



HIGH MACH

Serving the World's Premier Flight Simulation Test Center



Vol. 57, No. 5

www.arnold.af.mil

March 5, 2010

Global Hawk growth engine to 'fly' at Arnold AFB

By Philip Lorenz III
Technical Writer

The AE3007H growth engine, the power plant for the RQ-4 Global Hawk unmanned aircraft system (UAS), is undergoing testing in AEDC's T-4 test cell.

"This is the first [altitude] test on this [specific] growth engine," said Gary Meuer, ATA project manager on the test. "They (the customer and sponsor) are after fuel economy, not more performance, but more efficiency and endurance."

According to Andrew Jackson, ATA's project engineer on the test, this AE3007H has upgraded turbine hardware and an improved combustor that, if validated by this project, will enable the engine to have greater service life.

"The new turbine and combustor are intended to provide increased hot section life, i.e. longer intervals between overhauls, while maintaining compa-

rable performance levels as the current hardware," he said. "The key parameters that we simulate in the test cell are altitude and Mach number."

In 2004 and 2005, AEDC engineers, including Jackson, had conducted ground testing of the AE3007H engine in T-4.

The test at AEDC is taking place as unmanned aircraft systems are taking a more prominent role in Iraq and Afghanistan and other countries are considering buying the Global Hawk for their own air forces.

"Our military is in a transition from having live pilots in the cockpit flying the aircraft to having them in a control room state-side, controlling a UAS," said 2nd Lt. Jamie Gurganus, the 717th Test Squadron's project manager for the engine test. "It's all about this transition and evolution of technology that we are able to continue supporting the warfighter and our mission. Protecting our fellow airmen is part of that mission."



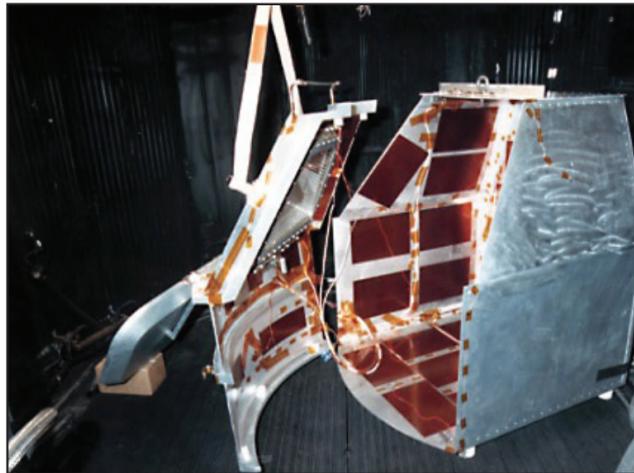
An RQ-4 Global Hawk takes off from an airfield in New Mexico during flight trials. (Photo courtesy of Northrup Grumman)

The Global Hawk can provide up to 36 hours of long-range surveillance of areas of interest. With the RQ-4 can survey up to 40,000 square miles of terrain a day.



One for the governor

AEDC Commander Col. Michael Panarisi meets with Tennessee Gov. Phil Bredesen and State Senator Eric Stewart Feb. 24 in Nashville. The colonel presented the governor and the senator with a personal copy of *Beyond the Speed of Sound*. (Photo by Joel Fortner)



Solar testing on a model of the International Space Station's new cupola is shown here during a model change in AEDC's 12-foot diameter vacuum (12V) Space Chamber in 1993. (AEDC file photo)

Cupola window tested at AEDC

By Janaé Daniels
High Mach Editor

Astronauts aboard the space shuttle Endeavor, the most recent space shuttle launch, connected the cupola window to the International Space Station (ISS) that was tested at AEDC.

The cupola test was conducted

in AEDC's 12-foot diameter vacuum (12V) space chamber in 1993.

The purpose of the test was to find out what would happen to the windows when exposed to contrasting pressure and temperatures. The test information was used to verify the math modeling

See *Cupola*, page 3

Arnold Police earn POST certification, first in center history

By Janaé Daniels
High Mach Editor

For the first time in its almost 60-year history, AEDC police officers will be recognized under Tennessee Code Annotated as a legal entity for Police Officer Standards and Training (POST) certification.

In a ceremony earlier today led by former police chief Joe Kirk, close to 80 percent of the base's officers took the police oath and are now certified, with the expectation that the remaining 20 percent will be certified within the year.

"POST certification for the Arnold AFB police is certainly a milestone in the continued professional advancement of the unit," Kirk said. "Thanks to Chief [Rick] Trull and his staff's continuing efforts POST certification has become a reality for the Arnold police organization."

AEDC Vice Commander Col. Eugene Mittuch said at the ceremony, "The certification is a big deal; it requires commitment of your personal time away from your families and allows for a professional police force and not just a security force."

Air Force Security Chief Bob Stanze said this is truly a great day for ATA Police, AEDC and



Arnold Air Force Base police officer Steve Luttrell, middle, recites the official police oath during a Police Officer Standards and Training certification event at the base Feb. 19. Officers Dave Everett, left, and Buck Young also recite the oath. (Photo by Rick Goodfriend)

the United States Air Force. "Achieving POST certification carries with it significant recognition, credibility and professional status within the State of Tennessee Law Enforcement community and has been a vision here at AEDC for more than 20 years," Stanze said. "To have a 'dual' Air Force and state certified cadre of law enforcement officers is like

having the 'best of both worlds.'" According to Chief Trull, the certification means Arnold can now certify their own officers as well as continue to perform mutual aid and other local services. The officers also go through the same training, have the same degree of knowledge and depth of understanding as all the local departments do.

"POST certification does a lot of things for us," Chief Trull said. "First of all, it gives us recognition in the state as law enforcement officers, but more importantly than that, it lends a lot of credibility to the things that we do."

"When we go to court for an issuance of a state citation or we go to court because we arrested someone for a DUI or any of

those things that bring us to court – being POST recognized is the standard that the court expects. Through the years, we've been able to cover that by taking our Air Force certification."

Noticing some of the challenges when faced in court of authority and not being state certified, Chief Trull realized the importance of what his Air Force counterpart was asking for. He knew legislation had to change and be passed so he contacted his local state representative Judd Matheny.

"Through history, different groups of law enforcement have been through the legislative process such as deputizing sheriffs," Chief Trull said. "There is a provision in the code now for situations kind of like us, but it didn't address a government installation."

Tulahoma Chief of Police Paul Blackwell said this certification doesn't change the already good relationship, but only enhances it.

"The POST certification raises the capability of the AEDC police force," he said. "The greatest benefit will be the joint training and being able to enhance that capability."

See *Security first*, page 3

HIGH MACH

Arnold Engineering Development Center
An Air Force Materiel Command Test Center

Col. Michael Panarisi
Commander

Joel Fortner
Director,
Public Affairs



Dr. David Elrod
General Manager,
Aerospace Testing Alliance

High Mach Staff:
Kathy Gattis, ATA Public Affairs Manager & Executive Editor
Janaé Daniels, Editor & Production

High Mach is published by *The Saturday Independent*, a private firm in no way connected with the U.S. Air Force, Arnold Engineering Development Center (AEDC) or Aerospace Testing Alliance (ATA), under exclusive written contract with ATA, center support contractor, at Air Force Materiel Command's AEDC, Arnold AFB, Tenn., 37389.

Everything advertised in this publication will be made available for purchase, use or patronage without regard to race, color, religion, sex, national origin, age, marital status, physical handicap, political affiliation or any other non-merit factor of the purchaser, user or patron.

The *High Mach* office is located at 100 Kindel Drive, Suite B212, Arnold AFB, Tenn. 37389-2212. Editorial content is edited and prepared by AEDC support contractor ATA. Deadline for copy is Wednesday at close of business the week before publication.

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

The content of *High Mach* does not necessarily reflect the views of the Air Force, AEDC or ATA. The appearance of advertising in this publication does not constitute endorsement by the Department of Defense, the Department of the Air Force, AEDC, ATA or *The Saturday Independent*, of the products or services advertised.

For advertising information, call (931) 728-9040.

For general information about *High Mach*, call (931) 454-5617 or visit www.arnold.af.mil.

The center's vision: AEDC as the test center of choice, the workplace of choice for our people and a model of environmental excellence.

**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

**Core Values**

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

Partners...Our center of gravity

By Col. Michael Panarisi
AEDC Commander



Panarisi

We enjoy a truly enviable posture here at Arnold.

Not only are we blessed with a near ideal location for our mission, the founders also had the foresight to locate some "wind beneath our wings" literally across the base.

For those that didn't know the history, the University of Tennessee Space Institute (aka UTISI) was located here specifically to meet the needs of a highly technical workforce, and this is a resource and a partnership I want to amplify.

In the '60s, AEDC and the nation were consumed with a "space race." The need for advanced technology, research and education opportunities within reach of the country's premier ground test organization drove the location for what we now know as UTISI.

Literally hundreds of AEDC personnel have earned advanced degrees there over the years, as well as some 40 astronauts. In fact our current work force boasts a number of MS grads and even a couple PhDs.

While these teammates

were in class, our tech development efforts have leveraged the universities unique lab, research and cooperative development capabilities. We can trace a great deal of what we do here back to the partnerships forged over the years with this fine institution.

Unfortunately, when budgets and schedules get tight, we tend to look inward, and our partnerships drift. This is exactly the time when we need to reinvigorate our network.

I'm challenging all of you to think about how UTISI can help us move to the next level while we face increased fiscal pressures in the midterm.

I just completed a tour of their wonderful facility, and I can tell you first hand, they see supporting AEDC as "job #1." If they don't have exactly the class we think we need,

they are committed to building it.

If there's a gadget we want to build, they are chomping at the bit to help. And if there's a sticky problem we can't seem to solve, they want to be part of the solution. We couldn't ask for a better partner.

Did you know they offer night and online/distance learning classes? Did you know you can get your MS or PhD there and apply your work at AEDC to the process?

Adding to your list of credentials just doesn't get any easier or more convenient, even if you aren't pursuing a degree.

They even have short courses in a wide variety of topics, and will build one for us if we need it. This is an absolute gold mine right outside our door, and it's time we get digging.

So take a minute, and think about how we can best partner with our fantastic neighbor, and join me in getting to know this team a lot better.

We all will benefit, and I'm looking forward to a long and fruitful friendship with our "very own" UTISI.

**Hard work:
Can others see it on you?**

To borrow an often quoted preamble, "So there I was ..."

I found myself on stage at a practice for the promotion and recognition ceremony at our deployed base. One of the promotees, a young airman 1st class, wore an oil (or some other lubricant) stained uniform and boots. I studied this young man and listened to the script to hear where he worked. As I listened, I learned he was a maintainer being promoted to senior airman below-the-zone.

What I saw and heard spoke volumes to me. He was an Airman who was just what he appeared to be -- a hard working success. He was not a shiny penny; he was the real deal. I could see he was on the mission and the mission was on him. Apparently, his leaders saw it too because they selected him to be promoted ahead of his peers.

I also pondered a question that day, "Can others see hard work on me?" When we know our job, produce results and take pride in what we do, we present the same image this young maintainer projected. Being technically ready is the first step of this journey.

Technical readiness is a key component of personal and unit readiness. Simply put, know your job. Accord-

ing to Alexander Suvorov, "The problem fears the expert. A trained man is worth three untrained."

When we earn and maintain a skill-level commensurate with our rank, we become enablers of airpower within our sphere of influence and operational environment. Others see our excellence and subsequently examine themselves and hopefully adjust their efforts.

We must also put in the work. Knowing the job is one thing; producing is another. Airmen neither alibi nor imitate; they produce. As fortune would have it, I got a chance to see this newly-minted senior airman in action a few nights later on the flightline.

It was clear to me he was the master of this domain and a wealth of knowledge on the matter of aircraft hydraulics. In fact, his commander confirmed my observations. Through hard work, we must be on target all the time -- building structures, providing medical and force support, enabling communications, refueling, flying sorties and yes, providing maintenance -- because hard work is not measured in stains, but service and results.

Finally, we must take pride in what we do. To put it in another familiar

way: excellence in all we do. There is something infectious and contagious about excellence. The more one produces it, the more they want to produce. You may have heard the Biblical quote, "As iron sharpens iron, so one man sharpens another."

It is true. The more I observed this young man, both at the promotion practice and on the flightline, the more introspective and motivated I became. I want others to see hard work on me every day.

William W. Warmath once wrote, "Suffering and success go hand-in-hand. If you are having success, it is because someone before you suffered. If you are suffering, it is so someone after you can have success."

As we build on the legacy of Airmen, Soldiers and Sailors of the past, we must remember the only time success comes before work is in the dictionary. Our hard work today will produce immeasurable results for our family, Air Force, nation and the world tomorrow. Can others see hard work on you?

Commentary by Senior Master Sgt. Les Bramlett, 380th Expeditionary Medical Group.

**Haiti:
This is why I serve**

By Capt. Nathan D. Broshear
Air Forces Southern Public Affairs

I'm often asked why I choose to be in the Air Force.

Some people ask to start up a conversation, others to be polite, and some genuinely wonder what compels Airmen to swear to support and defend the Constitution, put themselves in harm's way and deploy far from home.

Most people who ask are looking for a one-word answer. They expect you'll simply say adventure or flying, travel, education or some other military benefit.

Usually, after about 20 seconds of explanation their eyes turn glossy as you struggle to capture the essence of what you do and why you do it, all without using military jargon.

I've been in Haiti since January and I know when I return, people will ask me, "What did you see there? Are we really helping?" The answer to these questions is really the same answer to the question, "Why are you in the Air Force?"

I've learned service has rewards greater than any paycheck, trip abroad or educational degree. In it exists opportunities to be where others cannot, to stand where others will not, and to do what people would do if only they could be where you are.

The rewards of serving aren't one-word answers; they're the tiny snapshots of humanity, dignity and kindness playing over and over in the minds of Airmen who've "been there."

These scenes of hope replay in my mind each night as I lie down to sleep in my tent:

Airmen download thousands of pounds of lifesaving food and water from aircraft that don't even shut off their engines. They're done in minutes and begin working on the next aircraft -- 24 hours a day -- so far, more than 3,000 times.

I hug a Haitian man as he tells me, "Without you, I would be dead. Thank you, America." I see the man again a few days later and he greets me like we've known each other for years. All he asks is for me to take a picture with him, not for him to keep, but so I can take the picture home with me and tell others his story.

An Air Force nurse cries with a patient recovering in a clinic, not from pain, but because they would soon part. Later, the whole ward -- even patients with life-threatening injuries -- sings together while nurses dance for them.

People come together for the greater good. Airmen unload airplanes from Venezuela, China, Qatar, France, Brazil, Chile, Australia, Colombia, Nicaragua and dozens more. They salute every aircrew as they depart, no matter what flag is on the jet's tail.

I stare in wonder at owls flying across a full flight line at 1 a.m. A private jet pulls in, full of volunteers. They ask, "Where's the nearest hotel?" I point to a few tents and cots in the grass next to the tarmac. They sleep outside and don't mind a bit.

I hold a baby born on board a Navy hospital ship just after the earthquake. The mother lost one leg and incurred multiple other injuries after debris fell on her. Yet the baby is healthy, and all mom wants to talk about is how happy she is to be home again.

A family huddles under a tarp held up by sticks on a median between traffic lanes. They're cooking rice and beans from a huge sack marked "A gift from the people of the United States of America." They look up, smile and give us a big thumbs-up as we drive by.

I hear my family on the phone saying, "I'm proud of you."

I give an meal-ready-to-eat to someone who's never had one, and likely hasn't eaten all day.

When the first commercial flight arrives in Port-au-Prince, Haitian families reunite a month after the earthquake. Tears of joy stream down their faces as they embrace.

A group of Airmen get off a transport airplane carrying their bags after traveling for an entire day. They've got every right to rest, but just hours later, they're building tents, marshalling aircraft, mapping food distribution points and driving earthmovers, all 700 of them.

A nurse tells me about a Haitian baby boy born on board the USS Carl Vinson. The mother names him Vincent.

A woman stands atop the mountain of rubble that was once her home. She points out where she and her son were when the earthquake hit, then explains how a fallen door miraculously protected them from harm. There's a hole in the rocks, just big enough to crawl through, marking their exit from death. The woman calls the escape, "God's hand."

When I return home and I'm asked why I serve, I'll struggle to communicate the sights and sounds of hope that come with the privilege of being an Airman. My storytelling will fall short of putting a person where I've been.

I won't be able to conjure up the sensory signals of mutual respect, trust and compassion that come from being there when you're most needed.

Why do I serve? The one-word answer: Haiti.

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, you cannot smoke 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. In case of inclement or cold weather, employees are encouraged to use their personal vehicles if a sheltered designated smoking area is not available nearby. 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.

Regarding use of smokeless tobacco, 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. Smokeless is strictly prohibited in conference room meetings and other areas, e.g. PMEL, where Air Force regulations specifically prohibit.

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

State leaders visit rifle range, shoot war-era weapons



Army Capt. Stacy Kunz welcomes state and local officials to the Arnold Rifle Range Tuesday. (Photos by Rick Goodfriend)

Members of the Tennessee General Assembly visited the Arnold Rifle Range/Tullahoma Tennessee National Guard Training site Tuesday as part of the 4th annual Legislative Shoot and BBQ.

The purpose of the annual event is to showcase the Guard's state-of-the-art firing range, educate participants about firearms and firearms safety and strengthen relationships between local, state and federal government.

The members from both political parties, along with local elected officials and community leaders go to fire a wide variety of firearms from a vintage World War I water-cooled machine gun to the latest submachine guns and pistols.

The guns were provided by Hero-Gear Firearms from Winchester. The AEDC Police Department also supported the event.

The event was sponsored by the Arnold Community Council, Hero-Gear and Barrett Firearms.



Two participants shoot at a target during their visit to the base rifle range Tuesday.



AEDC Executive Director Britt Covington aims at the target during the Legislative shoot Tuesday at Arnold's Rifle Range.

Solid waste study to aid base recycling program

Contributed to by Janae Daniels
High Mach Editor

The 704th Civil Engineering Squadron's Asset Management Flight issued a contract to Science Applications International Corporation (SAIC) to perform a solid waste characterization study from Jan. 25-30 at Arnold AFB.

The objective of the study is first to characterize the solid waste stream at Arnold AFB within three categories – base housing, municipal and industrial sectors. Secondly to determine the percentage of recyclable materials such as paper, cardboard, aluminum, plastic, glass, wood, scrap metal, organic materials, tree trimmings and cans.

"Within these three categories, the study will also determine the percentage of non-recyclable wastes," Trung Le, Air Force project manager said.

Air Force Materiel Command has placed an emphasis on the viability of recycling programs and this study will help support a cultural change in how Arnold manages its solid wastes.

The 704th Mission Support Group's Community Services Flight Reduce Reuse Recycle Program (RRRP) currently collects cardboard, 1 & 2 plastics, aluminum, office paper and mixed paper from all on-base office buildings, Services facilities, the commissary, BX, base housing and the National Guard Range.

The team, managed by Robbie Evans, consistently exceeds the Air Force goal of recycling 75 percent of these products.

Katherine Sculthorpe, SAIC project manager, stated that "Recycling is not only good for the environment; it also saves money from landfill disposal tipping fees and generates revenues from recycling sales."

According to Travis Adams, SAIC team lead, "The key to a successful solid waste audit is to ensure that a good representative sample of normal facility wastes is collected." During the study, the solid waste collected from 120 serviceable dumpsters base wide was separated into labeled containers and weighed according to specific

categories.

A total of 27 percent of the waste sorted consisted of recyclable products.

According to Katie Eichling, data analyst on the project, the preliminary data showed the top three categories of recyclables found in the trash are cardboard (6.7 percent - 1,248 pounds), recyclable plastics (6.7 percent - 1,235 pounds) and mixed-grade paper (6.0 percent - 1,109 pounds).

Within the next several months, the results of the study and recommended various options for recycling to Arnold AFB, will be completed.

For more information on the RRRP at Arnold AFB, contact Evans at (931) 454-6068.

Cupola from page 1

techniques they had previously gathered to quantify the heat conduction and thermal radiation properties of the cupola.

According to Chris Smith, technical director of the 718th Test Group,

the most recent ISS component to undergo testing in the 12V chamber was the Common Berthing Mechanism in 2000.

Testing included long-term balancing using the chamber's solar simulator

for direct sunlight heating and liquid nitrogen for shaded area cooling.

"During the test, we rotated the mechanism to induce thermal gradients simulating conditions the hardware would experi-

ence in Low Earth Orbit," Smith said.

That was one of the last solar tests Arnold conducted in 12V before reconfiguring it to an electric propulsion test capability in 2001.

The cupola provides a 360-degree viewing for the onboard astronauts and a panoramic view of Earth, celestial objects and visiting spacecraft.

The cupola houses controls for the station's ro-

botic arms and will allow crew members to monitor spacewalks and other exterior activities.

The window shutters provide protection from orbital debris.

Security first from page 1



Arnold Air Force Base Police Officer Standards and Training certified officers. (Photo by Rick Goodfriend)

The process began about a year-and-a-half ago which is necessary in a case like this to allow for lead time in order to get on the proper agendas and to fully comply with the legislative rules of the Tennessee General Assembly.

Rep. Judd Matheny, who has a law enforcement background himself, chose to take on the challenge because of his respect for the leadership at AEDC and the officers of Arnold AFB.

"I believe Arnold AFB police set the standard for professionalism and esprit de corps, and it is easy to help someone that is so enthusiastic about their professionalism and integrity," Rep. Matheny said.

"The process went relatively smoothly, but of course there are always challenges."

Rep. Matheny said some education of the members of the Tennessee General Assembly was necessary on the unique mission of Arnold police.

"Once the majority of the legislators understood why we wanted the POST certification and what it would mean for the public safety and accountability, they were eager to help."

Chief Kirk served as police chief from 1982 until he retired in 2001 and has never been more proud of a police organization as he is of the Arnold force.

"Dave Gardenhire and I approached the subject several years ago, however the timing wasn't right considering the state law governing police certification and the prevailing assumptions concerning units such as the Arnold Police force at that time," he said.

"I have seen it evolve from basically a 'security guard' unit with limited standards, training and practically no police equipment to a well trained, equipped and highly professional force. I am very proud to have been a member of the Arnold AFB police force."

Cope earns achievement award in emergency services

By Philip Lorenz III
Technical Writer

Ricky Cope, a paramedic crew chief for AEDC Fire and Emergency Services, has been honored with the Tennessee Ambulance Service Association's (TASA) 2010 Tommy Erwin Lifetime Achievement Award.

The Tommy Erwin Lifetime Achievement Award is presented annually to an individual, whose contribution to pre-hospital care has been consistent and long lasting, representing a lifetime of outstanding service to the profession and the public.

Cope, whose career as a firefighter and paramedic spans 34 years, acknowledged being taken by surprise upon learning of his nomination for the award.

"I was humbled and honored," he said.

Cope joined Arnold AFB's Fire Department in 1978. Prior to coming to Arnold, he worked full-time at the Cannon County Ambulance Service and has been their director for 27 years.

Wade Campbell, AEDC Fire and Emergency Services' safety officer, suggested Cope for the prestigious award.

"Ricky brings competence, professionalism and a deep commitment to provide the best pre-hospital care to his patients," said Campbell, who first met Cope when the two men worked for the Woodbury Volunteer Fire Depart-



Right, Brandon Ward, TASA's vice president, presents Ricky Cope, left, with the 2010 Tommy Erwin Lifetime Achievement Award at TASA's annual convention in Gatlinburg Feb. 18. (Photo provided)

ment in the late 1960s. "He is [also] very active and well respected in his community and church. I never doubted that he would receive the award. In my opinion he was the only choice. I am very glad that the TASA selection committee shared my opinion."

In the award submission to TASA, AEDC Fire Chief Daryle Lopes, who nominated Cope for the state-level award, said, "Some of Ricky's finest attributes are his quiet strength, his passion for serving others and his natural ability to provide effective leadership in any crisis or situation. I consider him the spearhead of my EMS corps, and the leader and provider everyone should and does emulate."

Lopes said Cope has continu-

ally led the way in making improvements to emergency care in both Cannon County and at AEDC. While holding down his full-time position at AEDC and a demanding part-time schedule with the county, Cope also has served two eight-year terms as mayor of Woodbury and 17 years as the community's alderman.

"Ricky has never been satisfied with being on the sidelines when it comes to EMS or his community," Lopes said in the awards submission. "He has been a member of the Upper Cumberland EMS Director's Association for the past 25 years where his influence on the state's EMS corps has been immeasurable. He has been a member of the Cannon County

911 Emergency Communications Board since its inception.

"With a vision of bringing emergency medical care more rapidly to Cannon County citizens, Ricky created the county's First Responder Program and certified nine fire fighters to provide immediate care to others until the ambulance could arrive."

Lopes continued, "More recently, he championed installation of AEDs (automated external defibrillator) in the patrol units for multiple law enforcement agencies. His forward-looking management style drastically increased life saving capability across the entire county.

"Ricky also led the charge in development of new 911 protocols, radio capability and dispatch procedures for the new 911 facility. He served eight years on the Tennessee EMS Board as well."

Cope said it is important to stay up to date in his profession.

"It is a real challenge to stay current because in the medical field things change quite a bit," he acknowledged. "You always want to do the best you can for patients and hope you do."

He said regardless of their overall condition, the patients must always be treated with dignity and respect.

Cope's wife Judy works as a custodian for Premier Corp., on base and they have three grown children, Jamie, 35; Jeremy, 29; and Julia, 28.

CPR classes available for military dependents

Imagine for a moment you are at a family gathering. The sun is warm, everyone is having a great time and suddenly one of your loved ones goes unconscious.

Would you know what to do? While this scenario may seem far-fetched, it happens every day.

About 80 percent of all out-of-hospital cardiac arrests occur in private residential settings. Being trained to perform cardiopulmonary resuscitation (CPR) can mean the difference between life and death for a loved one.

If bystander CPR is not provided, a sudden cardiac arrest victim's chances of survival fall seven percent to 10 percent for every minute of delay until defibrillation. Few attempts at resuscitation are successful if CPR and defibrillation are not provided within minutes of collapse.

Effective bystander CPR, provided immediately after cardiac arrest can double a victim's chance of survival.

The American Red Cross will be offering a free CPR class at the Gossick Leadership Center March 26 from 9 a.m.-6 p.m., and it is open to all dependents of active-duty members assigned to Arnold AFB.

This class will cover CPR for adults, children and infants, as well as instruction on the Automated External Defibrillator (AED) and basic first aid.

In addition, the Red Cross will also be offering a babysitter's course March 27 from 8 a.m.-6 p.m., and it is open to all dependents of active duty between the ages of 12-15.

This course is designed to give the participant the knowledge, skills and confidence to care for infants and school-age children and is required prior to dependents being able to babysit on base.

If you have any questions, or would like to sign up for this training, please contact Staff Sgt. David Holman at the Arnold Medical Aid Station at 454-5351.

Article provided by the Arnold Medical Aid Station.

Space expert visits AEDC

By Janaé Daniels
High Mach Editor

Steve Cook, the director of Space Technologies for Dynetics, visited AEDC recently to share his experiences working with NASA and the Ares Launch Vehicle Project.

Cook spoke at the monthly technical excellence forum where he gave an overview of space activities in the Tennessee Valley and talked about his work at NASA. He discussed some of the space work at the Army's Space and Missile Defense Command (SMDC) and commercial work done by both SMDC and NASA.

"We do the same kind of thing within Dynetics [speaking of the technical excellence forum] and I think it's fantastic," he said. "It encourages knowledge sharing amongst our engineers, it encourages folks to build networks and to not just think within their silos and that's why we do it and it looks to me that's a big part of why you do it."

Cook emphasizes the importance of recruiting young people to the math and science fields.

"I think this is probably one of the most important things we have to do," he said. "To do the missions that industry has on the civil side, the commercial side and the DoD side into the future, we've got to have a steady

pipeline of young engineers and scientists.

Almost 20 years with NASA, Cook has been to AEDC several times but wanted to give his leadership a chance to see and understand AEDC's capabilities.

"We took a tour because I wanted re-familiarize myself and familiarize some of our leadership with the capabilities at AEDC," Cook said. "I went to some of the facilities I'd been to before, but there were several facilities I had never been to and since we're trying to grow Huntsville into the responsive space development, test and evaluation community, a lot of the capabilities up here I think have a definite fit for things we are going to need down the road."

Cook toured the space chambers and was excited to see them and hear about their capabilities.

"I think these chambers have a growing future, given what's coming up as space becomes more of a battle space," he said.

Knowing the capabilities, Cook said bringing work to the Tennessee Valley is his main priority.

"I think the capabilities that AEDC has fit really well with not only where we're trying to go, and where NASA is trying to go, and where SMDC is going," he said.

From 2005-2009 Cook served



Steve Cook speaks to the Technical Excellence forum lunch and learn crowd during his visit to AEDC. (Photo by Rick Goodfriend)

as manager of the Ares Projects office at NASA's Marshall Space Flight Center in Huntsville, Ala. He was responsible for overall project management and direction of NASA's Ares 1 crew launch vehicle and Ares V cargo launch system.

AEDC testing to date includes transonic, supersonic and hypersonic wind tunnel work to include aerodynamic, stage separation, roll control and the crew escape launch system. In addition, workers tested materials made to protect the manned capsule, known as Orion, during re-entry into Earth's atmosphere.

According to Cook, the Ares

launch in October 2009 was the first time the United States had flown a developmental launch vehicle since the mid-1960s.

"NASA would not have pulled that flight test off without AEDC," he said.

Selected for his current position in late 2009, Cook is responsible for leading Dynetics efforts in space including orbital systems, propulsion and space domain modeling and simulation.

Dynetics, a subcontractor to ATA, also does work for both NASA and SMDC by providing powerful solutions to technical challenges in intelligence, missiles, aviation, cyber and space.

Arnold AFB to begin controlled burning program

Conservation personnel have begun the controlled burning program on Arnold AFB this spring and continuing through the end of May.

According to Mike Black, restoration ecologist, the controlled burns are conducted base-wide as weather conditions and air quality permit.

"Controlled burning is an efficient management tool we use for improving wildlife habitat, controlling the vegetative competition in pine forests, reducing the amount of available fuels in case of wildfires, and eradicating invasive pest plant species to allow native plant species to propagate," he explained.

The average acreage burned annually ranges from 800 to 1,500 acres scattered across the entire base (39,081 acres). The controlled burning program is implemented by AEDC personnel with specialized training in controlled burning.

For additional information, contact the Arnold AFB natural resources manager at 454-5086 or the ATA Conservation Office at 454-4066.

Article compiled by Janaé Daniels, High Mach Editor.

**Think safety!
Coworkers,
friends and family
are counting on
YOU!**

Arnold gives back to local schools, encourages importance of education

Bel-Aire third graders tour, engage in experiments, hear about AEDC's role in space from Arnold officer



Lt. Col. Vanessa Bond, 716th Test Squadron commander, welcomed the students and answered their questions regarding the work conducted at AEDC. Colonel Bond explained the importance of ground testing prior to flight testing. (Photos by Andrea Stephens)

As part of their AEDC experience the students conducted an experiment designed to show how drag can affect an object in motion. The students attached a balloon to a straw, which was attached to a string. In the first part of the experiment, the balloon was attached to the straw and was released and the distance traveled was measured. In the second part of the experiment, a cardboard representation of landing gear was attached to the bottom of the balloon. The balloon was released and the distance was measured. After the experiments, the students discussed how different features of an aircraft, like wings and landing gear, can affect the way a plane flies. After the experiments, the students toured PWT and 16S and learned about projectiles and impact testing in the G-Range.



Capt. Cateria Isaac talks to the students about how AEDC has tested the Global Positioning Satellite (GPS). To demonstrate the GPS, the captain showed them a GPS unit used in many vehicles. (Photo provided)

Capt. Cateria Isaac, flight commander of the 718th Test Squadron's Space Ground Test Operations, was asked to be the keynote speaker for the end of Space Week activities at Tullahoma's Bel-Aire Elementary. Capt. Isaac put together a presentation about space for more than 500 students ranging from kindergarten to fifth grade. She included the history of the manned space program, showed then clips of the moon landing and the first shuttle launch. She also talked about what future shuttles would possibly look like and the possibilities and opportunities the Air Force has. "It was a thrill and an honor to be able to talk to the next generation and be able to inspire them," she said.

Tennessee Tech students debut experiments to AEDC personnel

Students from Tennessee Technological University (TTU) in Cookeville visited AEDC last week as part of the university's Capstone Project program.

Steve Carter, ATA test and measurement IT system architect was a sponsor for this group.

"Some students never get the opportunity to intern or co-op as an undergraduate," Carter said. "The senior Capstone project provides all electrical and computer engineering students with relevant product development and design experience.

"The reward to the industrial partner can be in the form of technologically advanced designs, the low-cost creation of intellectual property and the identification of prospective staff," he continued. "I expect that everyone involved in this program will see short-term and long-term benefits."

A team of six fourth-year students work with a faculty advisor on a project related to a business that they define, providing a range of services from research and feasibility studies to cre-

ating a viable prototype design.

Projects can span a wide range of topics from research, feasibility studies, product design, process design, component design or code design. Once the project focus is selected, the team begins development.

Four of the six TTU students participating in the Capstone project met with Carter Feb. 26 on AEDC's electrical-optical sensors used for measuring distances between model stores and aircraft or between other test articles in the Propulsion Wind Tunnel's four-foot transonic facility.

The other two students joined Rick Fraley, Air Force Radio Frequency Identification (RFID) project manager, to learn about AEDC's Ultra Wide Band (UWB) RFID prototype project initiated by a team from Arnold. The University of Tennessee Space Institute has partnered on this effort.

"If successful, this collaborative improvement effort will help reduce the UWB RFID reader/

receiver capabilities and ultimately reduce the overall costs and provide a much greater return on investment," Fraley said. "UTSI and Tennessee Tech are looking at improving upon the ultra wide-band RFID

technology that AEDC has been prototyping and evaluating for the last six months."

The RFID would be used to track man-in-the-cell, materials, equipment, and a wide variety of other ap-

plications as assets move about AEDC.

Fraley said the goal is to make the RFID, if funded, which currently resembles a thick bar code tag, into a unit that is smaller and thinner with a smaller battery

that lasts between seven to 10 years. The hope is also to make the RFID's circuit board more flexible.

Article compiled by Janae Daniels, High Mach Editor and Philip Lorenz III, Technical Writer.



From left, Carey Wofford, ATA outside machinist, J.T. Thompson, ATA captive trajectory system project engineer, look on as Steve Carter, ATA test and measurement IT system architect, shows a scale model of an F-15 ordnance rail with integral optical sensor attached, to Robert Gragg, Tennessee Tech University (TTU) senior and Dr. Ali Alouani, TTU professor of ECE (Electrical and Computer Engineering) and Brandon Brown, TTU engineering senior, during a recent trip to base to discuss the collaborative Capstone program. (Photo by Philip Lorenz III)

It's a small world after all

By Philip Lorenz III
Technical Writer

Despite the realities of the 'digital age,' it seems most people are still surprised to find how interconnected the world can become.

During their time at AEDC, the paths of Ed Mickle and Crawford Parrish Sr. had virtually never crossed until they recently transitioned to civil service positions in the plans and programs (XP) office in 2009.

Since the 1990s, Mickle had worked as an aerospace engineer in Arnold's wind tunnels and Parrish was an information technology planner for the center's contractor for 10 years.

In his earlier life, Parrish had served in the Air Force as a weapons systems officer flying in the F-111 Aardvark aircraft from the early 1980s to early 1990s.

One of Mickle's hobbies is building scale aircraft models and he has spent hours building models of Air Force aircraft, one of which is, yes, the F-111, Aardvark, a medium-range bomber and tactical strike aircraft.

"This is where the story lines converge," Mickle said. "Shortly

after arriving in the XP office, I moved my 'favorite' fighter models to the new cubicle. Parrish saw the new arrivals and zeroed in on the F-111 on my desktop."

Parrish was aware that a model company used the F-111 he had been assigned to as a guide for their scale models and they had photographed his aircraft.

"He wondered if I had built this particular model so he inspected the front landing gear door where the pilot and weapons systems officer's names are typically found," Mickle recalled. "To his surprise, there was his name – Capt. Parrish – affixed to my model."

This strange coincidence provided an enjoyable moment for their office and helped the newest members find common ground.

And the similarities don't end there," Mickle added. "Crawford and I each have a son who works at AEDC (for ATA) and both are named after their father's and yes, e-mailing can get confusing."

Mickle is now the senior manager for aerodynamics test facility planning for the capabilities integration division. Parrish is AEDC's acquisition program manager for CARA (Capability Analysis and Risk Assessment).



From left, Ed Mickle and Crawford Parrish Sr. found common ground when Parrish saw this F-111 model on Mickle's desk. Mickle is the senior manager for aerodynamics test facility planning for the capabilities integration division and Parrish is AEDC's acquisition program manager for CARA (Capability Analysis and Risk Assessment). Inset photo: This photo of the F-111 model on Mickle's desk shows the front landing gear door where the pilot and weapons systems officer's (WSO) names are found, in this case, WSO Capt. Crawford Parrish. (Photos by Philip Lorenz III)



Professionals gather together

Members of different professional societies met Wednesday to encourage membership in the Arnold Association of Professional Societies (AAPS). Representatives from American Institute of Aeronautics and Astronautics (AIAA), American Society of Mechanical Engineers (ASME), International Society of Automation (ISA), International Test and Evaluation Association (ITEA) and Tennessee Society of Professional Engineers (TSPE) were present to answer questions and provide information on society activities and benefits. The focus of AAPS is to establish joint activities of a group of professional societies to reduce the societies' workload and increase participation at society events. The first AAPS event, hosted by the Air Force Association, was held in October 2008. For more information on the AAPS contact Dr. Joe Sheeley at 454-7627. (Photo by Rick Goodfriend)

A tornado leveled his house but not his spirit

By **Janaé Daniels**
High Mach Editor

April 10, 2009, to most people was the beginning of Easter weekend, but for Art Fuller it was a day he will never forget.

The day started out like any other Friday, but by mid-day the clouds started shifting and began to darken. Severe weather alerts were popping up on employees' computers and the Giant Voice was warning of lightning within a 10-mile radius.

Before anyone knew what was going on the siren went off and everyone went down to their storm shelter.

"I was talking to my wife Debra who had just gotten home from being in town and all of a sudden the phone just went dead," Fuller said. "I just figured we got cut off. My son called back a few minutes later and said 'Dad the house is about gone.' I asked him what was he talking about and he said the house was almost destroyed."

At first Fuller thought his son was joking with him so he asked to speak to his wife.

"She said yes there was a tornado," Fuller said.

Fortunately, neither Fuller's son nor wife was seriously injured.

Fuller lives in Murfreesboro and takes the vanpool to work every day and wasn't sure how to get to his family.

"A stay-in-school, Laura Sellars, offered me a ride because she goes to school at MTSU [Middle Tennessee State University],"

he said. "When I got to Murfreesboro my wife had called and said they had taken her to the hospital to be treated for anxiety."

The EF-4 tornado created its path of destruction just off I-24 around the newly built Avenue shopping complex. Fuller's house was just across the interstate in a subdivision.

After a couple of hours at the hospital, Fuller was finally able to go home and see the damage.

"Well just getting there and seeing it I just said to myself 'ah man,'" he said. "And then I began to think how blessed I was that everyone was OK and how much worse it could have been."

Debra had gone to Walmart and was on her way home but decided to stop and get something to eat for lunch.

"She wasn't paying attention to the weather and when she got home she went upstairs," he said. "She got upstairs and all of a sudden she heard something that sounded like a train – my wife had always been told while living in Oklahoma, when you hear something that sounds like a train, it's probably a tornado – so the first thing she did was run into the master bathroom."

Fuller said the upstairs had two bathrooms back-to-back and each one had a closet on the side of it. There were total of three bedrooms on the top floor.

"She got inside the bathroom and closed the door," he said. "I remember her telling me the wind was so strong she had her body up

against the commode and pushing the door closed with her feet."

Fuller said after a while Debra saw some light and came out to find that the top part of the house had caved in around her – all that was left was where she was hiding. The bedrooms had caved in and there was nothing supporting the remaining bathrooms and closet.

With everything practically gone and nowhere to go, Fuller had to find a place to stay until the situation could be handled. They ended up renting an apartment while their new house was being built. They moved into their new house Thanksgiving weekend.

The biggest thing Fuller will take from this experience is to become more aware of the weather.

"Normally when weather happens most people just take it for granted and we've had tornadoes in Murfreesboro before but usually its north of us or just down south," he said.

Fuller credits the grace of God and Mother Nature for saving his family's lives.

"One thing I guess that sort of helped was we had a lot of trees in the front yard, maybe 10 or so, and when the tornado came through just about all those trees were gone," he said. "Only by the grace of God and those trees it didn't take the top of the house off."

A week after the tornado, according to the Rutherford County Emergency Management Agency, seven people in Rutherford County had critical injuries; about 818 homes

Before



This is the Fuller's house before the April 10, 2009 tornado hit. (Photo provided)

After



This is all that was left of the Fuller's house after the April 10, 2009 tornado. Fuller's wife Debra was hiding in the upstairs part of the house during the storm – this is all that was left of that portion of the house. (Photo provided)

were damaged, with 111 of those homes completely destroyed. Two-hundred ninety homes had major damage and 164 had minor damage. Two-hundred thirty-five more homes were directly affected in some way from the tornados. The estimated cost to businesses

and residents was placed at \$40.2 million.

The National Weather Service reported the tornado tore a 23.5-mile path through Murfreesboro and packed winds as high as 165 mph. The width of the storm was a half-mile and it was on the ground for 36

minutes.

According to Walker, tornadoes can occur year-round in Tennessee with peak months being April, May and June - April being the peak primary month. Walker said November also ranks high for annual tornado activity.

Despite wintry weather, engineer-for-a-day activities commenced

This year's National Engineers week took place Feb. 14-20.

Despite winter storms that week, students still experienced several activities during that week which included a Math-Counts competition, engineer-for-a-day program and tour at AEDC and concluding with a banquet. The Student Design Competition was postponed but was held a week later.

For the competition, eight high schools made up 22 teams from the local areas (Cascade, Coffee County, Franklin County, Huntland, St. Andrews-Sewanee, Shelbyville and Tullahoma. A group of home-school students made up the 23 team.

According to Paul Kelly, program coordinator, this year's design project was to design, build and test a vehicle with at least two

spinning wheels to be delivered over a height bar to a specified landing zone. The teams had to choose before launching the zone in which their vehicle would land.

The students were given a kit of materials containing specific items and they had two hours to complete the task.

As part of the competition, the teams were to make a presentation to a panel of judges.

The presentation had to address aspects of their design which they thought would make their design succeed.

The top three teams and prizes went to the following teams: first place was Hunter Bray and Jared Ariel from Huntland High School; second place was Robert Forde and Samuel Sherrouse, home-schooled and third place went to Ryan Qualls and Anne

Kelly from Coffee County.

Kelly admitted this year's design proved to be a challenge to most teams.

"A teacher accompanying the students said this was one of the most challenging design projects she had seen at this competition but added that the students had a great time."

Article compiled by Janaé Daniels, High Mach Editor.



A student explains to his partner for the design competition how he thinks the vehicle should work in order to launch properly. (Photos by Rick Goodfriend)



Engineer-for-a-day students take a tour of 16S and other center facilities during their visit in observance of National Engineers Week.



A student puts the final touches on his design before the competition at the Hands-On Science Center.



Two students create their design for the competition.



A student ponders through the design phase of the student competition at the Hands-On Science Center.

Gen. Gossick Team Excellence Award: Arc THAAD Heatshield Team



The Arc THAAD Heatshield Test Team was recognized as the Gen. Lee V. Gossick Team Excellence Award winners for the quarter - July through December 2009. The team executed a short-notice, high visibility test to reduce risk for Missile Defense Agency flight testing. Team members are: 1st. Lt. Alex Henning, Mark Smith, Gary Hammock, Kevin Thompson, Ezra Owens, Bryan Webb, Nathan Lister, Mike Routh, Michael Turri, Curtis Winstead, Jimmy Gustafson, Warren Shells, Byron Mayes, Gerald Norton, Stuart Elam, Troy Davis, Larry Stovall, Bryan Petty, Mike Hogwood, Larry Phipps, Mark Downs, Thomas Campbell, Kevin Lovvorn, Bob Boswell, Derrick Burton, Mickey Cowan, Paul Denton, Joel Gregory, R.D. Green, Jeff Harvey, Carl Hill, Phil Jacobs, Eric Mitchell, Danny Owens, Tim Scott, Bill Hopkins, Norman Smith, Robert Sotherland, Bob Williams, Dave Simmons, Roger Kraft, Stuart Coulter, Robert Baltz and Annette Painter. (Photo by Rick Goodfriend)

Technical Achievement Award: *MD Interceptor-in-the Loop Test team*



The AEDC Technical Achievement award was presented to the Missile Defense Interceptor-in-the-Loop Test team for fulfilling a critical national need to evaluate kinetic kill weapons operationally relevant engagements against hostile ballistic missiles. Team members are: Jim Burns, Capt. Catercia Isaac, Kim Mead, Randy Nicholson, David Brannon, Mary Breeden, Mark Brown, Mitchell Brunner, Mike Buckner, Ricky Bush, Greg Burt, Ted Cartwright, Phil Clark, Nelson Crouch, Ed Dorman, Matthew Evans, Mike Gallagher, Jeff Gastineau, Randy Hartman, Henry Horne, Robert Huffer, Deborah Jackson, Earl Keich, Ben Klinger, Mike Lazalier, Heard Lowry, Joel Mansfield, Joe McCabe, Loraine McElroy, Nichol Northcutt, Tom Payne, Terry Prince, Rick Reopke, Debora Richards, Wayne Richards, Melissa Russell, David Schwer, Mike Scott, Brian Smith, Charles Smith, Heidi Snively, Sid Steely, Jeff Stevenson, Steve Taylor, Charles Trussel, Harold Turrentine, Ray Underwood, John VanScoten, Bob Weiten, John Williams, Aaron Wojcik and Daniel Zielinski. (Photo by Rick Goodfriend)

First female Air Force general dies

Gen. (Ret.) Jeanne M. Holm, 88, who opened doors for women in the military as the first female general in the Air Force and the first woman in any military branch to reach the rank of two-star general, died Feb. 15.

From 1965 to 1975, General Holm was the highest-ranking woman in the Air Force, which had been resistant to accepting women in its ranks.

Women were not allowed to fly and, except for nurses, were not permitted near the front lines during wartime.

Almost from the moment she was appointed director of a small corps called Women in the Air Force in 1965, General Holm strategically advanced the role of women while fighting tactical battles with an entrenched male power structure.

Using a combination of tact and high-level maneuvering honed by years of duty at the Pentagon, she increased opportunities for women in the Air Force and other branches of the military.

She banished outdated uniforms for the women under her command, secured plum overseas assignments that had long been denied and expanded the field of jobs available to women.

In 1971, one year after almost retiring in frustration, she was promoted to the rank of brigadier general, as the first woman in the Air Force to receive a general's star.

Two years later, she became the most visible

symbol of the progress she advocated when she became a two-star major general, the first woman ever to reach that rank in the U.S. military.

General Holm was often a lonely but prescient voice for change in the military, championing many ideas in the 1970s that did not find full acceptance until years later.

She called for women to be admitted to the service academies, to participate fully in campus ROTC programs, to be allowed to serve as pilots and to have greater roles in combat — all of which have come to pass.

She also worked closely with future Supreme Court Justice Ruth Bader Ginsburg, then a lawyer for the American Civil Liberties Union, on the case of *Frontiero v. Richardson*, which reached the U.S. Supreme Court in 1973.

A female Air Force officer, Sharron Frontiero, had been denied housing and medical benefits when she claimed her husband as a dependent. In a landmark decision, the Supreme Court ruled that the military could not withhold benefits from women that it granted to men.

"I can say in absolute candor and honesty that we wouldn't have women in the Air Force without Jeanne Holm," Air Force Brig. Gen. Jean E. Klick told the *Oregonian* newspaper in 1990.

"She came up at a critical time, when there was a big move in the Air Force that wanted to do away with women altogether.



General Holm

She was the one person who was smart enough, shrewd enough and persuasive enough to handle that job."

Jeanne Marjorie Holm was born June 23, 1921, in Portland, Ore., and was raised by a single mother.

She was a silversmith when she joined the Army in 1942 and worked primarily as a truck driver during World War II.

After two years at Portland's Lewis & Clark College, she reenlisted in the Army in 1948 and transferred to the Air Force a year later.

"I was flat broke," she recalled last year to *Investor's Business Daily*. "I slept in the car along the way."

She had planning roles in the Berlin Airlift and became a personnel officer. In 1952, she was the first woman to attend the Air Command Staff College at Maxwell AFB in Alabama.

After further study at the University of Maryland and elsewhere, she received a bachelor's degree from Lewis & Clark in 1956.

She was assigned to NATO in Italy in the 1950s

and had long stints at the Pentagon, where she encountered opposition from old-guard officers, including Gen. Curtis LeMay, Air Force chief of staff from 1961 to 1965.

"At times it got really depressing," General Holm told the *Oregonian*. "When you were face to face with some of the garbage they were handing out, it just wore you out. One time, in 1970, I handed in my retirement papers. I'd just had it up to the eyeballs."

But when a new general took over the Air Force's personnel office, he began to see things Gen. Holm's way, and policies quickly changed.

When Gen. Holm retired in 1975, her decorations included the Distinguished Service Medal and Legion of Merit. She advised Presidents Gerald R. Ford, Jimmy Carter and Ronald Reagan on women's issues and, in 1982, published a history, "Women in the Military: An Unfinished Revolution," which she revised in 1992.

A *New York Times* reviewer called it "a classic work in its field."

She published a book in 1998 on women in World War II and helped plan the Women in Military Service for America Memorial.

For many years, she shared a home with retired Air Force Lt. Col. Norma Loeser of Edgewater.

Survivors include a brother.

Article by Matt Schudel, *Washington Post*.

Milestones



Terry Cowan

40 YEARS

Terry Cowan, ATA

35 YEARS

Michael Biankowski, ATA

30 YEARS

Tom Best, AF
Patricia Winters, ATA
Robert Gray, ATA
Robert Moore, ATA
Stephen Reynolds, ATA
James Ordway, ATA
Joseph Gallagher, ATA

25 YEARS

Mark Felts, ATA
Vert Hartman, ATA
Freida Clouse, ATA

20 YEARS

Dennis Holmes, ATA
Carey Rose, ATA

10 YEARS

Michael Lazalier, ATA
Bart Jones, ATA

5 YEARS

Charles Ray, ATA
Thomas Campbell, ATA
Stacy Parker, ATA
Mike Champion, ATA
John Allan, ATA
James Daniel, ATA
Randy Vinke, ATA
Kenneth Vassar, ATA

Vincent Lawrence, ATA
Bronwen Griffith, ATA
Joel Nalin, ATA
Gary Hammock II, ATA
Charles Brannan, ATA
Donna Spry, ATA
Nicolas Reed, ATA
Ezra Owens, ATA
Tony Buchanan, ATA
Charles Trussell, ATA
Carl Hill, ATA
Jeremy Morris, ATA
Jean Mihigo, ATA

INBOUND MILITARY

Master Sgt. Michael Arena, AF
Capt. Ashton Hainge, AF
Staff Sgt. Jennifer Stokes, AF
Maj. Mitzi Weems, AF
Capt. Garrett Bruening, AF
Lt. Col. Leland Davis, AF
Lt. Col. Gregg Leisman, AF

OUTBOUND MILITARY

Lt. Col. Robert Perrin, AF
Maj. Brian Brown, AF
Lt. Col. James Colebank, AF
Lt. Col. James Kennedy, AF

RETIREMENTS

Maj. James Smith, AF
Master Sgt. Bryan Larson, AF
Col. Joel Speight, AF
Lt. Col. Vernon Scribner, AF
Col. Scott Raytheon, AF
Temple Bowling, AF
Bill Gray, AF
Terry Cowan, ATA
Dennis Lankford, ATA
Richard Oliver, ATA
Fredrick Battles, ATA
James McKennon, ATA
Curtis Perryman, ATA

NEW HIRES

Randal Miller, AF
Richard Walker, AF
Robert Brock, AF

Arnold Golf Course 454-7076

Mulligan's Grill is open seven days a week from 7 a.m. to 2 p.m. Try the "Good Morning Breakfast" special Monday through Friday. This includes two eggs, choice of bacon or sausage, hash browns and one biscuit and gravy for \$4.50. Breakfast is served until 10:30 a.m. Lunch specials for February are **Monday:** hot ham and cheese sub, fries and fountain drink for \$6; **Tuesday:** cranberry walnut chicken salad croissant, fries and fountain drink for \$6; **Wednesday:** turkey club panini, fries and fountain drink for \$6; **Thursday:** chili cheese dog, fries and fountain drink for \$6; **Friday:** club sandwich, fries and fountain drink for \$6. Try the soup of the day with a sandwich. Mulligan's Grill meals are a great value and include unlimited drink refills. Call ahead for advance or to go orders at 454-7076. Remember to show your Members First Plus membership card for a ten percent discount on purchases of \$4 or more.

A **range ball machine** has been installed at Arnold Golf Course. In addition to tokens, a preloaded card can be purchased which will allow use of the range after hours and at a discounted rate. Range lighting is now available for night hitting. Discounts range from 15 to 30 percent depending on the quantity purchased.

Arnold Lakeside Center 454-3350

The **Air Force Hoops program** is underway. Last year more than 22,000 entries were made in the Air Force's National Collegiate Athletic Association Division 1 Men's Basketball Championship on-line bracket tournament promotion. This year promises to be even bigger. The Air Force Hoops promotion gives Air Force sports fans (eligible users of Services programs and facilities over the age of 18), the chance to win big prizes by selecting teams in the NCAA Division 1 Men's Basketball Championship Tournament. Picking the right teams is not required to win prizes. Earn a chance to win just by registering and entering bracket selections. Pick up a game piece at Arnold Lakeside Center (no purchase required) and register on-line using the code on the game piece. Then on March 14 fill in your tournament bracket selections. Up to ten brackets may be played. Picks can be made and changed, but final picks for all rounds must be submitted by 5 a.m. March 18. Participants must be 18 years or older. The first place prize of \$10,000 is sponsored by Coca Cola. The second place winner receives \$5,000; third place is \$2,500 and fourth place is \$1,000. The NCAA Men's Division 1 Championship Tournament has been a mainstay for sport aficionados for decades. Now, even the novice can take part in this fun and exciting event while enjoying food and beverage specials as well. For more information, stop by Arnold Lakeside Center or call 454-3350. No federal endorsement of sponsor intended.

The Arnold Lakeside Center will open to the

public on March 13 to host the **First Bridal Fair**. The event will be from 1-6 p.m. with multiple vendors expected to include cake decorators, photographers, make-up artists, dress designers and sales, wedding planning service providers, gift shops, floral shops and more. ALC staff will be available for menu planning and event booking. Eligible patrons of the ALC who book their event will receive a complimentary Air Force Catering Wedding Planner (while supplies last). A Salad Bar and Fruit Buffet will be served in the Four Seasons Room from 1-4 p.m. Cost is \$7.95 for Members First Plus members and \$8.95 for nonmembers. Children age 12 and under will pay \$3.95. Canned sodas and bottled water will also be available throughout the day for \$1 each. Call 454-3350 for more information about the event and vendor booth space availability and registration. Vendor spaces are 10-foot-by-10-foot and cost \$40. Additional space may be allowed by special request.

Celebrate **St. Patrick's Day at the Arnold Lakeside Center** March 17 from 5-9 p.m. An Irish Buffet will be served to include Corned Beef & Cabbage, Beef & Irish Stout Stew, Beer-Baked Irish Beef, Boxy, Colcannon, Potato Asparagus Bake Sesame Green Bean Salad, Irish Bread and more. Because this event is also a Membership Night there is no cost to Members First Plus members and their spouse. Nonmember price is \$8.95 per person. A children's buffet of hot dogs, chicken nuggets, pizza and macaroni and cheese will also be provided. Cost for children age twelve and under is \$4.95. Reservations are required for this event and may be made by calling 454-3350. Deadline to sign up is March 12. Entertainment will be provided by the Jim Wood Trio from 6-9 p.m. playing traditional holiday music and other songs for dancing. A special presentation movie, "The Princess and the Frog," rated G, will be shown starring voices of Anika Noni Rose and Bruno Campos. This modern twist to a classic tale is about a beautiful girl named Tiana, a frog prince who desperately wants to be human again and a fateful kiss that leads them both on a hilarious adventure through the mystical bayous of Louisiana. There will also be random drawings throughout the night for Members First Plus members present.

Movie nights are every Thursday at 6:30 p.m. with dinner available from the Express or Pizza menus from 5-9 p.m. The schedule for March is: **March 11** – "Old Dogs," rated PG starring John Travolta and Robin Williams. Two best friends – one unlucky in love divorcee and the other a fun-loving bachelor – have their lives turned upside down when they're unexpectedly charged with the care of 7-year-old twins while on the verge of the biggest business deal of their lives. **March 17** – Special Presentation for St. Patrick's Day Bash/Membership Night (see article for menu and event details): "The Princess and the Frog," G starring voices of Anika Noni Rose and Bruno Campos. A modern twist to a classic tale, a beautiful girl

names Tiana, a frog prince who desperately wants to be human again and a fateful kiss that leads them both on a hilarious adventure through the mystical bayous of Louisiana. **March 18** – "Amelia," rated PG-13 starring Hilary Swank and Richard Gere. Amelia Earhart was an inspiration to people everywhere and in the summer of 1937 she set off on her most daunting mission yet: a solo flight around the world. **March 25** – "Alvin and the Chipmunks: the Squeakquel," rated PG starring Zachary Levi and Jason Lee. The world famous singing pre-teen chipmunk trio return to contend with the pressures of school, celebrity and a rival female music group known as The Chipettes.

Friday night dining room specials available from 5-9 p.m. **March 5:** 3350 for more information about the event and vendor booth space availability and registration. Vendor spaces are 10-foot-by-10-foot and cost \$40. Additional space may be allowed by special request. **Friday night dining room specials** available from 5-9 p.m. **March 5:** 3350 for more information about the event and vendor booth space availability and registration. Vendor spaces are 10-foot-by-10-foot and cost \$40. Additional space may be allowed by special request. **Friday night dining room specials** available from 5-9 p.m. **March 5:** 3350 for more information about the event and vendor booth space availability and registration. Vendor spaces are 10-foot-by-10-foot and cost \$40. Additional space may be allowed by special request. **Friday night dining room specials** available from 5-9 p.m. **March 5:** 3350 for more information about the event and vendor booth space availability and registration. Vendor spaces are 10-foot-by-10-foot and cost \$40. Additional space may be allowed by special request.

Saturday availability and specials: **March 6:** Baked snapper with chilies, ginger and basil, \$10.95 for members, \$12.95 for nonmembers. **March 13:** Grilled teriyaki tuna, \$10.95 for members, \$12.95 for nonmembers. **March 20:** Talent Show limited menu: Choose from Grilled pork chops with portabella mushroom sauce or grilled chicken breast with cranberry sauce. Both entrees are served with green beans, garlic mashed potatoes, corn, garden salad and rolls, \$8.50 for members, \$9.50 for nonmembers. Children ages 3-12 may choose from chicken nuggets, corn dog or hot dog served with macaroni and cheese, green beans applesauce and lemonade or Capri Sun, \$6.50. **March 27:** Mongolian barbecue, \$9.95 for members, \$11.95 for nonmembers. The dining room is open on Saturdays from 5-9 p.m. unless otherwise specified. Please call for reservations to ensure these specials are available. All specials and times are subject to change without notice. Please call ahead to ensure availability and openings.

Family Member/Youth Programs (FamY) 454-3277

Youth Movie Night set for March 5 from 6-9 p.m. Ages nine and up are invited to the Open Rec. Center to watch a movie. There will be free popcorn and pizza by the slice for \$1. Juice and water will also be provided free of charge.

"UGT" – You Got Talent contest is March 20 to be held at Arnold Lakeside Center beginning at 6 p.m. Get your acts together for this event and sign up by calling 454-3277. Contestants can enter various categories to include solo, group, instrumental, per-

704th Services Division hours of operation:

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

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

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

Fitness Center – Monday-Friday 5 a.m.-9 p.m.; Saturday 8 a.m.-4 p.m.; Sunday 12-5 p.m.

Arnold Golf Course – Pro Shop and Driving Range daily 8 a.m.-5 p.m.. Mulligan's Grill: daily 7 a.m.-2 p.m.

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

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

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

formance. Group performances are limited to eight people and if comprised of different ages the category is determined by the oldest performer. All acts should not exceed four minutes. There will be prizes for the top three performers in each category. Some winners may qualify to go forward (by DVD recording) to Air Force level competition. A performer meeting will be held at the Youth Programs building (3055) at 4:30 p.m. March 16. Arnold Lakeside Center will offer a limited menu. Choose from Grilled Pork Chops with portabella mushroom sauce or Grilled Chicken Breast with cranberry sauce. Both entrees are served with green beans, garlic mashed potatoes, corn, garden salad and rolls, \$8.50 for members, \$9.50 for nonmembers. Children age 3-12 may choose from chicken nuggets, corn dog or hot dog served with macaroni and cheese, green beans applesauce and lemonade or Capri Sun, \$6.50. Call 454-3350 for dinner reservations.

Apply now for **Teen Aviation Camp**. This camp is open to eligible high school students entering their sophomore or junior year in fall 2010. This program is for those who would like to explore the U.S. Air Force Academy as a possible choice for college. The camp will be held June 5-10 with a wide variety of outdoor and classroom activities in Colorado Springs. Interested teens can pick up an application from Youth Programs. Selected participants are responsible for their airline and travel cost to and from Colorado Springs. Transportation, lodging and meals are covered upon arrival to location. All applications must be submitted to Youth Programs by March 22 and selections for the camp will be made April 23. For more information call 454-3277.

Easter Egg Hunt set for 11 a.m. April 3 on the Youth Center back lawn. There will be three ages groups: 2-5 years, 6-8 years and 9-12 years. Prizes will be awarded in each age group. Expect a special appearance by Peter Cottontail. Call to sign up by March 25.

Air Force Space Camp 2010 applications being accepted. The camp will be conducted July 25-30 at the U.S. Space and Rocket Center in Huntsville, Ala. Forty-eight scholarships are available for youth ages 12-18. Interested youth must complete the application and apply through the Youth Center. Applicants may not have attended previous space camps. This program is open to family members of active duty Air Force,

other branches of the military assigned to or living on Arnold Air Force Base, Air Force retired military, Air Force civilian and contractor employees, Air National Guard and Air Force Reserve members. Airline or private vehicle travel costs to Huntsville are the responsibility of the attendee. Lodging, meals and activity costs are funded at no cost to the participant. All applications must be fully completed and returned to the Youth Center by April 26. Call for complete details on how to apply.

Fitness Center 454-6440

Pot O' Gold Run set for March 31. This is an on your honor run for two laps around the Fitness Center trail anytime during regular hours. The first twenty-five to sign up get event T-shirts.

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

Open League and Women's League Softball will begin the end of April. Get your teams together now and sign us as individuals or teams. Games will be played on Mondays for Women's League and Tuesdays and Thursdays for Open League. Three games are played each night beginning at 5:30 p.m.

Wingo Inn 454-3051

Reservations for **Wingo Inn** can be made 120 days in advance. Room rates start at \$39 per night. Please call 454-3051 for reservations.

Gossick Leadership Center 454-3024

The Gossick Leadership Center (GLC) recently became part of the Services Division. Events such as meetings, conferences, luncheons, dinners, etc. may be booked through the Services Conference Center Manager (CCM) up to one year in advance. Requests must be made in writing by e-mail 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. Unofficial 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 454-3024.

Outdoor Rec (ODR) 454-6084

Paintball set for March 13. Ages 10 and older are invited to play. Meet at Outdoor Rec. at 9:30 a.m. Cost is \$20 and includes lunch. Remember to wear long sleeved shirts and long pants.

Trip to **The Lost Sea Adventure** coming May 15. Sign up by April 9 for this all day trip to Sweetwater, Tenn. This event is a tour of the largest underground lake in America. Two tours will be done. The adventure begins with a guided tour of the caverns. This involves a three-quarter mile round-trip walk on wide sloping pathways. While touring the caverns and underground lake guides will tell of the cavern's exciting and colorful history. They will also explain the fascinating geological development of the immense cavern rooms and rare formations. At the bottom of the cave board a glass-bottom boat for an exciting trip on the Lost Sea. The lake, covering more than 4 acres, is recognized by the U.S. Department of the interior as a Registered National Natural Landmark. This is due to the natural phenomenon of the lake as well as the abundance of a large collection of rare anthodites, more commonly known as "Cave Flowers". The lake is located 140 feet below the ground level, so coming up can be a hike. The tour lasts approximately one hour and fifteen minutes and the temperature remains a pleasant 58 degrees. Along with the boat ride and cavern tour, the flashlight tour delves into an undeveloped section of the cave. This portion lasts approximately one hour and thirty five minutes. Be sure to bring a flashlight and money for meals. The trip departs from Outdoor Rec at 8 a.m. and will end at 6 p.m. Cost is \$40 per person (\$25 for ages twelve and under). There will be a cancellation fee of \$10 if cancelled after April 30. There must be a minimum of 20 participants to take this trip. Maximum capacity is 26.

To advertise in
High Mach all
(931) 728-9040