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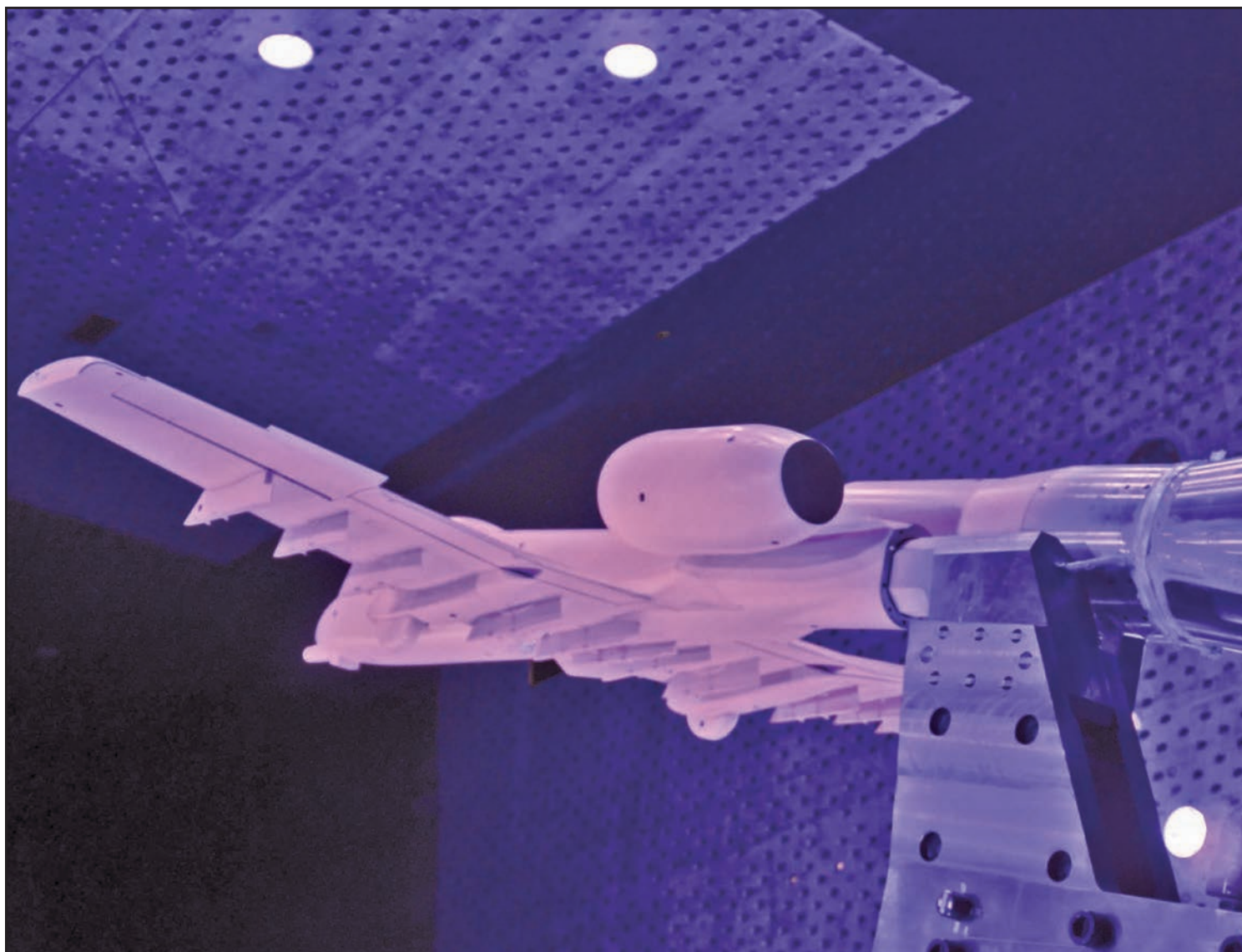


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May 27, 2014

A-10 'Warthog' tested in 16-T



A model of an A-10 Thunderbolt II, more commonly known as "The Warthog" due to its unique shape, recently underwent a pressure-sensitive paint (PSP) test in AEDC's 16-foot transonic wind tunnel. PSP was used to obtain surface pressure data on the model. The photo above shows a rear view of the A-10 model during testing in 16T. The A-10 is the only U.S. Air Force aircraft designed to be specifically used for close air support. The aircraft is notorious for its maneuverability at low speeds and low altitudes and its accurate weapons delivery. (AEDC Photo)

Plans being finalized for 2014 Cruise-In

By Deidre Ortiz
ATA Public Affairs

Planning for the third annual Cruise-In at AEDC is currently underway.

AEDC personnel coordinating the event have decided on May 30 as the primary date and have scheduled a rain date of June 6.

The Cruise-In will once again be held in the Engine Test Facility (ETF) Annex parking lot. Cars will be on display from 11 a.m. to 12:30 p.m., and burgers and hot dogs will be for sale during the event courtesy of the Sergeant's Association and the Company Grade Officers.

Dr. Ralph Jones, Cruise-In coordinator, stated at least 20 vehicles had registered within the first week of announcing this year's event.

Jones added the Cruise-In is much anticipated by car enthusiasts on base, and one can always expect to see a diverse collection of cars such as classic hot rods and muscle cars, trucks, current day luxury/performance vehicles and motorcycles.

In addition to the participating vehicles, coordinators hope to have another unique display. According to Jones, organizers are working to arrange a display of the winning "rat rod" from the recent Discovery Channel show, *Rebel Road*.

Cameras are allowed at the event but attendees should ensure their badges aren't visible while in the display area. Attendees should be mindful of the Complex's rules on photography of prohibited facilities, hardware or materials. No photography will be permitted outside the ETF Annex parking lot.

Family members are invited to visit the base and attend the event. In addition to the Cruise-In, tours will be provided by ATA Public Affairs. Anyone interested in touring can meet at the white AEDC bus that will be located in the ETF Annex parking lot. The first tour will start at 11:15 a.m. and end at 11:45 a.m. The second tour will be from 12 - 12:30 p.m. For more information about tours call 454-5655.

Employees are asked to have family members park at the Visitor's Center parking lot, where they will pick them up. Should the parking lot fill up, visitors will be directed to park in the Fitness Center parking lot.

Employees must accompany their family members while within the mission area. Family members will not need a badge or to be vetted through Pass & ID.

More details on the 2014 Cruise-In will be made available through the Team AEDC Share-Point site. Anyone with questions about the event may call 454-6876.

AEDC's Mary Fedde dives with the sharks for STEM

By Raquel March
ATA Public Affairs

Many AEDC personnel make sacrifices to volunteer with Science, Technology, Engineering and Mathematics (STEM) programs. But how many people would swim with sharks to foster a young person's fascination with science?

Mary Fedde, a physicist in the ATA Integrated Test and Evaluation Department, swims with the sandbar sharks and sand tiger sharks as a volunteer diver at the Tennessee Aquarium's Ocean Journey Secret Reef tank in Chattanooga. The program in which Fedde volunteers gives youth an overview of the different inhabitants of fresh water, coastal waters and open oceans.

"They have a lot of programs for kids like the Keeper Kids programs that they run during the summer and over school



Mary Fedde, an AEDC physicist and a Tennessee Aquarium volunteer diver, takes her turn diving in the Ocean Journey Secret Reef tank. She waves "hello" to the aquarium visitors on the other side of the glass. (Photo provided)

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AEDC adds Jet-A fuel to turbine engine testing

By Raquel March
ATA Public Affairs

The AEDC fuel farm is replacing JP-8 fuel, used by turbine engine testing customers in the Complex's aeropropulsion test facilities, with commercial grade Jet-A fuel.

Jet-A is a kerosene-based

aviation fuel that has a different freezing point characteristic.

"The main difference between JP-8 and Jet-A is the fuel freezing point specification," said Gary Chain, a terminal manager in the ATA Utilities and Engineering Services Branch. "Jet-A has a higher fuel freeze point specification limit than

JP-8 - minus 40 degrees Celsius for Jet-A versus minus 47 degrees Celsius for JP-8."

JP-8 fuel contains a military additive package (MAP) that isn't a part of the Jet-A fuel composition. However, the MAP will be added for AEDC customers.

Chain said there is an ongoing

study within the Department of Defense (DOD) and Air Force Petroleum Agency to determine what additives are still required for which airframe and in what quantities.

The additives contained in the MAP limits static buildup

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HIGH MACH

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An Air Force Materiel Command Test Complex

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- Align with customer goals and objectives
 - Use disciplined and innovative processes
- Continually improve in all that we do

Raabe reminds cyclists, helmets are for safe cycling

By Jim Raabe
AEDC Contributing Writer

Allow me to set the stage for this successful safety story.

Two couples set out for a leisurely and social bicycle ride down a local country road. One couple was experienced with bicycling and the other couple was considered novice. The experienced couple wore helmets, gloves, riding glasses, bright colored riding apparel and cycling shoes. The other couple did not wear helmets.

They were all riding their own bicycles. The husband of the experienced couple had begun cycling at an early age and had more than four years of recent experience as a serious cyclist, so he was designated the lead.

While piloting the group on a beautiful, sunny Tennessee afternoon, the lead cyclist encountered a pack of dogs running alongside and barking at him. He slowed down to about 15 mph but before he could react any further one large dog cut across his path and the bike struck the dog in the chest area. While the lead has a different recollection of what happened after that, the witness stated his front wheel was forced to turn 90 degrees right and the lead was thrown to the ground. The lead struck the back of his head on the concrete road cracking his helmet in several places. The helmet did what it was designed to achieve and that was saving the lead cyclist's cranium.

When interviewing the lead cyclist I asked, "Did you notice any initial head pain or experience a headache afterwards?" He responded, "No, not at all." He didn't even know the helmet received irreparable damage until the cyclist behind him informed him of the damage.

He knew then the helmet prevented a serious injury or maybe even saved his life. As a result of this event, the inexperienced couple professed to using helmets whenever cycling and the die-hard experienced lead cyclist lived to ride another day.

According to the National Safety Council (NSC) an estimated 73 to 85 million Americans ride bikes ranging from high performance, 18-speed, touring models to dirt-bikes equipped with balloon tires, and dozens of variations in between.

With millions of cyclists on the roads – the same roads occupied by millions of motor vehicles that are larger, heavier and faster than bikes – the NSC believes that defensive driving applies to people who pedal with their feet to travel, as well as those who push on the gas pedal.

Approximately 800 bicy-

clists were killed and more than 540,000 visited the emergency room with injuries in 2010. More bicyclists are on the roads today, increasing the chances of injury. Taking precautions in traffic and wearing protective equipment is a cyclist's best shield against unintentional injuries.

The NSC offers the following tips for safe and enjoyable bicycling:

- ✓ Obey traffic rules. Get acquainted with local ordinances. Cyclists must follow the same rules as motorists.
- ✓ Know your bike's capabilities. Remember that bicycles differ from motor vehicles; they're smaller and can't move as fast. However, they can change direction more easily, stop faster and move through smaller spaces.
- ✓ Ride in single file with traffic, not against it. Bicycling two abreast can be dangerous. Bicyclists should stay as far right on the pavement as possible, watching for opening car doors, sewer gratings, soft shoulders, broken glass and other debris. Remember to keep a safe distance from the vehicle ahead.
- ✓ Make safe turns and cross intersections with care. Signal turns half a block before the intersection, using the correct hand signals (left arm straight out for left turn; forearm up for right turn).
- ✓ Never hitch on cars. A sudden stop or turn could send the cyclist flying into the path of another vehicle.
- ✓ Before riding into traffic: stop, look left, right, left again, and over your shoulder.
- ✓ Be seen! During the day, cyclists should wear bright clothing and retro reflective clothing at night.
- ✓ Make sure the bicycle has the right safety equipment: a red rear reflector; a white front reflector; a red or colorless spoke reflector on the rear wheel; an amber or colorless reflector on the front wheel; pedal reflectors; a horn or bell; headlight and a rear view mirror.
- ✓ Wear a helmet! Head injuries cause about two-thirds of all bicycling fatalities. The Council strongly urges all cyclists to wear helmets. The first body part to fly forward in a collision is usually the head, and with nothing but skin and bone to protect the brain from injury, the re-



Figure 1: Top view of bicycle helmet – no apparent damage. Figure 2: Aft interior of bicycle helmet shows cracked foam insulation where impact to head occurred. Figure 3: Aft exterior of bicycle helmet shows cracked foam insulation and damaged plastic where impact to head occurred. (Photos provided)

sults can be disastrous.

It's also important to know and understand rules of the road for cyclists who ride on Air Force installations. Air Force Instruction (AFI) 91-207, *The U.S. Air Force Traffic Safety Program, Air Force Materiel Command Supplement* dated Feb. 11, 2014 applies to all persons (with some Security Forces exceptions) who ride a bicycle, tricycle, or other human powered vehicle, including motorized bicycles, on an Air Force installation roadway, to include flight lines.

They will:

- ✓ Wear a highly visible outer garment during the day and outer garment containing retro-reflective material at night.
- ✓ Bicyclists must wear retro-reflective high visibility outer garments when riding during periods of inclement weather.
- ✓ Bicycle riders will ride single file on installation roadways.

- ✓ Wear a properly fastened, approved (e.g., Consumer Product Safety Commission, American National Standards Institute, Snell Memorial Foundation or host nation equivalent) bicycle helmet.

- ✓ Ensure bicycles are equipped with a white front light visible for 500 feet and red reflector or light clearly visible from the rear for 300 feet. (Also required by the Tennessee Department of Transportation)

Furthermore, the use of any listening and entertainment devices (other than hearing aids) while bicycling, walking, jogging or skating on Air Force roadways is prohibited. Use of listening devices impairs recognition of emergency signals, alarms, announcements, approaching vehicles, human speech and outside noise.

There is no limit to the fun and exercise gained from bicycling. Applying these tips and requirements will give riders safer trips and a greater peace of mind.

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



Arcs Test Team receives Technical Achievement Award

AEDC's Arcs Test Team was presented a Technical Achievement Award for its originality, creativity and innovation in completing a recent test in the H2 arc heater facility. The team created and successfully implemented a new test method for stagnation coupon testing based on interfaces already available at AEDC, which minimized costs to the customer by using remaining project resources to reduce future risk. AEDC Commander Col. Raymond Toth (second from left, front row), AEDC Executive Director Dr. Douglas Blake (far left, second row) and AEDC Chief Technologist Dr. Edward Kraft (far right, second row) were on hand to present this award to the Arcs Team and congratulate the group on a job well done. (Photo by Deidre Ortiz)

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breaks where children can learn about the animals and what is necessary to responsibly care for them," Fedde said.

The Keeper Kids programs offer children in kindergarten to 12th grade activities such as learning about sharks, going behind the scenes with scuba divers or recording penguin observations.

Fedde became a Tennessee Aquarium volunteer diver in 2007. Her diving duties range from cleaning and feeding to conducting a show. Cleaning and feeding dives last 45 minutes to one hour, while a show may only take 15-20 minutes.

"Each dive team has six members and each team is on a 28-day rotation," she said. "We do two to three dives before lunch then one or two more [dives] after lunch.

"About an hour before the aquarium opens for the day, five divers enter the Ocean Journey Secret Reef tank to scrub about a quarter of the tank and to wipe down the windows. Three divers will do the scrubbing and window cleaning while the other two [divers] in the water will be the shark guards. The sixth team member remains topside as our safety surface support."

When a portion of the cleaning dive is complete, the team splits into two groups of three people to perform the dive show and cleaning for other tanks such as the fresh water tanks Nickajack Lake or River Giants.

"The dive show team will do four shows," Fedde continued. "One diver wears a surface supplied full-face mask that is rigged with a microphone and speakers; that diver will speak



AEDC physicist Mary Fedde, also a certified diver, exits one of the tanks at the Tennessee Aquarium after a dive. (Photo provided)

to the educator on the other side of the [tank] window. A second diver will be the guard diver to steer the sharks away from the other [speaking] diver. The third diver controls the show diver's microphone and monitors his or her air tanks."

The sharks in the tank aren't aggressive. But due to the speaking diver's limited vision while wearing goggles, the diver may be startled by the sharks' close swimming proximity.

Fedde recalls a too close encounter at the aquarium when she was "bitten by the mean queen triggerfish." The queen triggerfish has teeth which they

use to eat urchins. They inhabit the coral reefs in the western Atlantic Ocean and the Gulf of Mexico.

To become a volunteer diver at the aquarium, the volunteer must be a certified diver, complete a written exam and pass a water skills test.

Her advice to anyone thinking about volunteering as a diver at the aquarium is, "If you're a certified diver and you meet the minimum requirements, then go online and sign up." Potential volunteers may find volunteer diver information for the Tennessee Aquarium at <http://www.tennesseeaquarium.org/>

GetInvolved/VolunteerOpportunities/VolunteerDiver.aspx.

Fedde, a certified diver since 1999, described her experience with acquiring certification.

"I went to the local dive shop and signed up for class," she said. "My Basic Open Water certification took only two weekends to complete. The course consisted of classroom work, learning and practicing skills in a pool and then four open water training dives. I have completed many other certifications since then such as Advanced Open Water, Rescue Diver, Tec Deep Diver and Assistant Instructor."



Fedde's diving knowledge has taken her to dive in the Gulf of Mexico and Bonaire, a Caribbean island.

She said, "I will be taking a Caribbean cruise and plan to dive in Belize. There are many more places around the world that I want to dive someday such as the Great Barrier Reef and islands in the Pacific."

Scan the QR code in this story using a smart phone to view a video of volunteer divers at the Tennessee Aquarium.

TESTING from page 1

in fuel, inhibits icing and microbiological growth, eliminates corrosion, reduces friction, prevents peroxide formation in stored fuel and improves thermal stability.

The fuel transition is nearing completion and has the potential to save the DOD more than \$40 million annually in fuel costs. Savings may be seen in product and handling costs due to better access and use of commercial pipelines.

"We...have been making the conversion to Jet-A for several months," Chain said. "At the present time we have one [turbine engine test] cell that is continuing to use JP-8. At the completion of this test, AEDC will no longer be receiving or using JP-8 as its primary test fuel."

AEDC may use an excess of five million gallons of aviation fuel this fiscal year.

The Complex's fuel farm has the ability to provide multiple fuels such as Iso-Paraffinic Kerosene, Camelina, Tallow, JP-4, JP-5, JP-8 and F-76. The fuels can be distributed to multiple test cells simultaneously.



Robert Holley (left), from the AEDC Fuel Farm, and Carl McGee, with the AEDC Aeropropulsion Systems Test Facility, discuss a work instruction and a safe plan of action prior to bringing up fuel pressure for a fuel system leak check utilizing Jet-A fuel. (Photo by Jacqueline Cowan)

AEDC Legal Office provides legal name change advice

By Frank Turner
AEDC Contributing Writer

Changing your name or your child's name legally and permanently is not just a matter of signing it differently from now on. Nearly all states require that you go through a formal, legal process to effect the change, as defined by each state's laws.

Changing your name

Most states begin by requiring you to file a petition for a change of name in the county courthouse of the state and county in which you are a legal resident. Part of a typical application for this change will be a section asking you to give the reason for the request.

Usually a petition can only be denied for "good cause," such as the applicant having a criminal or bankruptcy record. After payment of the processing fee, appearance in court is not normally required, and you will be notified some time later that the change is official. In some states, your proposed name change must be published in the Legal Notices Section of the local newspaper.

In Tennessee, Tennessee Code Annotated, Section 29-8-101, governs requests by individual adults to change their own names or correct errors on their birth certificates. It states that the individual may file

their petition in either the Circuit or the Chancery (Probate) Court of their home county. The request will generally be granted unless the court finds that the name change is requested in bad faith for the purpose of defrauding or misleading others (such as creditors), is likely to cause injury or may endanger public safety. If the petitioner has a felony record, then the court presumes that the request is made in bad faith and it would then be up to the petitioner to prove to the court that the request is not made for the purpose of defrauding or misleading anyone. Furthermore, anyone who has been convicted of first or second degree murder or of any offense requiring them to register as a sex offender shall not have the right to change their name.

However, that statute does not affect name changes as a result of marriage or divorce. A woman is entitled to assume the surname of her husband by virtue of a lawful marriage. Likewise, if a woman going through a divorce wishes to revert back to her previous or maiden name, then she should simply ensure that the final decree of divorce reflects that change.

Once you officially receive your new name, you must immediately assume it. This entails perhaps the hardest part

of the process. You must change all legal documents that reflect your old name, such as your driver's license, voter registration, credit cards, social security number, etc.

Changing your child's name

There is an added step required when you seek to have your child's name changed. In some states, you must always seek the other biological parent's permission. While in other states, you need only seek such permission if you were previously married to the other parent. If

after a reasonable effort you are unable to locate the other parent, you can normally proceed without the approval. Even when the other parent refuses to give the permission to have the child's name change, it may still be ordered by the court under certain circumstances.

In Tennessee, if a child is born during marriage, the child will have the surname of the husband/father (even if the man is not the actual biological father), unless the parents both agree that the child will have the mother's name or a combination of the two.

However, if the parents were never married, the child will have the mother's surname and the father does not have the right to insist on the child having his surname, even if he acknowledges paternity and has court-ordered visitation. A father in that situation, who wishes the child to have his surname, must petition the court to order the child's name change and must present sufficient evidence to the court to prove that it is in the child's "best interest" to have his surname instead of the mother's.

Of course, this does not apply in the case of

an adoption. In that case, the biological parents' right to the child will have been terminated and the adoptive parents have the right to give the child their surname. Such a name change need only be reflected in the Final Order of Adoption. The parents should then send a certified copy of the order along with an application for a new birth certificate and processing fee to the Tennessee Office of Vital Records.

Any questions regarding this topic or other legal assistance issues can be directed to the AEDC Legal Office at 454-7814.



AS AN AIR FORCE CIVILIAN, WHERE CAN I FIND HELP?

We all face challenges, but we don't have to face them alone.

IF YOU NEED HELP WITH...

TRY THESE AGENCIES & THEIR RESOURCES

ALL EMPLOYEES

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National Suicide Prevention Lifeline

(800) 273-8255

American Association of Poison Control Centers

(800) 222-1222

Centerstone

(931) 461-1300

Mental health & substance abuse

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(931) 728-6440

Unplanned pregnancy

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Auburn and Air Force win AFRL Collegiate and Service Academy Design Competition



Auburn University Team accepts first place at the third annual Air Force Research Laboratory Collegiate and Service Academy Engineering Design Competition. Team members shown left to right are John Bissell, Kameron Braxton, Luke Hasha, Travis Campbell, Matthew Park and Morgan Allison. (Photo by Rick Goodfriend)



The Air Force Academy accepts the Service Academy Team Award at the third annual Air Force Research Laboratory Collegiate and Service Academy Engineering Design Competition. Team members shown on the front row, left to right are: Cadet 1st Class Jake Risma, Cadet 1st Class Jason Hodges, Cadet 1st Class Rebecca Bauman and Cadet 1st Class Max Jones; back row, left to right: Capt. Mike Knauf, Cadet 1st Class Kevin Tanous, Cadet 1st Class Mark Jensen, Cadet 1st Class Alex Pecci, Cadet 1st Class Will Fleming, Dr. Daniel Jensen and Cadet 2nd Class Kenner Roberts. (Photo by Jacqueline Cowan)

By Elmer Standridge
AEDC Contributing Writer

Seventeen universities and three service academies came together for the third annual Air Force Research Laboratory Collegiate and Service Academy Engineering Design Competition April 14-17 at AEDC.

The competition revolves around an engineering challenge each year, aimed at fostering innovative and creative solutions from the Mechanical Engineering Departments at Arizona State University, Auburn University, Brigham Young University, Colorado State University, Johns Hopkins University, Michigan Technological University, Ohio State University, Texas A&M University, University of Akron, University of Dayton, University of Minnesota Duluth, University of North Carolina at Charlotte, Utah State University, Purdue University, Wright State University, Tennessee State University, Prairie View A&M University, The Air Force Academy, The Naval Academy and The United States Military Academy.

This year's challenge centered on a problem routinely faced by U.S. Air Force pararescuemen and other military units. The weight of armored vehicles and frequent encounters with improvised explosive devices or damage from combat operations occasionally requires that these up-armored vehicles be lifted in order to rescue fellow soldiers pinned or trapped inside. These heavy lift devices are also routinely used in rescue from collapsed structures or downed aircraft.

Student teams were tasked with producing a single-man-portable solution that would effectively lift a 45,000-pound vehicle sufficient to retrieve trapped personnel.

In the university competition Utah State came in as a heavy favorite after sweeping the competition in each of the previous two years, and true to form, their entry showed the effect of early and frequent field testing prior to the competition.

Across all entries, it was very apparent where teams had completed their designs early enough to test and iteratively optimize the performance of

their devices. The results clearly reinforce the mantra of innovative design "fail early, fail fast, fail often," as these cycles of contact between proposed solutions and the real world force teams to challenge assumptions about the problem and drive improvements in the eventual solution.

Even for those teams that had accumulated some test experience with their entries, the real world proved to be a further challenge.

Devon Parker, a senior Air Force mechanical engineer at AEDC, was the host and manager for the national competition on behalf of the Air Force Research Laboratory. In addition to managing the competition, he provided regular feedback to the design teams throughout the academic year during design reviews. While this was designed principally to ensure the teams fully understood the problem, it also allowed him to ensure the trial phase conducted at AEDC could safely accommodate all of the various design entries during demonstration.

The challenge Parker set up at AEDC was a 40,000-pound bulldozer resting angled on an incline deep within the Tennessee Guard Volunteer Training Site at Arnold Air Force Base.

The competition and the teams were supported by a number of experienced Air Force pararescuemen from around the country – who performed work under the load for the student teams, as instructed by the respective student team leader. The dozer was stabilized against any significant shift during lifting by a 55-ton crane to take up the load if required. The crane was manned at all times during the competition by an expert operator and lifting supervisor from ATA.

To prevent shifting down the slope, the Army National Guard provided a heavy combat wrecker and a crew from Elizabethton, Tenn. To prevent possible injury due to unexpected flying debris from a failure, the Coffee County Central High School machining class built a number of polycarbonate shields that would allow viewing of the testing while providing a shatterproof barrier in the unlikely event of a problem.

Since the event was

conducted in the field and there was no time for meal breaks, the AEDC Company Grade Officers Association provided a daily grilling of burgers and hot dogs for all participants. There were additional numerous volunteers from across AEDC who provided everything from transportation support and safety to refilling of some teams' compressed air bottles.

Over the course of five days, 17 universities and the three service academies all made numerous attempts to lift the bulldozer. While several succeeded in getting it off the ground, the team from Auburn University delivered

a solution that met the objective while also achieving significant progress in many of the additional design constraints. Their solution consisted of a mixed air bag system, built of Kevlar and Vectran in their own laboratory.

Utah State's innovative hydraulic solution included repackaging of an electrically driven high pressure portable pump and creative shoring solution that allowed for multiple lifts and very efficient energy transfer.

Brigham Young's system, like Auburn's involved the use of air bags, but their bags were wrapped with military

grade webbing to reduce the stresses on the inner bladder of their lift bag.

In the Service Academy competition, the U.S. Air Force Academy designed and built a seven stage hydraulic lift that used vegetable oil to transfer power. The assembly succeeded in lifting the dozer over 25 inches in two cycles while simultaneously making everyone present crave fried food. This is the third straight win for the Air Force Academy.

Regardless of their performance on the field trial, there were portions of each entry that offered further opportunity for creative development. There were

mechanical, hydraulic, pneumatic, and hybrid solutions developed and demonstrated.

Engineering designs and team creativity were all put to the test. Regardless of individual results, every team came away with a more profound understanding of why it is essential that engineers leave their office desks and get their hands dirty when working on a problem. It is this first-hand experience that enables engineers to fully comprehend the scope of any problem, and allows them to work more effectively as part of any product development or problem solving team.

AEDC team supports 'Relay for Life'

By Dee Wolfe
AEDC Contributing Writer

Team "Remember," from AEDC, participated in the Coffee County Relay for Life which was held at the Coffee County Fairgrounds last month.

AEDC Team Remember raised more than \$2,000 for cancer research, and overall the event, sponsored by the American Cancer society, raised more than \$20,000.

Col. Raymond Toth, AEDC commander, attended the event and had this to say, "Relay for Life is such an inspiring event, particularly for me as cancer took three very important people in my life. It is always an honor to be able to celebrate the survivors of cancer and, just as importantly, their caregivers who work so hard to help cancer victims beat the disease.

"Relay for Life is an event that raises money to help end cancer and promotes how individuals can reduce their cancer risk. This program, with the support of thousands of volunteers around the country, along with the American Cancer Society, helps to save hundreds of lives a day; you can't help but be moved by their courage."

Team Remember raised money prior to the event by holding a bake sale and selling T-shirts, designed by AEDC member Staff Sgt. Thomas Starling. The bake sale raised several hundred dollars thanks to the generosity of AEDC employees.

The team raised money at the event hosting a bazaar table, offering chair massages and providing attendees the opportunity to wreck a car with sledgehammers. Chair massages were offered by

Susie Alexander-Newman and Carrie Heard from Tullahoma On-Site Bodywork and Massage. Colt Sain and several of his students from the Georgia Career Institute in Murfreesboro also provided massages.

2nd Lt. Andrew Spurgeon and 2nd Lt. Carlin Lucente manned the wreck-a-car station and raised almost \$100.

Due to everyone's dedication and assistance, fundraising efforts were a huge success, according to Shawn Wolfe, chief of AEDC Military Personnel.

"The survivor lap and caregiver lap are emotional times for the participants," Wolfe said. "As cancer survivors circled the track for the survivor lap and as survivors and their caregivers circled the track for the caregiver lap, their friends, family and teammates were there to cheer them on.

"Three AEDC employees, Education Training Specialist Dee Wolfe – the base liaison with the Relay for Life committee, Café 100 Manager Bryan Larson and Contract Specialist Karen Buckner participated in the survivor lap. We were so proud of all the people who participated in the Relay event, and we hope the base's participation in the event continues to grow each year. Even though we had a very small team, we still raised over \$2,000. Thank you to everyone who helped make this event a success."

Wolfe has shared the team's participation coordination since 2009.

Team Remember included the following members: Shawn, Dee and daughter Amber Wolfe; and Lisa Stevens with the AEDC Services Division.



AEDC Team Remember offered opportunities for Coffee County Relay for Life participants to smash the team's car as a fundraiser at the Coffee County Fairgrounds last month. (Photo provided)

Legacy airframe and modern technology CONECT



Barksdale Air Force Base members attend a ceremony in recognition of a B-52H Stratofortress returning from Tinker Air Force Base, Okla., on the flightline at Barksdale AFB, La. The B-52 is the first of its kind to receive a new Combat Network Communications Technology system, complete with state of the art displays, servers and communications uplinks. (U.S. Air Force photo/Senior Airman Joseph A. Pagán Jr.)

By Airman 1st Class
Joseph Raatz
AF Global Strike Command Public Affairs

BARKSDALE AIR FORCE BASE, La. (AFNS) – Air Force Global Strike Command took delivery of a significantly enhanced Boeing B-52H Stratofortress in a ceremony here.

The B-52H spent the previous 10 months at Tinker Air Force Base, Okla., being refitted with the Combat Network Communications Technology, or CONECT, upgrade. This modification is designed to greatly improve the aircraft's utility in the modern battlespace and to keep the 50-year-

old aircraft capable and lethal until at least 2040.

"The first CONECT B-52 we're about to receive is a major leap forward in advancing the BUFF on the battlefield," said Maj. Gen. Scott A. Vander Hamm, the 8th Air Force commander.

The CONECT upgrades provide the B-52H with digital display screens, computer network servers and real-time beyond line of sight communication links, allowing crews to stay connected to the world throughout their mission, officials said. A combined air and space operations center can now provide the aircraft with constant updated threat and target-

ing data, rather than the crew and mission being dependent solely upon information that was available at take-off.

"Over the past two decades we've seen rapid advancements in technology, and that has really changed way we operate on the battlefield, especially in the information environment," Vander Hamm said. "What hasn't changed is the need to advance our capabilities and integrate those technologies with information to provide our aircrew with the most up-to-date information and the ability to act on it."

The machine-to-machine interfacing introduced by CONECT also

allows for rapid re-tasking and retargeting while eliminating potential human error, giving the B-52H the capability of conduct digitally-aided close-support missions in coordination with tactical air control parties on the ground. This ability to make precise changes in an instant is critical in the quicksilver world of modern combat.

"It's the integration of these and other CONECT aspects that are increasing the combat capability of this old, but very formidable, aircraft," Vander Hamm said.

Another facet of CONECT is the addition of networking devices to the aircraft to act as a digital

framework, allowing for easier incorporation of new technologies in the future, officials said.

"Now when we add additional systems to the aircraft at some future date, we will be going from a digital component, across our new digital backbone, to another digital component elsewhere in the aircraft," said Alan Williams, the deputy program element monitor at AFG-SC. "In the future, it will make upgrades easier to do because we'll already have the digital infrastructure in the aircraft."

Because CONECT requires making such extensive modifications to the aircraft, the upgrades can only be performed

during Periodic Depot Maintenance, or PDM, at Tinker AFB. All aircraft are scheduled for PDM on four-year cycles.

According to officials, equipping a B-52H with CONECT requires nearly 7,000 man-hours to complete, or approximately nine months per aircraft. The Oklahoma City Air Logistics Complex at Tinker currently has the capacity to perform a maximum of 17 of these refits per year. All B-52H's are scheduled to complete the upgrade by 2020.

"The B-52 is here to stay," Vander Hamm said. "CONECT is keeping us current, relevant and credible in today's and tomorrow's fight."

Air Force tests new surveillance capability

By Justin Oakes
66th Air Base Group Public Affairs

HANSCOM AIR FORCE BASE, Mass. (AFNS) – The Air Force successfully completed the first Maritime Modes program risk reduction flight as the service moves toward providing a new air-sea battle surveillance capability.

The test flight, which took place in the airspace above the Navy's Point Mugu sea range in California, consisted of an 11 and a half hour sortie on a test Global Hawk Block 40 remotely piloted aircraft.

Maritime Modes is

comprised of two components: a Maritime Moving Target Indicator and a Maritime Inverse Synthetic Aperture Radar, or MISAR, that function together to provide intelligence, surveillance and reconnaissance information on vessels traveling on the water's surface.

During the flight, the MISAR collected data on assets and moving targets on the water, ultimately testing more than 100 items of interest.

"We're very pleased with the initial results of the test flight," said Lt. Col. Michael Harm, the program's materiel leader. "A good majority of the items met with suc-

cess." Flight test data is being analyzed in order to determine initial performance, stability and necessary fixes before entering the development test and evaluation phase.

The system, which is being developed by an Air Force Life Cycle Management Center team out of here, will integrate with other modes currently residing in the radar system called the Multi-Platform Radar Technology Insertion Program, or MP-RTIP. The MP-RTIP detects moving ground vehicles and can produce high quality synthetic aperture radar imagery.

Currently, RQ-4B

Global Hawks are the only aircraft equipped with the MP-RTIP radar system.

"This capability will augment the MP-RTIP's existing ground surveillance and provide the warfighter with a complete ground, coastal and open seas picture," said Frank Hertler, the Maritime Modes program manager. "The system will be able to detect, track, classify and build a profile from where the vessel came from as well as have the ability to see much smaller marine vehicles."

Maritime Modes is a NATO Alliance Ground Surveillance program re-

quirement that will eventually be integrated with the U.S. Air Force Global Hawk Block 40 baseline. The AGS program intends to procure five Global Hawks equipped with MP-RTIP, and the corresponding ground segment, providing the alliance with both airborne ground and maritime surveillance capa-

bility. "Maritime Modes will significantly increase the warfighter's ability in observing moving and stationary targets of interest in open and littoral waters," Harm said. "These targets can then be categorized and tracked, and their respective details can distributed via appropriate channels."



An RQ-4 Global Hawk undergoes pre-flight checks from maintenance technicians before a mission while deployed at an air base in Southwest Asia. Equipped on a block 40 Global Hawk, the Air Force completed the first Maritime Modes program risk reduction flight. The system is designed to provide intelligence, surveillance and reconnaissance information on vessels traveling on the water's surface. (U.S. Air Force photo/Staff Sgt. Andy M. Kin)

Special training being offered as part of Airman Fitness initiative

By Deidre Ortiz
ATA Public Affairs

Building resilience is important to the Air Force.

So much so, resilience training is now being provided to all interested DOD personnel at AEDC.

Wind tunnel project manager Allie Falk, who serves as one of the Master Resilience Trainers on base, explained resilience training is part of the Air Force Comprehensive Airman Fitness initiative.

“The purpose of resilience training is to build resilience across the Air Force, including active duty, guard, reserves, ci-

vilians and families,” she said.

According to the Defense Centers of Excellence, the Air Force’s definition for resilience is “the ability to withstand, recover and/or grow in the face of stressors and changing demands.”

In light of this objective, Falk stated resilience training is meant to support airmen by enabling them to better handle difficult or unexpected situations.

“There are 11 skills in resilience training that help Airmen to recover from negative events, cultivate leadership skills and learn positive coping mechanisms,” Falk said. “These skills include things like interpersonal

problem solving, good listening and active constructive responding, and acceptance strategies.”

Deanna Croxen, Chief of Workforce Development and MRT trainer at AEDC, noted several other benefits airmen take away from completing the training.

“Airmen can use the skills they are taught to deal with the stressors and hassles of daily life,” Croxen said. “This can lead to positive outcomes in performance, health, team work and leadership, [therefore] helping Airmen and enhancing the Air Force mission.”

Falk added that MRT may

eventually be mandatory.

“While there are currently not requirements for resilience training at AEDC, we still plan to offer the training to organizations on the installation,” she said. “We anticipate the requirements changing in the future.”

MRT skills can be taught in individual 30-minute sessions and other training opportunities may include Wingman Day, Junior Force Council, Spouses Organization, DOD Mentoring Program and individual branches. For more information about resilience training contact Deanna Croxen at 454-4583 or Allie Falk at 454-6225.

ATA award fee announced

By Raquel March
ATA Public Affairs

The Air Force announced an award fee rating of 92 for AEDC’s operating contractor ATA for the period Oct. 1, 2013 through March 31, 2014.

In a note to the ATA workforce, General Manager Steve Pearson said, “All of you should be proud of not only the score but all the work you performed for AEDC’s customers either directly or indirectly. It takes every one of us to deliver the mission and it was clear we were running on all cylinders.

“We thank you for all you do. We have a lot of work in our future and a lot of changes with the [contract] transitions. In the meantime we must remain focused on the work and do our best for our customers.”

Pearson said the company will continue to share the award fee money with employees in accordance with its policies.

The AEDC test and support contract was awarded to ATA on June 30, 2003. The operating contract is for up to 12 years and worth potentially \$2.7 billion.

ATA is a joint venture of Jacobs Engineering, PAE and GP Strategies.

For more information about AEDC, visit the Complex’s website at www.arnold.af.mil.

F-35 flies first local training sortie at Luke

LUKE AIR FORCE BASE, Ariz. – An F-35 Lightning II took to the skies over the West Valley on May 5 in what was the first local training sortie for the fifth-generation fighter jet.

The jet, tail number LF 5031, is currently the only F-35 at the base. Additional jets are expected to arrive at Luke within the next few weeks.

“The ability to conduct local flight operations demonstrates the commitment by thousands of individuals who have worked to make this a reality,” said Lt.

Col. Michael Ebner, 61st Fighter Squadron commander. “Our first sortie this week represents a significant milestone in the F-35 program at Luke.”

There are currently six F-35 pilots assigned to the 61st FS, which is the first F-35 squadron at Luke. There will eventually be approximately 30 by the time the squadron is up to full capacity.

The 61st FS coordinates with the 61st Aircraft Maintenance Unit, which maintains the aircraft, to fly the jet when

it is available – which as of this week is approximately 1-2 times per day. That number could increase to 2-4 sorties a day by next month, when more jets are expected at Luke, Ebner said.

As F-35 operations ramp up, West Valley residents may notice a slight decrease in F-16 sorties, as jets from one of the F-16 squadrons, the 309th FS, are being transferred to Holloman AFB, N.M.

Construction, much of which is sub-contracted locally,

continues on base to prepare for the arrival of additional F-35s.

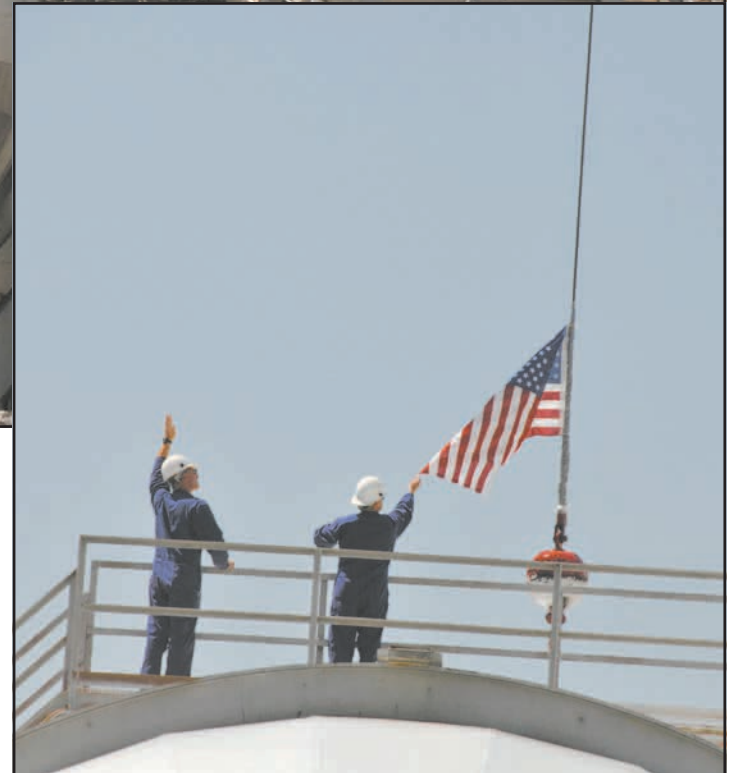
The Academic Training Center, which will house classrooms and 12 F-35 simulators, is under construction and is expected to be completed in late September. Construction is also underway on the combined Operations/AMU building for the second F-35 squadron.

Other projects, including the third Operations/AMU building, a maintainer training facility and a four-bay F-35 hangar are also in planning stages.



Flags fly over ASTF

Recent AEDC retirees Rosemary Matty and Jerry Kitchens received U.S. flags that were flown over the Complex's Aeropropulsion Systems Test Facility (ASTF), for turbine engine testing, as part of their retirement. Matty and Kitchens worked on systems sustainment projects in ASTF where a crane is currently in place for the facilities exhaust system. The flags were suspended from the crane. Matty, previously an AEDC Advanced Large Military Engine Capability (ALMEC) program manager, retired with 33 years of service at AEDC. Kitchens was an AEDC Aeropropulsion Sustainment Branch director and retired with 37 years of service. *(Photos by Rick Goodfriend)*



New desktop icon offers quick access to helping agencies



By Deidre Ortiz
ATA Public Affairs

It will now be even easier to gain access to the online directory to all helping agencies available to base personnel.

Under the guidance of the Air Force Materiel Command, AEDC leadership has implemented a Helping Agencies Icon on all AEDC personnel's desktops.

The helping agencies are presently made available through the Arnold AFB homepage in the Employee Resource Guide under AEDC Links.

However, with just a click of a mouse, anyone looking for assistance will be taken directly to the directory listing the contact information for all helping agencies. These helping agencies include Military One Source, Airman and Family Readiness Center,

Sexual Assault Response Coordinator, Health and Wellness Center, Employee Assistance Program, Victim Witness Assistance Program and many more agencies.

By implementing this icon the AEDC community will have quicker access to help when someone is in need. It's been called a "one-stop shop" for finding information on all the helping agencies available from any computer.

The Helping Agencies Icons have already been implemented at Edwards AFB and Wright-Patterson AFB.

At AEDC, the icon will be added to all new computers deployed in the future and cannot be removed by the user. Should personnel have questions concerning the placement of the icon, please contact the Arnold Help Desk at 454-4040, option 2.

AEDC Woman's Club celebrates 60 years

By Barb McGuire
AEDC Woman's Club

The AEDC Woman's Club had a 60th Anniversary Celebration at the Arnold Lakeside Center on May 6.

A photo presentation was given by the former club president Barb McGuire. The presentation included photos from 1953 through 2013 of board members, opera presentations, programs of belly dancers, geisha girls, Demetria Kalodimos of Channel 4, historian David Hiebert and many other programs of the club.

All AEDC Woman's Club members were given a copy of the anniversary presentation.

Founding member and former president Milly Ellis was in attendance. Other past presidents and honorary presidents who attended the anniversary were Sande Hayes, Liz Jolliffe, Pam Wiedemer,

Bobbie Gilliard, Blossom Merryman, Dona Rudy, Carolyn Scott, Dianne Herron, Gloria Crawford, Lou Ann Mitchell, Lorene Limbaugh, Barb McGuire, Suzanne Rutley, Patti Mathis, Mary Alice Smith and Susan Schulz.

The May 6 meeting also included the installation of new officers: President Sande Hayes, First Vice-President Patti Mathis, Second Vice-President Anne Wonder, Secretary Sandie Simms, Treasurer Olga Brindley, Parliamentarian Liz Jolliffe and Historian Elaine Eubanks.

The AEDC Woman's Club, besides awarding scholarships to area students, gives donations collected each month to various charitable agencies. This year's donations went to The Good Samaritan Center in Decherd, Tenn., the Fisher House Foundation, Inc., the Toys for Tots Campaign by the fire de-



AEDC Woman's Club members take a moment to pose for a photo during the club's 60th anniversary celebration on May 6. Pictured in the front row is Sande Hayes, Milly Ellis, Liz Jolliffe and Pam Wiedemer. Back row: Bobbie Gilliard, Blossom Merryman, Dona Rudy, Carolyn Scott, Dianne Herron, Gloria Crawford, Lou Ann Mitchell, Lorene Limbaugh, Barb McGuire, Suzanne Rutley, Patti Mathis, Mary Alice Smith and Susan Schulz. (Photo provided)

partment, The Blue Monarch, The United Way and the Coffee County Literacy Council.

The Woman's Club

will start its 2014-2015 meetings on Sept. 1. For information about the AEDC Woman's Club membership or the meet-

ings contact Monica Skelton at 393-3698 or Liz Jolliffe at 393-2552. The AEDC Woman's Club is a private organiza-

tion. It is not a part of the Department of Defense or any of its components and has no governmental status.

Honor Flight of Middle Tennessee takes veterans to Washington D.C.

By Claude Morse
Honor Flight of Middle Tennessee

Fifty World War II and Korean War veterans and their guardians traveled to Washington D.C. on May 10 to visit their war memorials and observe the Changing of the Guard at

the Tomb of the Unknowns at Arlington National Cemetery.

AEDC Commander Col. Raymond Toth, Coffee County Mayor David Pennington and Manchester Mayor Lonnie Norman were some of the local officials along with local National Guard officers –

including two Tennessee National Guard general officers – seeing the veterans off from 2:45-3:45 a.m. that day in Winchester, Tullahoma and Manchester.

Local police and sheriff's departments from Coffee and Franklin counties escorted the veteran's chartered bus along with

National Guard vehicles and the American Legion motorcycle riders.

At the Nashville International Airport, members of the Patriot Guard Riders welcomed the veterans with two lines of American flags. Once onboard the first flight to Washington for the day, the flight crew and other passengers recognized the veterans.

After arriving in Baltimore, active duty military personnel from Ft. Gordon, Ga., and Ft. Meade, Md., as well as a couple hundred civilians, gave the group a hero's welcome at the airport.

The veterans met Senators Bob and Elizabeth Dole at the World War II Memorial. They also talked with veterans from eight

other Honor Flights from across the United States.

After a short lunch break, they visited the Korean War Memorial and then it was on to Arlington National Cemetery.

Coffee County Central High School graduate Maj. Paul Sipe of the U.S. Army and his wife Jessica greeted the group at Arlington National Cemetery where the veterans observed the Changing of the Guard at the Tomb of the Unknown Soldiers.

The group also drove by the Marine Corps Iwo Jima Memorial, the Air Force Memorial and the Pentagon.

At Ft. Mead Maryland, the group stopped for a military working dog demonstration and supper in the

base dining hall.

A group of soldiers from Ft. Gordon, Ga., accompanied the veterans back to the airport and spent time with the veterans before they boarded their flight back to Nashville.

The Honor Flight of Middle Tennessee is part of the national Honor Flight network. The group's goal is to take all local World War II and Korean War veterans, who have not seen their war memorials, to Washington D.C. The trip is free to qualified veterans.

Planning and fundraising is currently under way for a fall Honor Flight from Middle Tennessee. Each flight costs around \$20,000.

For more information call 247-5151.



Tullahoma High School senior Jonathan Fearing (third from left) escorts his grandfather Herb Fearing of Tullahoma (in wheelchair) on the Honor Flight of World War II and Korean War veterans while he talks with two soldiers from Ft. Gordon, Ga. and Herb's college fraternity brother (right). (Photo by Claude Morse)

