfriend)

Schuman receives People's Choice Award



Calain Schuman, a government civilian aerospace engineer with the AEDC Test Operations Division, recently received the William M. Dunne People's Choice Award for the 4th quarter.

Schuman was recognized for his exceptional management in design and analysis solutions, facilitation for the customer and test and evaluation planning. He is also recognized for providing technical guidance to customers.

Semi-Annual AEDC Technical Achievement Award



Dr. Jesse Labello



The Defensive Test Asset Protection Team: (l-r) James Winchester, Rod Steward, Mackie Snipes and Dustin Boss.

AEDC's finest honored at annual awards banquet

Mohyuddin receives Engineer of the Year Award



AEDC leadership honored annual award winners at the Complex's recent Annual Awards Banquet. Retired U.S. Air Force Chief Master Sgt. Terry Hood (right), the AEDC Communications Branch, Information Technology Resource manager, was the keynote speaker. AEDC Commander Col. Raymond Toth presented Hood with the guest speaker appreciation memento and she also received the AEDC Annual Awards Banquet Spirit Award. (Photo by Jacqueline Cowan)



Zak Mohyuddin, an ATA engineer with the Integrated Test and Evaluation Department, recently received the Engineer of the Year Award. Mohyuddin was recognized for his outstanding performance. The nomination selecting him for the award cited his work, "well represents the application of his talent and brings a well-deserved recognition of the capabilities in diverse engineering disciplines to ATA and AEDC."

General Lee Gossick Team Excellence Award



A-10 Thunderbolt II warfighter aircraft Integrated Test Team



Capt. Sarah Kress
Company Grade Officer



Master Sgt. George Allen
Senior Non-Commissioned Officer



Tech. Sgt. James Key
Non-Commissioned Officer and Honor Guard



Cheryl Posey
ATA Customer Service Excellence (Internal) Award Information Technology and Systems



Kevin Holst
ATA Customer Service Excellence (External) Award Integrated Test and Evaluation



Brian Knack
William M. Dunne People's Choice Award ATA Integrated Test and Evaluation



Christy Charter
Civilian of the Quarter Clerical/Technical Support



Donna Paredez
Civilian of the Quarter Administrative



Tyler Neale
Civilian of the Quarter Scientist/Engineer



Kelly Roberts
NAF Employee of the Quarter Category I



Sarah Jordan
NAF Employee of the Quarter Category I



Dr. Jesse Labello
Technical Achievement Award

ASK WHAT A LIVING TRUST CAN DO FOR YOU...

Mission critical AEDC SBIR project supports missile warning sensor technology

AEDC Staff Report

Potential surface-to-air missile threats facing the nation are front and center on the minds of AEDC's Martha Simmons and Dr. Robert Hiers, AEDC Technical Fellow for instrumentation and diagnostic systems for the technology and analysis branch.

Simmons and Hiers provide technical oversight to a Small Business Innovation Research (SBIR)-funded project that will greatly enhance AEDC's capability for generating comprehensive signature databases of missile threats that are used in the development and evaluation of warning sensors.

The project is being conducted by Propulsion Science and Technology, Inc. (PST), a small company located in New Jersey with less than 10 employees.

"The objective is to combine limited empirical

The objective is to combine limited empirical measurements with physics-based numerical simulations to describe exhaust plume signatures at all conditions and viewing angles within the missile's flight envelop.

—Martha Simmons

measurements with physics-based numerical simulations to describe exhaust plume signatures at all conditions and viewing angles within the missile's flight envelop," said Simmons, AEDC section manager of instrumentation and diagnostics systems for the technology and analysis branch. "Warning sensor developers use these databases in test environments to determine if their sensor will detect the missile in time to deploy countermeasures and evade the threat."

Peg Taylor, the principal investigator and president of the SBIR company, PST, is impressed with AEDC and the collaborative effort with the ongoing project.

"PST personnel are frequent visitors to AEDC," she said. "We have always been impressed with the staff at AEDC. We have formed a close relationship with AEDC personnel over more than 20 years of working together on a variety of projects. We consider AEDC one of our best customers and partners."

Taylor said the project being conducted at AEDC will address a critical defense-related requirement.

"A key mission is the protection of military aircraft from attacks by man-portable air defense systems (MANPADS) and other hostile threats, including rocket-propelled

grenades (RPG) and small arms fire, which is of paramount concern to the Air Force," Taylor said. "Electromagnetic radiation emitted by the exhaust plumes of these threats is the primary observable detected by warning sensors. An understanding of dynamic exhaust plume radiometric signatures as flight conditions and sensor viewing orientations change throughout the threat engagement is critical for designing and testing missile warning sensors and countermeasures."

Simmons said, "It is ill-advised to actually fire missiles at aircraft to evaluate warning sensors. Therefore, realistic signals that replicate approaching

missile signature behaviors are fed to the sensor.

"Often the sensor evaluations are conducted in Hardware-in-the-Loop (HWIL) test facilities. The SBIR project at AEDC is developing a fast-processing technique that interrogates missile signature databases to extract continuous missile plume signatures used to evaluate sensors."

The databases developed prior to this project had to be generated at very fine increments to provide the resolution needed for continuous and smooth signature extractions.

"The databases were very large, expensive to generate, and the extrac-

tion process was slow and cumbersome," Simmons said. "In our application, the PST technique is used to morph measured and simulated plume images to quickly generate a continuous and smooth series of morphed images. The SBIR tool will allow us to greatly reduce the database size, while still providing continuous and smooth signatures at much faster extraction times."

This technology will increase the effectiveness of warning sensor testing and countermeasure development by providing accurate representations of hostile threat radiometric signatures in real time scenarios.

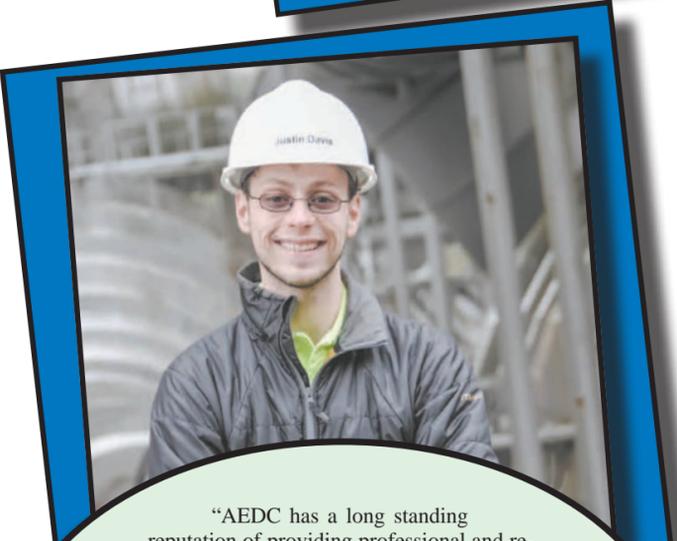
The AEDC SBIR Program is managed by Will Mallory, AEDC Test Technology Branch, with support from Dr. Robert Howard, ATA Technology and Engineering Analysis Branch, Instrumentation and Diagnostics.

“Why I chose AEDC”



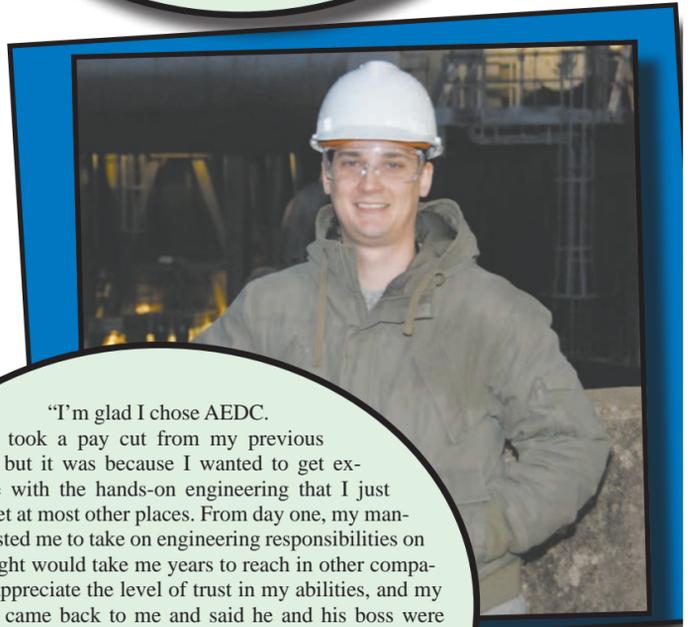
“I was drawn to AEDC simply by the technical diversity it had to offer in a job. Although my education is in mechanical engineering, I feel my job is more adequately described as a “technical problem solver” - no matter if the problem is related to aerospace, mechanical, electrical, computer, etc. I knew working at unique facilities such as turbine testing, rocket testing, wind tunnel testing - and more - was not a common opportunity as well. Having UTSI right down the road where I can pursue a PhD was also a huge plus. Most students eventually have to decide to either continue education or go to work. Here, at AEDC, we can do both. So the logic of making the choice was simple. First, I’m going to be working with nationally and globally unique facilities. I will also get to expand my knowledge into numerous fields and avoid boring redundancy. Plus, I will be getting my PhD while I work..... Sign me up!”

Chad Carpenter
Mechanical Engineer, ATA Integrated Test and Evaluation Hired 2013



“AEDC has a long standing reputation of providing professional and reliable aerospace testing for our military and commercial flight companies. I wanted to put my knowledge toward a venture that is making a scientific and progressive step toward the future. At AEDC I know that the work I do is helping our Air Force become the best that it can through the facilities I contribute to maintaining. I am also expanding my knowledge of engineering by working with highly experienced engineers.”

Justin Davis
Electrical Engineer, ATA Mission Support Hired 2014



“I’m glad I chose AEDC. I took a pay cut from my previous jobs, but it was because I wanted to get experience with the hands-on engineering that I just couldn’t get at most other places. From day one, my management trusted me to take on engineering responsibilities on a level I thought would take me years to reach in other companies. I really appreciate the level of trust in my abilities, and my manager even came back to me and said he and his boss were really impressed with how I was able to hit the ground running. Of course, it was due in no small part to them giving me the chance to show them what I’m capable of.”

Jesse Rhew
Electrical Engineer, ATA Information Technology and Systems Hired 2012

TARGETING OUR FUTURE
“Student Design Competition”
“Engineer for a Day” **MATHCOUNTS®**

ENGINEERS WEEK

2014

Engineers Week Banquet
Tuesday, Feb. 25, 2014
Manchester-Coffee Co. Conference Center
For Banquet Tickets and E-Week activities contact:
Harry Clark 454-4495
Paul Kelly 454-6542
John Jordan 454-4335
Jim Link 454-6093
Joe Wehrmeyer 454-4345
Bill Carpenter 393-6632



Guest Speaker: Andy Allen
Former Astronaut and Current
VP and GM for Jacobs Technology, Inc.
at Cape Canaveral



FLL
FIRST® LEGO® League

Feb. 15 - MathCounts Competition
8 a.m., at UTSI. Teams include Harris Middle School, Shelbyville; Highland Rim Elementary School, Fayetteville; East Middle School, Tullahoma; West Middle School, Tullahoma; Webb School, Bell Buckle; and Moore County Middle School, Lynchburg.

Feb. 18 - Student Design Competition
at the Hands-On-Science Center in Tullahoma

Feb. 19 - Engineer-for-a-Day
Students will tour AEDC, have lunch and then go with a mentor to observe engineers at work. Some students will stay at AEDC, others will visit companies in the local area.

For more information call 454-6542

Supplement to High Mach

Arnold Golf Course (GC)
454-GOLF, 454-FOOD

Check us out on Facebook! Arnold AFB Services Golf Course

Winter Green Fee Special through February 28, \$10 green fee for unlimited golf. Cart fee not included.

Hot dogs available in the Pro Shop Monday through Friday. These hotdogs are placed on the roller in the Pro Shop for your convenience. The hotdogs are \$1 each.

Mulligan's Grill is open 10:30 a.m. to 1:30 p.m. Monday through Friday and 8 a.m. to 1 p.m. Saturday and Sunday. Call ahead orders for dine in or carry out, 454-FOOD (3663).

Arnold
Lakeside Center(ALC)
454-3350

Check us out on Facebook! Arnold AFB Services Arnold Lakeside Center and Arnold AFB Services Information, Tickets and Travel

Brushes and Bottles will be held 6-8 p.m. at the GLC March 13, and again 6-8 p.m. at the GLC March 27. Bring your favorite beverage and get ready to get creative as an instructor will lead you through a canvas painting work of art step-by-step. By the end of the evening you will have your own masterpiece to take home. These painting parties are for all skill levels ages 21 and over with a cost of only \$25 per person. All paint, brushes, aprons, easels, canvas and other necessary materials will be provided. All you have to bring is your beverage of choice. Light snacks will be provided and other beverages will be available for purchase. Deadline to sign up for this event is March 7 and March 21. Class size is a maximum of 15. Call 454-3350 to sign up or for more information.

"3rd Day Free" ticket special offer for Universal Orlando is brought to you by ITT (Information, Tickets and Travel) at Arnold Lakeside Center. The 2-Day Base with 3rd Day Free Ticket entitles one guest admission to one theme park per day. Ticket is valid for any 3 calendar days during a 14 consecutive calendar day period which includes the first day any portion of the ticket is used. This ticket also includes 14 consecutive calendar days of admission to the paid entertainment venues of Universal City Walk which commences and includes the first day any portion of the ticket is used. First use of this ticket must be on or before May 9 to receive full benefit of the ticket entitlements. All ticket usage must be completed on or before May 22 when the ticket will expire in full. For complete details and to order tickets, call ITT at 454-4003.

Barber Shop is located in the A&E Building in room A107 and is open Monday, Tuesday, Thursday and Friday from 8 a.m. to 4 p.m. Haircuts are \$8 and are by appointment. Call 454-6987.

Café 100
454-5885

New menu items in Café 100: Try one of the new offerings brought to you by Café 100. The Philly steak or Philly chicken sandwich is \$6.50 and the Greek salad is \$4.50.

Daily \$6 specials in Café 100: Every Monday is Lasagna served with salad, garlic bread, and drink. Every Wednesday is Pulled Pork BBQ sandwich served with slaw, choice of chips or potato salad, and drink.

Café 100 Soup of the Day. Warm up with one of our daily soup selections.
Monday: Chicken Noodle
Tuesday: Loaded Baked Potato
Wednesday: Broccoli Cheddar
Thursday: Vegetable Barley Beef
Friday: Tomato

See BRIEFS, page H2

Jewelry Fair returns March 13 to Café 100



Arnold Lakeside Center welcomes back Pretty Discoveries for a jewelry fair in the A&E building, Café 100, from 8 a.m. to 2 p.m. All jewelry prices are below \$20 and they also carry belts and handbags.

Members Only Texas Hold 'em Mini Tournament Coming to ALC

Arnold Lakeside Center will host a Members Only Texas Hold 'em Mini Tournament every Tuesday that begins March 6 and lasts through May 22. Play will begin at 6 p.m. in The Landing bar. There is no cost to enter but all players must be age 18 or older. Players will be divided evenly among tables in random draw placement each week. The number of tables will be determined by the number of participants each week. Tables will be responsible for the deal at each table. Prizes will be given to top winners each week. First place wins \$20 Services bucks, second place wins \$15 Services Bucks, and third place wins \$10 Services bucks. Dinner is available every Thursday from 5-8 p.m.



ALC offers Saturday movie nights

Check Out New Select Saturday Movie Nights at ALC In addition to the family friendly movie nights on Thursdays at the ALC, we are pleased to offer a Saturday movie in The Landing bar for a more mature audience on select nights. While some of the movies may be rated PG-13, many of them will be rated R and because they are shown in the bar (unless otherwise noted), these movies are intended for adults (age 18 and over) only. The movies for March will be "Riddick" rated R on March 1, "The Family" rated R on March 8 shown in the Four Seasons room, and "Delivery Man" rated PG-13 on March 15. For complete movie details, including Thursday family movies, please see our movie section. Both Thursday and Saturday movies begin at 6:30 p.m. and dinner is available from 5-8 p.m. on Thursdays and 5-9 p.m. on Saturdays.

Have You Heard?

The Services offices, currently located in building 100, will now be located in the Arnold Village. Services administration, as well as the NAF accounting offices will now be located at Wingo Inn, along with the Outdoor Recreation employees. Wingo Inn will now be the hub for all overnight stays. The Services Marketing office will share building 3055 (previously known as the Outdoor Recreation building) with NAF Human Resources. We know this will take some getting used to, but should you have any questions, please contact a member of the Services team.

First Friday Jam Night March 7 at Arnold Lakeside Center

First Friday Jam will be held 6 p.m. March 7. Come to play, listen, dance and enjoy. Join in with the band to play an instrument or sing. Or take over and do your own performance. First Friday Jam is a very informal, stress-free, and kid friendly environment. If you would like to sing or play an instrument, please contact Jim "JJ" Jolliffe at jajolliffe@aol.com to get on the schedule, or simply show up with your instrument and/or singing voice. Room will be made for anyone wishing to perform. Dinner is available at the ALC from 5-8 p.m.

Pot 'O Gold Run Hosted by Fitness Center

The Fitness Center is hosting a Pot 'O Gold Fun Run on March 20. Participants must complete two laps around the Fitness Center trail anytime during normal duty hours. The first 25 to sign up receive a free t-shirt. Call 454-6440 for more information or to sign up.

Spring Fling Family Fun Daze at ALC

Arnold Lakeside Center will host a free Spring Fling Family Fun Daze event on Saturday, March 22. This event is open to all ages, where families will compete in events such as a frozen t-shirt contest, bed sheet ping pong, the quiet Olympics, feather blow, and a bean bag relay. A pizza buffet with iced brownies for dessert will be set up for guests to enjoy. The fun starts at 10 a.m. and ends at 2 p.m. You won't want to miss out on this family fun day! Call 454-3350 for more information or to reserve your spot.

Last Friday Trivia Contest March 28 at ALC

Trivia starts at 6:30 p.m. March 28 with questions in random categories. Teams may have up to four people. No cell phones are permitted during the event. Anyone using a phone while a question is underway will be disqualified. There are eight rounds with three questions per round. For rounds 1-4 teams have two, four and six points to wager per round. Rounds 5-8 teams will have four, eight and twelve points to wager per round. Only one point value may be used per question. For example, if you wager four points on the first question then you must choose either two or six points for the next question. Whichever value is left must be used for the final question in that round. After the eighth round, teams may wager up to their total points earned for the final question. Prizes are awarded for top finishers.



Horizon is a Services Division publication designed to inform our customers of events and specials in Services Division activities. All program dates, times and prices are subject to change. Services Division mailing address is at 100 Kindel Drive, Suite C321, Arnold AFB, Tenn. 37389-3321

Services information written and provided by Holly Jones

This Services supplement is published by *The Tullahoma News*, a private firm in no way connected with the U.S. Air Force, under exclusive written contract with Aerospace Testing Alliance (ATA). This supplement is an authorized publication for members of the U.S. military services. Contents of this supplement are not necessarily the views of, or endorsed by, the U.S. Government, the Department of Defense, the Department of the Air Force or ATA. Services is an exclusive area available to all AEDC personnel, active duty, retired military, National Guard, Reserve military and others as approved by the commander. Services activities include Wingo Inn (lodging), Arnold Lakeside Center (Club, Community Center, Information, Tickets & Travel (ITT), Barber Shop, Café 100), Outdoor Rec (Marina, FamCamp, Crockett Cove, Dogwood Ridge), Golf Course and Fitness Center. Those mentioned above are eligible to use any Services activity during regular operating hours unless it is specified as a "members only" event. Membership is a personal choice. However, only members are entitled to discounts and other benefits associated with membership.

Services Division Phone Numbers

Area code 931 DSN 340		
Services Chief	454-7779	Human Resources
Services Deputy	454-5915	Marketing & Sponsorship
Community Services Flight Chief	454-4062	Recycling
Café 100	454-5885	Wingo Inn
Arnold Lakeside Center (ALC)	454-3350	Fitness Center
Arnold Lakeside catering	454-3303	Golf Course
Membership Information	454-3367	Mulligan's Grill
Information, Tickets & Travel	454-4003	Outdoor Rec (ODR)
Gossick Leadership Center	454-4003	includes Marina, FamCamp, Crockett Cove & Dogwood Ridge
Barber Shop	454-6987	

March 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p style="font-size: 1.2em; color: #0070C0; margin: 0;">Dont miss Spring Fling Family Fun Daze March 22 at the Arnold Lakeside Center from 10 a.m. - 2 p.m. Games, food and fun for the whole family! Call 454-3350 to sign-up.</p>						<p>1 ALC Adults Only Movie Night - "Riddick," rated R; dinner available 5-9 p.m.</p>
2	3 FC Interval Class 6 a.m. ALC Café 100 Lasagna lunch special \$6 FC Yoga 11 a.m.	4 ALC AEDC Woman's Club FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m.	5 FC Interval Class 6 a.m. ALC Café 100 BBQ lunch special \$6 FC Yoga 11 a.m.	6 FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m. ALC Movie Night- "Thor: The Dark World," rated PG-13; dinner available 5-8 p.m. ALC Members Only Texas Hold 'em Mini Tournament, 6 p.m.	7 FC Interval Class 6 a.m. ALC First Friday Jam Night 6 p.m.	8 ALC Adults Only Movie Night - "The Family," rated R; dinner available 5-9 p.m.
9	10 FC Interval Class 6 a.m. ALC Café 100 Lasagna lunch special \$6 FC Yoga 11 a.m.	11 FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m.	12 FC Push up, Pull up, Sit up Competition, all day FC Interval Class 6 a.m. ALC Café 100 BBQ lunch special \$6 FC Yoga 11 a.m.	13 ALC Jewelry Fair, 8 a.m.- 2 p.m., café 100 FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m. ALC Movie Night- "The Hunger Games: Catching Fire," rated PG-13; dinner available 5-8 p.m. ALC Bottles and Brushes, 6-8 p.m., \$25, 454-3350 to sign up	14 FC Interval Class 6 a.m.	15 ALC Adults Only Movie Night - "Delivery Man," rated PG-13; dinner available 5-9 p.m.
16	17 FC Interval Class 6 a.m. ALC Café 100 Lasagna lunch special \$6 FC Yoga 11 a.m.	18 FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m.	19 FC Interval Class 6 a.m. ALC Café 100 BBQ lunch special \$6 FC Yoga 11 a.m. FC Equipment Demo, 11 a.m.-noon, café 100	20 FC Pot 'O Gold Run FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m. ALC Movie Night- "Saving Mr. Banks," rated PG-13; dinner available 5-8 p.m.	21 FC Interval Class 6 a.m.	22 ALC Spring Fling Family Fun Daze, free for all ages, 10 a.m.-2 p.m. 454-3350 to sign up
23	24 FC Interval Class 6 a.m. ALC Café 100 Lasagna lunch special \$6 FC Yoga 11 a.m.	25 FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m.	26 FC Interval Class 6 a.m. ALC Café 100 BBQ lunch special \$6 FC Yoga 11 a.m.	27 FC Cycling Class 11 a.m. FC Interval Class 3:30 p.m. ALC Movie Night- "The Hobbit: The Desolation of Smaug," rated PG-13; dinner available 5-8 p.m. ALC Bottles and Brushes, 6-8 p.m., \$25, 454-3350 to sign up	28 FC Interval Class 6 a.m. ALC Last Friday Trivia, 6:30 p.m.	29
30	31					

Hours of operation

Arnold Lakeside Center: Catering/Management offices by appointment. Operations Clerk Monday- Friday 7:30 a.m.-4 p.m. Dinner: full menu available Thursday 5-8 p.m., Friday and Saturday 5-9 p.m.; Main Bar Thursday 5-8 p.m., Friday 4-10 p.m. and Saturday 5-9 p.m.; Social Hour Friday 4-6 p.m., Movie Night Thursday 6:30 p.m. **CLOSED Feb. 17**

Information, Tickets & Travel (ITT): Office at Arnold Lakeside Center - Tuesday through Friday 10 a.m. - 3 p.m. except for Tuesday and Wednesday remote office in Café 100 10:30 a.m. - 1 p.m. **CLOSED Feb. 17**

Café 100: Monday through Friday 6:30 a.m. - 1 p.m. Lunch starting at 10:30 a.m. **CLOSED Feb. 17**

Barber Shop: by appointment - Monday, Tuesday, Thursday & Friday 8 a.m. - 4 p.m. **CLOSED Feb. 17**

GLC (office located at Arnold Lakeside Center): Monday through Friday 7:30 a.m. - 4 p.m. May vary depending on bookings. **CLOSED Feb. 17**

Outdoor Rec: Tuesday through Saturday 10 a.m. - 5 p.m.

Fitness Center: Monday-Friday 5 a.m.-7:30p.m.; Saturday 8 a.m.-1 p.m.; Sunday Closed. **OPEN Feb. 17; 5 a.m.-6 p.m. classes as scheduled.**

Arnold Golf Course: Pro Shop & Driving Range 8 a.m. - 4:30 p.m. Closed during inclement weather. Driving Range open 24 hours with prepurchased key card. Mulligan's Grill Monday through Friday 10:30 a.m. - 1:30 p.m., Saturday and Sunday 8 a.m. - 1 p.m.

Recycling: Monday through Friday 6 a.m. - 2:30 p.m. **CLOSED Feb. 17**

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

Nonappropriated Funds Human Resources: Monday through Friday 7:30 a.m. - 4 p.m. **CLOSED Feb. 17**

BX/Commissary customer eligibility

AEDC government civilian and AEDC contractor employees have access to the following limited items at the base exchange (BX): consumable items including toiletries and over-the-counter pharmaceuticals, food items such as candy, chips, little meal items, hot dogs and soft drinks. Alcohol and cigarettes are not included as consumable items. However, only active duty and retired uniformed services personnel and their dependents are eligible to use the base commissary next to the BX. The commissary hours of operation: Tuesday, Wednesday and Friday 9 a.m.-5:30 p.m., Thursday 9 a.m.-6:30 p.m. and Saturday 8 a.m.-4:30 p.m. The BX hours of operation: Tuesday through Friday 9 a.m.-5:30 p.m., and Saturday 8 a.m.-4:30 p.m. For more information contact Christopher Floden, BX manager, at (931) 454-7153 or Patrick Jordan, Commissary manager, at (931) 454-5921.

AAFES Dividends
Dividends generated from the Army and Air Force Exchange Service (AAFES) overall earnings are a major contributor to Services nonappropriated fund (NAF) construction and renovation projects as well as equipment purchases. Services would like to thank all AAFES customers for their support. Dividends received for January 2014 totaled \$5,531.95.

BRIEFS from page H1

<p>Fitness Center(FC) 454-6440</p> <p>exercise routines. Call 454-6440 for more information.</p> <p>Group Class Schedule: (for eligible users only) Cycling: Tuesday and Thursday 11a.m.-12 p.m. Yoga: Monday and Wednesday 11 a.m.-12 p.m. Interval/Circuit Training: Monday, Wednesday and Friday 6-7 a.m.; Tuesday and Thursday 3:30-4:30 p.m.</p>	<p>If you want more options for classes, then try the Fitness on Request (FOR) kiosk. The kiosk provides virtual instructors leading exercises in areas such as Vibe Dance, Fusion Mind Body, Fit for Duty, Rev Cycling, TKO Kickboxing, Stomp Step and Kinetics. FOR can accommodate individuals or groups and is available any time during regular hours. Ask about kiosk orientation and scheduling.</p>	<p>Outdoor Rec (ODR) 454-6084</p> <p>Check us out on Facebook! Arnold AFB Services Outdoor Recreation</p> <p>Winter Rates now available at FamCamp. RV sites at FamCamp will be \$12 per night, and \$300 per month, and tent sites will be \$4 per night. These rates will continue through May 1.</p>
<p>Check us out on Facebook! Arnold AFB Services Fitness Center</p> <p>Fitness Center equipment demo March 19 in Café 100 from 11 a.m.-noon. Stop by the café and have a member of the Fitness Center staff share equipment demonstrations and ex-</p>	<p>Teambuilding Facilitation available through Outdoor Rec. Book your team building event at least two weeks in advance and customize your activities to include leadership, communication, trust, conflict resolution and more. Our kit has 289 activities and can serve up to 120 participants. Large group challenges can accommodate up to 60 people. This equipment must be facilitated by an Outdoor Rec staff member and is not available for rent for private use. Department of Defense organizations may utilize the program for free. All others have the option of half day (4 hours) for \$50 or full day (8 hours) for \$100. Call to find out more information or book your team building event.</p>	<p>Outdoor Rec inflatables! There is an assortment of inflatables for almost everyone's needs. We have a huge backyard obstacle</p>

BRIEFS from page H2

challenge measuring 40'L x 10'W x 13'H, and a double lane jump slide for only \$150 per day. We also have a giant basketball hoop for \$30 per day and a Rocket Bounce House for \$75 per day. If you need a water slide then our 18' Double Drop Wet/Dry slide will be great for any event and is only \$150 per day. Please contact Outdoor Recreation at 454-6084 to make your reservation today!

Did you know ODR now has disc golf? Disc golf is a flying disc game in which individual players throw a flying disc at a target. Much like golf, the object of the game is to traverse a course from beginning to end in the

fewest number of throws of the disc. The ODR course targets are portable so course location may change. Initial plans are to begin in the softball outfield behind the ODR building. Players may play for free with their own discs or rent discs from ODR for \$1 each. There are different sizes and weights of discs much like different clubs in golf to better serve the needs of the target desired. For more information on disc golf call ODR at 454-6084.

Reservation Policy: FamCamp, Crockett Cove and Dogwood Ridge reservations may be made 45 days in advance for active duty and reserve military,

40 days for retired military, and 30 days for all other qualified personnel. Boat reservations may be made 15 days in advance for active duty and 10 days for other eligible individuals. All reservations are made through the Outdoor Recreation by stopping by or calling 454-6084.

**Wingo Inn
454-3051**

Check us out on Facebook! Arnold AFB Services Wingo Inn

If you have **family and friends visiting** and need extra space then call Wingo Inn. Reservations for Wingo Inn can be made 120 days in advance and room rates start at \$56 per night. Call 454-3051 for reservations and more information.

**Gossick Leadership Center
454-4003**

Check us out on Facebook! Arnold AFB Services Gossick Leadership Center

The **Gossick Leadership Center (GLC)** may be used for events such as meetings, conferences, luncheons, dinners, etc. and is booked through the Services Conference Center Manager (CCM) up to one year in advance. Requests must be made in writing by email to arnold.glc@arnold.af.mil. All event coordinators are required to sign an agreement. Official unit functions are authorized at no charge and are defined as bona fide official meetings or training held as part of the normal duty day. Unof-

ficial and private functions may be held for authorized users at a fee. Community members may host events with the approval of the Services Director for a fee. Outside food and beverages are not allowed. First consideration must be given to Arnold Lakeside Center. In the event they cannot accommodate, an outside source may be utilized with CCM approval. For more information contact the CCM at 454-4003.

**AEDC Woman's Club
393-2552**

The January meeting of the AEDC Woman's Club was cancelled because of bad weather, so the program is reschedule for the March 4 meeting at the Arnold Lakeside Center. This will be a won-

derful program hosted by the Tennessee Centennial Exposition to commemorate Tennessee's 100th anniversary of statehood. Libby Lacock will speak and show pictures of the Exposition, including the Parthenon, statuary, Centennial Park and several gardens.

The social hour starts at 9:30 a.m. with the business meeting and program at 10 a.m. Reservations and cancellations must be made no later than noon, Feb. 25. You may make reservations or cancellations by contacting Liz Jolliffe at 931-393-2552 or jajolliffe@aol.com or Jane Ricci at 931-636-4152 or dickanjane@comcast.net. Hope to see you there!

Disclaimer: This is a private organization which is not part of the Department of Defense or any of its components and has no governmental status.

The Services insert to the High Mach is designed to inform our customers of events and specials in Services activities. All program dates, times and prices are subject to change.

March Movie Schedule

Movie nights are Thursdays (family themed) with movie start time of 6:30 p.m. and dinner available from 5-8 p.m.

March 6 – "Thor: The Dark World," rated PG-13 (1 hr. 52 min.) starring Chris Hemsworth, Natalie Portman, and Tom Hiddleston. When Jane Foster is possessed by a great power, Thor must protect her from a new threat of old times: the Dark Elves.

March 13 – "The Hunger Games: Catching Fire," rated PG-13 (2 hr. 5 min.) starring Jennifer Lawrence, Josh Hutcherson, and Liam Hemsworth. Katniss Everdeen and Peeta Mellark become targets of the Capitol after their victory in the 74th Hunger Games sparks a rebellion in the Districts of Panem.

March 20 – "Saving Mr. Banks," rated PG-13 (2 hr. 24 min.) starring Emma Thompson, Tom Hanks, and Annie Rose Buckley. Author P.L. Travers reflects on her childhood after reluctantly meeting with Walt Disney, who seeks to adapt her Mary Poppins books for the big screen.

March 27 – "The Hobbit: The Desolation of Smaug," rated PG-13 (2 hr. 41 min.) starring Ian McKellen, Martin Freeman, and Richard Armitage. The dwarves, along with Bilbo Baggins and Gandalf the Grey, continue their quest to reclaim Erebor, their homeland, from Smaug. Bilbo Baggins is in possession of a mysterious and magical ring.



Rated "R" movie nights are select Saturdays in The Landing with movie start time of 6:30 p.m. This movie night is for adults only. Attendees must be 18+.

March 1 – "Riddick," rated R (1 hr. 59 min.) starring Vin Diesel, Karl Urban, and Katee Sackhoff. Left for dead on a sun-scorched planet, Riddick finds himself up against an alien race of predators. Activating an emergency beacon alerts two ships: one carrying a new breed of mercenary, the other captained by a man from Riddick's past.

March 8 (in the Four Seasons room) – "The Family," rated R (1 hr. 51 min.) starring Robert De Niro, Michelle Pfeiffer, and Dianna Agron. The Manzoni family, a notorious mafia clan, is relocated to Normandy, France under the witness protection program, where fitting in soon becomes challenging as their old habits die hard.

March 15 – "Delivery Man," rated PG-13 (1 hr. 45 min.) starring Vince Vaughn, Chris Pratt, and Cobie Smulders. An affable underachiever finds out he's fathered 533 children through anonymous donations to a fertility clinic 20 years ago. Now he must decide whether or not to come forward when 142 of them file a lawsuit to reveal his identity.

Movies are shown at the Arnold Lakeside Center

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