



HIGH MACH

Serving the World's Premier Flight Simulation Test Center



Vol. 58, No. 14

Arnold AFB, Tenn.

July 15, 2011

Montgomery attends his 61st space shuttle launch

By Patrick Ary
Aerospace Testing Alliance

The last launch of the space shuttle program had plenty of suspense.

For days, NASA officials said the chance weather would allow Atlantis to launch as scheduled on July 8 was about 30 percent, but the skies cleared enough to allow a launch attempt.

Then at T-minus 31 seconds, the countdown clock paused while officials confirmed the Gaseous Oxygen Vent Arm had retracted.

Then, with just minutes left in the launch window, Atlantis took off and headed to the International Space Station as an estimated 1 million people watched from the ground – including ATA employee Peter Montgomery.

“It certainly was emotional for everybody,” said Montgomery, deputy chief of ATA’s Space and Missiles branch. “With any launch you get a certain amount of excitement and pride to see a system that’s so complex come together and for everything to work perfectly. So you always have that bit of pride in that accomplishment, but also knowing in the back of your mind that it’s the last time you’re going to see it go – that certainly weighs on you.”

Montgomery is familiar with the feeling of watching a shuttle take off in person. The last launch was the 61st one he has witnessed in person.

Montgomery has been fascinated with space since he was about 8 years old. One of his teachers was a space enthusiast, and during class he watched the Americans and Russians come together in space to orbit the earth together for the first time. He was hooked.

But growing up on the west coast, there was never an opportunity for him to go watch a shuttle launch. His first chance was Sept. 12, 1992, when Endeavour lifted off for STS-47.

Montgomery was a student at the University of Washington and had worked on an experiment that was on board.

“It was absolutely incredible,” Montgomery said. “It’s so hard to describe the difference of actually being there versus watching it on television. The sound, the feeling, the vibration – even the rumble in the ground – you really can feel all of that when you’re there, just the sheer power and an awe-inspiring sight as it takes off. That really hooked me.”

Montgomery ended up making the move east and has worked for ATA for the last 15 years.

He has attended several launches and several others that didn’t quite make it while he was there. Montgomery has been to about 10 launches that were scrubbed due to a variety of issues, from bad weather to sensor malfunctions.

As someone who plans vacations carefully around launch dates, Montgomery knew there would be some trips where he bolted out of town on a plane on short notice – and some carefully planned trips that would be a bust.

“I find the key to seeing these is really persistence,” he said. “When you go down to one of these, you have to allow some extra time for some of those variables that sometimes delay a launch.”

The trips are fun for Montgomery. He’s seen night launches – which are his favorite – and gets the opportunity to hang out with other shuttle launch enthusiasts, space industry employees and even meet a few famous faces like former vice president Dan Quayle.

Unlike many who make the trip to Florida to see shuttle launches, Montgom-



Peter Montgomery poses for a photo Feb. 6, 2010, in front of the space shuttle Endeavour before its launch for mission STS-130. (Photo provided)

ery has played a role in the shuttle program through his ties to AEDC.

He and other AEDC employees actually got to put their hands on the shuttle project when NASA asked AEDC to conduct foam impact testing for the shuttle’s return

to flight after the space shuttle Columbia disaster in 2003.

Foam from the shuttle’s external tank struck Columbia’s left wing during takeoff,

See MONTGOMERY, page 3

Air Force Academy cadets intern at AEDC

By Philip Lorenz III
Aerospace Testing Alliance

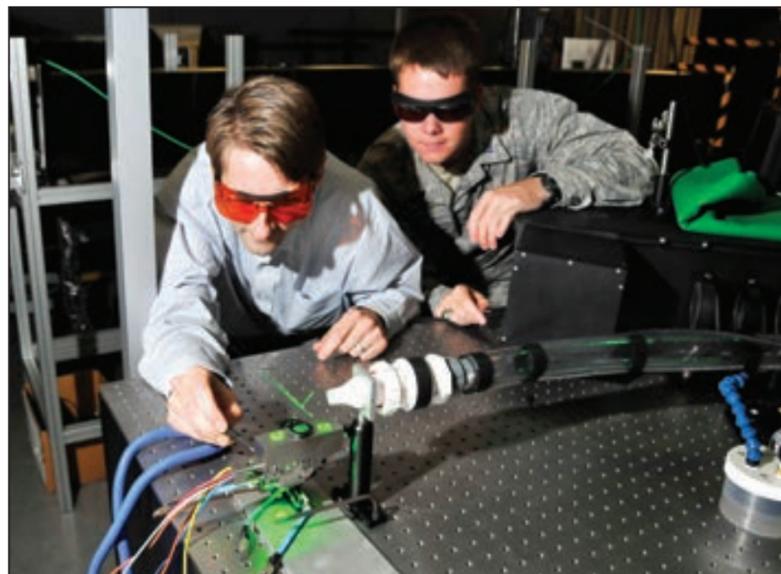
Five Air Force Academy cadets who recently spent five weeks at AEDC with the Air Force Academy’s Cadet Summer Research Program, enjoyed the break from studying and saw practical ways to apply what they had been pursuing academically.

Cadets Steven Alsen, Tate Montgomery, Andrew Petry, Bryan Rhoades and Jason Black worked in different areas of the base but shared some common experiences.

“Coming to Arnold AFB has been a great opportunity,” said Cadet 1st Class Petry. “I am a hands-on learner, so it was nice to get out of the classroom and be able to apply some of the knowledge I have gained in my three years at the Air Force Academy.

“My project allowed me to see aspects

See CADETS, page 3



From left, Applied University Research, Inc., Vice President for research and development, Dr. Todd Lowe, and Air Force Academy Cadet 1st Class Andrew Petry, inspect a sub-miniature three component laser-Doppler velocimetry (SM3 LDV) system before it was installed in a small wind tunnel for a test at AEDC. (Photo by Rick Goodfriend)

Celebrating AEDC’s 60th Anniversary



Employees enjoyed a barbecue lunch last Friday to celebrate AEDC’s 60th anniversary. The picnic, which was held at the Arnold Lakeside Center, wrapped up celebration activities, which included a 5K Fun Run/Walk and a golf scramble. On July 2, AEDC was recognized for its contributions to the local community at the annual Kiwanis air show and fireworks celebration. For more photos of the picnic and air show, see page 7. (Photo by Rick Goodfriend)

Special AEDC 60th anniversary website online

To commemorate the 60th anniversary of Arnold AFB, AEDC is putting some of its history online at <http://www.arnold.af.mil>.

ATA’s Public Affairs office has gone through base archives and compiled a comprehensive online archive that features past base commanders, the history of AEDC and its previous incarnation as the Army’s Camp Forrest and information on the people who have paved the way for aerospace innovation throughout AEDC’s 60 years in existence.

Some notable items from the past include video and audio of President Harry Truman dedicating the base in memory of General Henry “Hap” Arnold on June 25, 1951. Videos about the mission of AEDC from decades past are also available for viewing.

Arnold’s base newspaper, *High Mach*, ran running several stories about the base and some of the historical work that has taken place in its facilities. Those articles as well as the “Since You Know” winners are posted on the website as they ran in the paper.

In This Issue....

Page 5



Airfoilers still flying after 50 years ... Page 9



It’s a ‘party in a class’ ... Page 10



HIGH MACH**Arnold Engineering Development Center**

An Air Force Materiel Command Test Center

Col. Michael Panarisi
Commander**Jason Austin**
Director,
Public Affairs**Steve Pearson**
General Manager,
Aerospace Testing Alliance**High Mach Staff:**
Kathy Gattis, ATA Public Affairs Manager & Executive Editor
Darbie Sizemore, Editor Information International Associates, Inc., Production

High Mach is published by *The Tullahoma News*, 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 Tullahoma News* of the products or services advertised.

For advertising information, call (931) 455-4545.

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

Summer is not a time for complacency

By Masao Doi
*Air Force Safety Center***KIRTLAND AFB, N.M. (AFNS)** – Summer is hot.

That's the theme for this year's Critical Days of Summer campaign, which kicked off May 27.

By now, you've read the summer safety messages in the base paper, or heard them from your supervisor, commander and safety professionals at all levels.

These messages include knowing the risks, having a plan and being a good wingman.

You've been enjoying the summer weeks so far and probably think everything is going well.

Did you know that we were into the seventh week

of CDS July 8, and for the past two years, the Air Force has lost two or more times more Airmen between now and Labor Day than in all of May and June combined?

In fact, we lost 14 out of 21 and 14 out of 16 Airmen in 2009 and 2010 respectively, to both on- and off-duty preventable fatalities.

Those are alarming statistics because our goal is zero mishaps and fatalities.

Now, it's as important as ever to set the safety example every day.

Summer is not the time for complacency.

As the weeks go by, don't let your guard down. Stay alert and reinforce safety at every opportunity

With NASA's final shuttle launch, JTF-STTS wraps up its historic mission

By Navy Capt. James Hineline
*JTF-STTS Commander***CAPE CANAVERAL AIR FORCE STATION, Fla. (AFNS)** – July 8 marked an important day in history as the world watched Space Shuttle Atlantis launch over Florida's space coast for its final voyage, bringing NASA's crewed space shuttle program to an end.

If you've followed NASA's space shuttle program, you are aware of the inherent dangers that can come with space exploration.

This is where Joint Task Force-Space Transportation System, or JTF-STTS, comes in. Acting primarily in a support role to NASA, JTF members plan, support and conduct search, rescue, medical evacuation and recovery operations of the astronauts and shuttle in the unlikely event of an emergency. With C-130 Hercules airplanes and HH-60 Pave Hawk helicopters pre-positioned prior to a shuttle launch, the JTF-STTS is prepared to initiate search and rescue operations instantaneously, should NASA officials request assistance.

The JTF also supports NASA's alternate landing sites at Edwards Air Force Base, Calif., and White Sands Missile Range, N.M., by providing medical evacuation and emergency personnel transportation capabilities during consequence management operations.

Reporting to U.S. Northern Command in Colorado Springs, Colo., the JTF is composed primarily of Air Forces Northern personnel based at Tyndall AFB, in Panama City, Fla. But don't let the name Air Forces Northern fool you; JTF-STTS truly is "joint" in every sense of the word. Each branch of military is represented in some capacity either during launch or landing operations.

HH-60 Pave Hawk helicopters with pararescuemen onboard are prepared to conduct search and rescue operations should the need arise. The Marines provide one of the C-130 aircraft and crews that refuel the helicopters.

Our Navy and Coast Guard brethren have JTF liaison officers who work on a specialized search and rescue team, led by a USNORTHCOM federal civilian, whose job it is to compute parachute and water drift providing a more accurate projected search area. By monitoring the ship activity of Navy and Coast Guard vessels in the area, these liaison officers advise me of what assets are

See SHUTTLE, page 4

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. Michael Panarisi
AEDC Commander

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://lpapro.arnold.af.mil/PORTALimages/Smoking area map. pdf](https://lpapro.arnold.af.mil/PORTALimages/Smoking%20area%20map.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.

you get with your family, co-workers or Airmen and civilians who work for you.

And, if you need other reasons, think of who's waiting for you at the dinner table.

Take a peek at your little ones in the back seat of your car.

Consider your co-workers, friends and others who count on you every day.

Summer is hot, but complacency can be dan-

gerous.

All of you are important to our Air Force and you mean a lot to those around you. So, stay safe this summer.

We look forward to seeing you in the fall.

Now, that is mentoring

By Lt. Col. Tom Angelo
*31st Force Support Squadron***AVIANO AIR BASE, Italy (AFNS)** – About 10 years ago, after enlightening me with, no doubt, another gem of wisdom that went over my head, the colonel said to me, "now, that's mentoring!"

Years later, I'm beginning to understand what mentoring really is and that we can easily miss it, even when it's right in front of us.

We often seek mentoring from the wrong sources, we don't always recognize its value, and we sometimes discount its merit when it doesn't have immediate application.

There are a few common mistakes I've seen and done that perhaps you or your Airmen can avoid. Here are five of my "lessons learned."

1. Seek mentorship from more than one person and along many dimensions.

Perspectives from different mentors can inspire and spark innovation.

Mentors from various backgrounds bring different ideas and approaches based on their life experiences and with several mentors, you'll expand your personal growth beyond just "the job."

Mentors can assist you across many dimensions and help you set and achieve goals in your professional, spiritual, physical or academic life.

No one mentor needs to fill all roles; freeing yourself from this idea allows you to seek short-term mentorship from a variety of sources.

"Situational mentoring" is a great way to get just-in-time advice for the short-term challenges we all face.

2. Don't try so hard that you end up with the wrong mentors – like ones who feel they need to mentor you only because they outrank you, or the boss who you feel has to be your mentor because of their position.

Rank or position are not always the best measures of success (blasphemy, I know).

Instead, look for those who you feel are most competent for the advice or counsel you need. Although you should keep an open mind to those who offer mentorship, try not to feel obligated to receive guidance from someone when it's just not a good match.

A skilled mentor should

feel when there's not a good connection, too.

3. The right mentors are not always who you think.

For example, peer mentorship can often be the most honest, though toughest to receive at times.

In 2007, a fellow squadron commander slyly did this to me, and although at the time I saw it as him just touting his unit's success, he was really mentoring me to improve my game.

Similarly, those junior to you can often teach you as much as your peers or seniors, as they can provide feedback for how your leadership is being received.

Reverse mentoring can also help senior members learn skill sets from more junior Airmen, such as information technology or different approaches to learning.

Don't be bounded by pay structures, either: enlisted Airmen, civilians, and officers can certainly benefit from mentorship regardless of the uniform or attire we wear.

It is critical to seek mentorship from within and outside your functional community – or even outside the Department of Defense or government environment.

4. Realize that mentorship can be both continuous and discrete.

Mentees often see mentorship only in small doses at regular intervals, such as documented feedback sessions, on the golf course, or in barstool conversations at the Club (which CAN be part of it).

Mentorship can be something we're subconsciously feeling or receiving – something in which we are immersed – that we don't need to think of, just like we don't think to breathe or blink.

Mentorship can happen on a daily or frequent basis when a supervisor is filling

a mentor role as well.

I've had several bosses who've asked me to look over their shoulders when typing emails to their bosses, who've jokingly, but seriously, called me out on slacking on my professional military education, or who've handed me a set of decisional slides to read through.

Those small doses happen pretty quietly from day to day, but speak in loud volumes when considered together; what seems accidental is really deliberate, when you're being mentored by someone who really cares about your development.

5. Realize that understanding can come much later in the process.

Airmen may find the whole mentorship process interesting, and they may learn something in their functional area, but the understanding (and possibly the application) can come later – even years later.

When your immediate boss is a senior officer, a chief master sergeant, or a senior civilian leader or executive, just watching them arrive at decisions can be a learning experience.

This learning experience can guide your counsel to them in the short term, but more importantly it's a skill you tuck away for later.

Experiences later in life re-affirm the value of the previously received mentorship, which will drive you to mentor others with passion and vigor.

I don't think I've broken any new ground here or advanced the academic literature on the topic of mentorship. However, in asking me to write about this, my former colleagues have once again played a part in mentoring me without even realizing it.

Now THAT is mentoring.

Begin march to Ground Zero



Members of the Joint Base San Antonio security forces community begin their portion of the 2,181 mile Ruck March to Remember July 12, 2011, from Lackland AFB, Texas. The walk will end Sept. 11 at Ground Zero in New York City. (Courtesy photo)

Air Force announces AFMC senior leader changes

WRIGHT-PATTERSON AFB, Ohio – The Air Force announced July 7, the re-assignment of Lt. Gen. Janet C. Wolfenbarger from Air Force Materiel Command vice commander to military deputy to the assistant secretary of the Air Force for acquisition at the Pentagon in Washington, D.C.

The Air Force also announced the President's nomination of Maj. Gen. C.D. Moore II, deputy director of the Joint Strike Fighter Program Office in Arlington, Va., for confirmation by the Senate to the rank of lieutenant general with assignment as AFMC vice commander.

As military deputy to the assistant secretary of the Air Force for acquisition, General Wolfenbarger will be responsible for research and development, test, production, and modernization of Air Force programs worth \$40 billion annually.

General Wolfenbarger's previous assignments include special assistant for command transformation to the commander



Wolfenbarger

and director of the Intelligence and Requirements Directorate, Headquarters AFMC, Wright-Patterson AFB, Ohio.

She has also held several positions in the F-22 System Program Office at Wright-Patterson AFB, served as the F-22 Lead Program Element Monitor at the Pentagon, and was the B-2 System Program Director for Aeronautical Systems Center from April 2000 through December 2002. She also commanded ASC's C-17 Systems Group and



Moore

was director of the Air Force Acquisition Center of Excellence.

She graduated from the U.S. Air Force Academy in 1980 with a Bachelor of Science degree in engineering sciences.

In 1985, she earned a Master of Science degree in aeronautics and astronautics from the Massachusetts Institute of Technology.

She also earned a Master of Science degree in national resource strategy from the Industrial College of the Armed Forces,

National Defense University at Ft. Lesley J. McNair in Washington, D.C.

As AFMC vice commander, General Moore will be responsible for providing acquisition management and logistics support for a variety of Air Force aircraft and weapon systems.

The command conducts research, development, test and evaluation of warfighter technology.

General Moore's previous assignments include deputy director of the Global Power Directorate in the Office of the Assistant Secretary of the Air Force for Acquisition at the Pentagon, and deputy director of the Capabilities Integration and Transformation Directorate at Headquarters AFMC.

General Moore served as the chief of air operations, Multi-National Forces-Iraq in 2004, and he is a command pilot with more than 3,000 flight hours in 30 types of aircraft.

General Moore also served at Wright-Patterson AFB during

previous tours as director, F-16 System Program Office, June 2002 to August 2003; as vice commander, Aeronautical Systems Center, September 2003 to August 2004; as director, F-22 System Program Office, November 2005 to May 2007, and as commander, 478th Aeronautical Systems Wing, May 2007 to July 2008.

He graduated from the U.S. Air Force Academy in 1980 with Bachelor of Science degrees in aeronautical engineering and political science.

In 1981, he earned a Master of Science degree in aeronautical engineering from Columbia University in New York.

He also earned a Master of Science degree in national resource strategy from the Industrial College of the Armed Forces, National Defense University at Fort Lesley J. McNair, Washington, D.C.

No dates have been announced for the pending moves.

Air Force Materiel Command Public Affairs Report

Montgomery from page 1

damaging the shuttle's thermal tiles and causing it to break apart during its return to Earth. NASA needed help, and AEDC was there to offer its workers' expertise.

Montgomery and other AEDC workers went to work at the

base's ballistics range facilities, firing foam at pieces of solid rocket boosters and learning what other systems could be impacted by foam that came loose during launch.

The information helped NASA

broaden its database of information and gain a better understanding of what problems the space agency could have with foam in the future.

"It was always my dream to work in this industry, and one of the parts of that dream was to be involved in something that would really make a difference," he said.

"This was an opportunity, out of tragedy, to really make a difference – to partner with NASA in getting the shuttle program back on track and getting the system flying again safely for future crews."

And when the shuttle Discovery returned the program to flight in 2005, Montgomery was there to see it.

He remembers the atmosphere at Kennedy Space Center being tense and nervous.

"There was a lot of nervous energy and a lot of relief as it went to orbit safely," he said.

"But really, you didn't relax until it returned, and I did go down for the landing as well. You really breathed a sigh of relief once it was back on the ground safely and things were moving forward again."

And the program moved forward until that last flight July 8. Out of the 61 shuttle launches he's attended, the last flight of Atlantis was near the top of Montgomery's list of favorites. He says it was an emotional moment for everyone there, but people were also optimistic about what the future will bring.

"Of course it's sad to see the program end, but look at what we've accomplished," he said. "This is the most complicated spacecraft ever made, and it's really performed fantastically. It's made the International Space Station a possibility.

"Quite frankly, in its current configuration, it just would not

have been possible to build that without this vehicle.

"We've also learned a lot just in advancing the technology of spacecraft – understanding more about reusability, where the spacecraft comes back and is used again and again. So we've learned a lot and it's been a fantastic vehicle, and as with any good program, the time has now come to wrap that up and move on to the next challenge.

"It's sad to see it go, but it's also a proud moment for me to have been a part – at least on a small level – with the work we've done here at AEDC."

Nominations sought for the E&CAC

Each year nominations are requested from the work force for members to serve on the ATA Employee & Community Activities Committee (E&CAC).

The committee has five vacancies for FY12 (three-year term) to be filled by ATA employees.

All members must be regular full-time employees.

If you would like to nominate someone to serve on the E&CAC, please submit his or her name to one of the following members: Peggy Glass, MS 1400, Bldg. 1103, 454-7475; Cindi Marshall, MS 2208, Bldg. 100, 454-4983; Stacey Lowe-Allen, MS 3000, Bldg. 451, 454-6803; or Suzanne Moore, MS 6200, Bldg. 760, 454-7352.

Nominations may be submitted by email, hand carry or base mail no later than Aug. 5. Elections will be held via email in September.

The purpose of E&CAC is "to provide a means for the ATA work population to demonstrate its commitment and sincere interest and concern for the general welfare of all ATA employees and the surrounding communities."



Peter Montgomery took this photo of the space shuttle Discovery's last flight in February 2011. (Photo provided)

Cadets from page 1

of the acquisition process I never knew existed. I worked daily with Air Force military and civilians, ATA contractors and even independent inventors from a small business who delivered a system through a Small Business Innovative Research contract."

Petry is a senior pursuing an aeronautical engineering degree.

"I learned a great deal of technical information about laser diagnostics and flow seeding, but more importantly I was able to peer into the life of a developmental engineer and project manager," he said. "My goal is to become a developmental/flight test engineer after commissioning so my experience at AEDC has been very informative."

Petry said the program that brought him and the other cadets to AEDC has ambitious goals.

"The Cadet Summer Research Program is much larger than sending a few cadets to one or two military bases," he said. "Cadets are sent all over the country and even to other countries to work with military, government or civilian institutions in academic disciplines varying from particle physics to political science."

Cadet 1st Class Montgomery, an aeronautical engineering senior, said, "Working at AEDC for the past month has been great; I've learned a whole lot here. I've gotten a great exposure to the engineering world, and I'm sure this experience will help me in the future."

Montgomery said the five weeks he spent at AEDC will have a lasting impact.

"Highlights from this past month have included learning how to run a computer program designed to solve structural dynamics, meeting the objective of my project and working with some of the smartest engineers I've ever met," he said. "I am

working on a project that deals with processing balance data to determine true static aerodynamic forces and moments.

"I've been developing an inertial model using a computational program that will correctly represent the sting and balance system used in wind tunnel testing. My contribution to this project has included meeting the objective of creating an accurate inertial model to be used for further analysis and identifying issues for further testing. I'm a rising senior at the USAFA [academy]."

Cadet 1st Class Alsen agreed with his fellow cadets, saying the summer program has already paid dividends.

"Working at Arnold AFB has been one of the best opportunities for me as a cadet," he said. "I learned a great deal about what needs to be done in order to complete a task. The best lesson was the amount of coordination that goes into a project.

"One of the highlights was being able to see an F-135 test and all of the work that goes into it. My focus is in propulsion so I was excited for that opportunity. Also, the chance to use my education and skills in a non-academic environment helped me to validate the countless hours spent studying.

"My project was Particle Image Velocimetry (PIV) Accuracy Analysis. Although there was coordination involved, I was the only person working on this project directly. This gave me a great sense of fulfillment being able to present work that was my own. I am a senior at the academy and my major is aeronautical engineering."

For Cadet 1st Class Rhoades, an aeronautical engineering senior, time spent at Arnold resulted in tangible benefits.

He said what made the experience particularly satisfying was,



The Air Force cadets, from left, Andrew Petry, Steven Alsen, Tate Montgomery, Bryan Rhoades and Jason Black, pose for a group photo during a tour of AEDC that included a stop in the center's 16-foot supersonic wind tunnel. (Photo provided)

"Seeing the culmination of several weeks' worth of work pay actual dividends to the Air Force and not just to a grade."

Petry said spending time at AEDC and in middle Tennessee provided a balance of professional and personal benefits.

"The work-related highlight of my visit was being able to assist in the delivery and initial testing of a new laser Doppler velocimetry probe," he said. "Other highlights of the trip included briefing the AFMC commander on the technology behind laser flow diagnostics and exploring the local area.

"My main contribution to the SM3 LDV (sub-miniature three component laser-Doppler velocimetry) system involved characterizing what type of flow seeding technique works best for this new technology.

"AEDC owns several flow seeders, which are basically fog machines. Different flow seeders are optimized for certain wind tunnel conditions based on the sizes of particles they create and the rate at which they create

them. I created a database of information about each flow seeder so that the SM3 LDV system can be fully and efficiently utilized in future testing.

"All the cadets here also found that southern Tennessee is a great place to relax, unwind and recharge after another tough semester."

Get ready to donate! Red Cross Bloodmobile making August AEDC visit

The American Red Cross Bloodmobile will be at AEDC Aug. 15-19.

Employees may donate at any location during work hours, subject to supervisory approval. All blood types are needed, but there is greater need for Type O.

Donation times are from 10 am to 3 p.m. each day. The donation schedule is as follows: Aug. 15 - ETF; Aug. 16 - PWT; Aug. 17 - A&E; Aug. 18 - ASTF; and Aug. 19 - Main Cafeteria.

To be eligible to donate you

must be healthy, at least 17 years old, weigh at least 110 pounds and not have given whole blood in the past 56 days or a double red cell in the last 112 days. There is no upper age limit.

You may not give blood if you have received any notification asking you not to donate.

Please bring ID or your donor card.

If you have any further questions, please call Leslie Myers RN, BSN at the Dispensary, extension 5387 or 5385.

Exploring East Africa

Capt. Jeffery Hartberger: From aircraft mechanic to aerospace engineer

By Philip Lorenz III
Aerospace Testing Alliance

Not long after Capt. Jeff Hartberger returned from an 11-month long deployment to the Horn of Africa, he reflected on how much a degree in engineering has changed his life.

Captain Hartberger, who recently joined AEDC's Turbine Engine Ground Test Complex, said his professional journey began more than 20 years ago, when he enlisted in the Air Force as an aircraft mechanic. After several years of depot-level experience, he came to a major decision, one that changed his life in more ways than he would ever have imagined.

"I was working at Tinker (AFB) and I saw all the engineers come up from

the depot, come over and tell us, 'Hey, fix it like this or do this to repair that aircraft,'" he said. "I thought, there is no reason why I can't go do that. So, I started taking classes down at OU (Oklahoma University) and ended up getting my degree."

Captain Hartberger, who first reported to AEDC three years ago to work in the technology branch, said earning his bachelor's degree in aerospace engineering opened more doors than he realized.

After earning his commission, his first assignment introduced him to an explosive environment.

"I was a warhead design engineer down at Eglin AFB in [the] Air Force Research Laboratory's Munitions Directorate," he said. "We would go out on the

range and set off new types of 250/500 pounders."

He said his time at AEDC has been an "eye opening" experience, for both personal and professional reasons.

"It's such a small, tight-knit military community here," he said. "Being right up next to some unique engineering facilities and getting involved with hands on stuff is very cool. You don't get opportunities like this a lot of places you go – being involved with all these unique [and] huge test facilities is really cool."

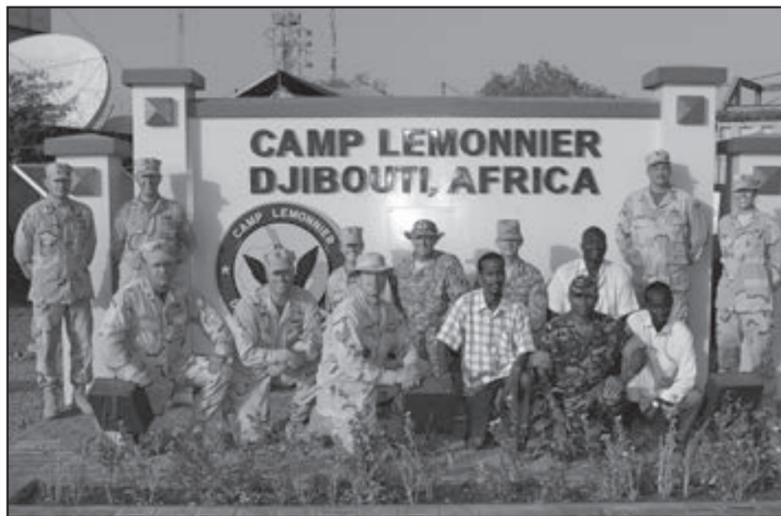
As an Airman, he had deployed to Saudi Arabia on a few occasions, but his almost year-long deployment to Africa provided the captain with an even more memorable experience.

Originally, Captain Hartberger had volunteered for an assignment as a country duty officer at the joint operations compound for the African-Command, monitoring field activities in different countries for United States African Command (AFRICOM).

"I thought Africa would be a different type of deployment, something a little bit different and it was," he said.

As it turned out, Combined Joint Task Force – Horn of Africa (CJTF HOA), covering eastern Africa, really needed an engineer.

"They were extremely short on civil engineers," Captain Hartberger re-

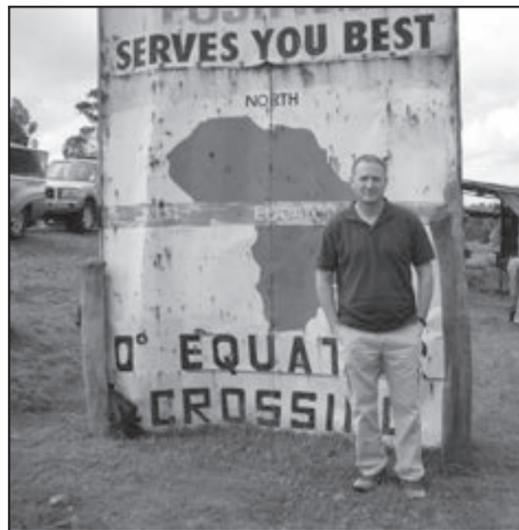


From left, AEDC's Capt. Jeffery Hartberger, Cmdr. Steve Sims, BUC Guy Routt, CEC Chuck Coffin, Lt. j.g. Matt Manskar, Tech. Sgt. Jay Taylor, 1st Lt. Ike Bradlich, Abdullah Hassanale, Master Sgt. Michael Cook, Comoran Task Force Liaison Officer Lt. Moudjadin Ayo, Abdi, Lt. John Mietus and Capt. Elena Mares pose for a group photo at Camp Lemonnier at Djibouti, Africa. Captain Hartberger spent 11 months deployed with Combined Joint Task Force - Horn of Africa (CJTF HOA) of the United States African Command (AFRICOM) as the Seabee project manager on the construction of schools, clinics and various military projects. Hassanale, Ayo and Abdi were the team's translators. Captain Hartberger's deployment took him to nine countries in East Africa. (Photo provided)

called. "I ended up being the Seabee project manager while there. I managed all construction projects that were completed by military construction forces, mostly [Navy] Seabees (construction battalions), 150 men, with a 13-man Army team also that rotated in about mid-tour for the CJTF-HOA."

Captain Hartberger said he got an unrivaled cultural and inter-service education.

"Probably the most interesting part of the deployment was working on the task force with other U.S. services, with the foreign militaries and working with local government officials," he said. "We had a British Army O-5 [lieutenant colonel] who was the deputy J3 [Plans and Program Officer] (The J3 director was an Army colonel). Within J3 I worked in J34 for a Navy O-6 [captain]. He was the lead force engineer. We also had li-



Capt. Jeffery Hartberger stands next to a sign in Kenya, northwest of Nairobi that denotes that this location is at the equator. (Photo provided)

aison officers on the task force from many of the east Africa countries.

"I interacted with AFRICOM, U.S. embassies, USAID (United States Agency for International Development), French military, several east African militaries, several east African government of-

officials, local village elders and local school headmasters.

"I spent a lot of my time traveling around east Africa to a lot of different countries, visiting projects. [On] one of the Seabee projects, we were drilling

See AFRICA, page 5

Shuttle from page 2

area, these liaison officers advise me of what assets are nearby to support rescue efforts.

During landing operations, Army personnel assigned to the JTF pre-position UH-60 Black Hawk and UH-1 Iroquois helicopters around the landing site and are prepared to conduct SAR operations as required.

Air Force rescue units make up the rest of the flight crew, and Air Force personnel on the JTF perform a host of other duties, including personnel, operations, logistics, communications, public affairs, common operating picture manager and a medical expert, along with several liaison officers from various specialties.

The launch of Atlantis not only marks the 33rd and final flight for the space shuttle program, but also the final mission for JTF-STTS.

As NASA's space shuttle program comes to an end, I reflect on the opportunities my military career has granted me, opportunities such as this, to be a part of American history. It has been my honor to serve as the JTF-STTS commander. Good luck and Godspeed to Atlantis and the STS-135 crew.

Stewart enjoys finding diamonds in the rough ... literally

By Patrick Ary
Aerospace Testing Alliance

Rod Stewart knows how unbelievable his pastime can sound.

Stewart, AEDC's scientific technical information officer, attended an acquisitions class recently. To get acquainted, everyone in the class had to tell four things about themselves. The kicker: one fact was not true, and everyone in the class had to guess which one it was.

Stewart told them he hunts for diamonds as a hobby. No one believed it, and he's not surprised.

"A lot of people just haven't heard of it," he said.

But Stewart does go on the hunt at least once a year, and he has more than a dozen sparkly pieces of evidence for the non-believers.

Stewart's diamond-hunting hobby started about seven years ago, when he bought a camper for the family and was looking for places within driving distance to spend some vacation time. He happened across Crater of Diamonds State Park near Murfreesboro, Ark., — about 500 miles from his home in Tullahoma.

"I thought it would be interesting," Stewart said. "My little boy loved to play in the dirt, so I said 'Hey, let's just try that.'"

The park touts itself as the only diamond-producing site in the world that is open to the public. For a few dollars a day, tourists can search for diamonds in the rough — a 37-and-a-half-acre field that is

the eroded surface of an ancient volcanic pipe. What visitors find, they keep.

The park says thousands of tourists visit every year and try their hand at diamond hunting. Stewart says there are 15 to 20 regulars who spend most of their time there hunting. He puts his own expertise somewhere in between the two groups.

"There's a lot of science to it," he said. "And there's just a lot of history in just knowing where has been dug, what they did back when it was a commercial mine and those kinds of things."

Most casual visitors to the park sift through the dirt near the surface, taking that surface soil and washing it to find precious stones. But the hardcore hunters — including Stewart — go deep. His most recent visit in April consisted of digging a hole about eight feet deep to find the more gravelly dirt that he said is more likely to yield diamonds.

Once he finds the "good dirt," Stewart loads it into five-gallon buckets and stores it in a storage bin. Once he's taken out what he wants and fills the hole back in (a park rule), he uses a series of screens to wash away excess dirt followed by a special screen called a saruca. When the saruca is rotated and shaken, the heavier sediment moves toward the center. He then flips the saruca and its contents, looking for that familiar flash.

"There's a lot of quartz," he said. "Once you do it right, all the 'heavies' are in the center. Of course, quartz is heavy. But if you let it dry just a little bit, the quartz will kind of turn milky and if there's any sun-



Rod Stewart, AEDC's scientific technical information officer, looks up from the bottom of an eight-foot hole he and a friend dug in the Crater of Diamonds State Park in Murfreesboro, Ark., in April 2010. Many casual diamond hunters search the dirt on the surface for precious stones, but Stewart likes to dig for certain types of soil that have a better chance of holding diamonds. (Photo provided)

shine, the diamonds will shine just like a flashlight. It's amazing how the light will shine off of them."

It took Stewart two years of searching before finding his first diamond. In the years since then, he's found a total of 16. Most of them aren't particularly valuable; he's never had them appraised, but he keeps them in a bank vault all the same. His two biggest finds were a 2.67-carat diamond that he estimates is worth at least \$2,600, and a 1.25-carat yellow diamond he had mounted in a ring for his wife.

There are big finds out there in the dirt. Just this year, a visitor found an 8.66-carat white diamond. It's the third largest diamond on record to be found at the park since 1972, and it was found three days after Stewart left the park.

"I know exactly where she found it," Stewart said. "I guarantee you I stepped within three feet of it. She was digging some. You get a heavy rain and it washes all the stuff down, and you can just dig where the heavies would be. That's what she was doing. But I'm sure I walked within two or three feet of that diamond. It was just covered up. I didn't know it."

The excitement of possibly finding a big diamond is there, but Stewart knows the odds of retiring off a big find in the dirt are miniscule. So why spend at least a week every year digging holes from sun-up to sundown?

"The thing I like about it: nobody can bother you," he said. "You go out there and you work as hard as you want to work. It's just peaceful."

"It is kind of funny, because I don't necessarily go out there expecting to find anything. I just go for the fun. But I guess

finding something is the icing on the cake."

He is quick to caution that the odds of finding a valuable diamond are small, but that hasn't stopped some of his co-workers from tagging along once they've heard about it. ATA structural and mechanical engineer Russ Groff has made the trip to the park twice and wants to go back.

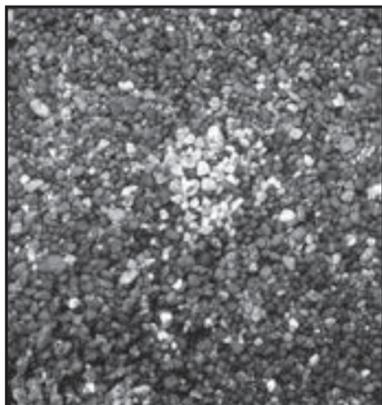
"It's a lot of work," Groff said. "You have to do the work yourself; it's interesting and keeps you busy, and every once in a while if you find something, you get a little incentive."

Groff has the incentive; on his last trip, he found a diamond in the hole he and Stewart dug that was nearly three-quarters of a carat. He said he's certain that one day Stewart is going to find the big one, because of his dedication to the work.

"He's enthusiastic about it," Groff said. "He's pretty scientific and pretty thorough. He's researched this quite a bit. It's not like he's not going out there without a plan. He usually has a plan, and each successive time he goes out he does a survey. It's not totally haphazard."

Stewart said he'll take anyone along with him who's interested, but he cautions that they have to be ready for some hard work if they want to increase their chances. Stewart estimates that he and a friend he met at the park who lives in Dayton, Ohio, moved four tons of dirt this year — all of it by shovel.

"I say it's hard work; if you want to just go out and walk around you can do that," he said. "But if you want to increase your chances, it's going to be hard work. So get ready. Carry Advil, because you're going to need them."



Above, Stewart stores the dirt from his diamond digging in special storage bins at Crater of Diamonds State Park. Once he has collected all the dirt he wants to sift through for diamonds, he fills in the hole and spends time washing the dirt through several types of screens. Two small diamonds are shown in the center of a pile of sediment that Stewart screened. Diamonds are found in the park soil on a regular basis; Stewart has found 16 since he started searching as a hobby about seven years ago. "It's amazing how the light will shine off of them," Stewart said. (Photo provided)

Africa from page 4

wells around Ethiopia. I'd go out and meet village elders and talk to them. I definitely got to go out and do a lot of hands on with local people."

Captain Hartberger also experienced some of the tensions that exist in Africa during a construction project to improve living conditions in one country.

"The water wells in Ethiopia were for local villages," he said. "The location of a water source could be a significant factor in quality of life for a village. It could also be a political issue when you have villages competing for limited water resources."

During his deployment, Captain Hartberger's son had a world map, allowing the 5-year-old to follow his father's travels.

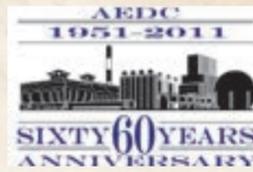
Not surprisingly, the captain's reunion with his family was another high point after a long deployment.

"It makes you really happy to come home," he said.



A Tanzanian boy stands inside a new school constructed west of Dar Es Salam by the Navy Seabees, or construction battalion workers. The new school is next to a Tanzanian Army base. (Photo provided)

Celebrating 60 Years of *Progress*



Congratulations to the picnic door prize winners:

Thermal mug: Mark Clark, Katherine Anderson, Gary Burnett, Dylana Seay, Kevin Glaser, Brad Pearson, Dennis Holmes, Ed Tucker, Paul Mosley and Jon Rhea

Beach Towel: Danny Hall, Gerald Stone and Tyler Herod

Gym Bag: Mike Tatum and Ashley Gunn

Bag Chair: Terry Rayfield

Gym Bag Combo T: Stuart Fulkerson

Gym Bag Combo B: Joe Boyer

Mono Bag Combo 1: Emily Elizondo

Mono Bag Combo 2: Paul Franklowski

\$20 Services Bucks: Larry Davis

Round of Golf with Cart: Jill Russell

One Night at Dogwood Ridge: Harold Turrentine

One Night at Crockett Cove: David Ruckstuhl

Two Hour Boat Rental: Jerrime Ball

Hap's Pizza: David Hurst

Lunch at ALC: Pamela Rawn and Karen Clippard

Dinner for Two at ALC: Tim Bagley



Picnic photos by Rick Goodfriend. Firework and air show photos provided.

Happy Anniversary AEDC!

Coffee Airfoilers are still flying after 50 years

By Philip Lorenz III
Aerospace Testing Alliance

Page 16 of the April 1964 issue of *High Mach* features a photo of the Coffee Airfoilers Model Airplane Club.

Men and boys pose with the model airplanes they fly at the club's flying field, which, like today, is located adjacent to the Arnold Golf Course

AEDC's Rich Eichel and Eric Bjorn know how much has changed and what has remained the same since the club first came into existence in 1959.

Like many of those early members of the club, the two men's interest in model airplanes began when they were in grade school. The ties to the Air Force and AEDC are also common bonds shared by many current and former club members.

Bjorn, the chief of AEDC's Strategic Planning Branch, first came to Arnold in 1998 as an Air Force officer. Four years later, he transitioned to a government civilian job at the base.

"My father was an engineer and introduced me to building and flying model airplanes when I was about 10 years old," he recalled. "We began with stick and tissue rubber band-powered airplanes, progressed to control-line (wire fly), and then finally to radio-controlled gliders and glow fuel-powered airplanes."

Eichel, a member of ATA's safety staff, came to AEDC in April 2002 and joined the Coffee Airfoilers in 2003. The 26-year Air Force veteran said he

has loved flying model airplanes almost as long as he can remember.

Eichel's Air Force career, both the early part and later when he transitioned into safety, have been useful to advancing his model airplane hobby as well.

"I started out in electronic countermeasures (ECM) stuff and aircraft," he said. "I did maintenance on electronic countermeasures [on] fighter aircraft, bomber aircraft, like jamming radio signals and missile guidance systems. And anything to do with the aircraft electronic countermeasure system, I was what's known as an electronic warfare [technician]."

Currently the safety officer and club photographer for the Coffee Airfoilers, Eichel said that his earlier technical background has helped him in learning to build and fly the latest model airplanes over the years.

"[I] used to build what we called wire flyers back in grade school in the 1950s," he said. "When you first start flying, it's not a question of if you're going to crash but when you are going to crash. They have flight simulators [and for] \$100, \$200, you can buy the best flight simulator going."

"It's almost the same thing as flying the Predators. [Once] you get all the functions down, you learn how to take off, land and the difference [is] it doesn't cost you an airplane."

"Simulators weren't around when I learned. It was basically fly and crash until you got good enough



Eric Bjorn, chief of AEDC's Strategic Planning Branch, holds a favorite model, an AT-6 Texan that he patterned after the AeroShell Aerobatic team that performed at AEDC's 50th anniversary air show. (Photo provided)

where you could take them off [the ground] and successfully land with minimal or no damage. You know, take offs are optional, landings are mandatory. If you have a radio glitch or some other electrical or mechanical malfunction and it goes out of control, you become a spectator, but with current radio technology that's not real prevalent."

Eichel spoke about how many viable radio-controlled aircraft models he flies.

"Currently flyable, ready-to-go aircraft, probably about 35," he said, from one with a 12-inch wing span, up to six and half feet.

"I've got three of the little miniature micros," he said. "I've got a P-51 Mustang and a T-29 Trojan and Aronica Champ. [And] with the current technology, increased bandwidth and programmable radios, aerobatics are nothing. You can get into the field and actually be flying an airplane that has the full characteristics of pretty much a big airplane for

around 100 bucks, with transmitter and everything, ready to go. All you do is charge the battery."

Bjorn said his first club experience with radio controlled (RC) model airplanes began during college.

"I dabbled in RC at the Air Force Academy where there is an active 'model engineering' club but really didn't do too much more RC until provided the opportunity to fly at the Coffee Airfoilers' flying field."

Once at AEDC, Bjorn said an "out-of-town friend," a doctor, was visiting him at the base about 11 years ago.

"I was showing him AEDC," Bjorn said. "On the way back to Tullahoma, we drove past the Airfoilers' flying field and saw a group flying high-performance gliders. I told my friend that I used to do that and he said we should go check it out."

"The Airfoilers were nice as can be and put on a demonstration for us. My friend was so excited that he decided right then



Rich Eichel, a member of the ATA safety staff, retrieves one of his planes during the Coffee Airfoilers Model Airplane Club's annual electric-only flying event in 2010. He said the aircraft "bit the dust" on the next flight, a case of operator error. He said when flying a plane upside down, it is important to keep your orientation. In his case, he pulled back on the stick, which brought the aircraft down, rather than pushing the stick forward, which was now up. (Photo provided)

and there that he wanted to try RC airplanes, specifically electric-powered airplanes. I decided to go along with him and get back into it. I've been enjoying the club and its members and events ever since."

Bjorn also spoke about why he has stayed with the club and the hobby over the years.

"The challenges vary with your time in the hobby, what you're trying to achieve, and your current skill level," he said. "Obviously, you are not in the cockpit when you fly RC and so you don't have a first-person view like 'full-scale' pilots or even drone pilots."

"So when you first be-

gin flying RC, maintaining orientation and executing basic flying maneuvers are a challenge. Once orientation issues become second nature, as you increase speed, begin acrobatics, enter competition or just begin to push your personal envelope, there are model building, equipment, and flying challenges to overcome. That's what keeps this hobby interesting.

Bjorn, like Eichel, has a "small" fleet of model aircraft.

"It's crazy but I have about 25 airplanes and all of them are ready to go right now," Bjorn explained. "They are all

See FLYING, page 12

For Darrell Townsend, it was all about the right timing

By Philip Lorenz III
Aerospace Testing Alliance

When Darrell Townsend graduated from high school and secured what seemed like sound employment, he knew something was still missing.

"At the time I had no extra education [beyond high school], had what I felt like at the time was a good job, but I wanted to do more," he said. "So, I went and checked out the Air Force and those guys promised, 'Hey we're going to train you and help you get some skills that you can carry on,' [which] sounded good."

Initially, he wasn't sure he had made the best choice, but soon realized a door of opportunity had been opened to him.

"He actually did me a favor," Townsend said of the recruiter. "The training that I received – I was a security policemen to start off with, my first four years – helped get me a chance to grow up, see some of the world. Then, after I got done with that, I started seeing myself going to college. I think it just gave me a window to mature a little bit."

Townsend, who joined AEDC's work force in 2004 as an instrument technician, now works as a project/construction manager with ATA civil engineering division. Townsend said his grandfather worked at AEDC as a laborer and his three brothers all have ties to Arnold.

He said two of his best career decisions were joining the Air Force and the day he finally decided to apply for a job at AEDC.

"The timing was right," said the father of two, who went on to attend college after his first tour of active duty.

"I went to Trevecca [Nazarene] University," he said. "I



AEDC's Darrell Townsend stands next to Vince's Cross, a wooden cross erected in 1902 near McMurdo Station. The cross commemorates Seaman George T. Vince, who was the first man to die in McMurdo Sound. Townsend spent a couple of days in New Zealand getting outfitted to go to Antarctica. He spent three weeks at McMurdo and also had an opportunity to fly on one mission to the South Pole to deliver supplies. McMurdo Station is a U.S. Antarctic research center located on Ross Island in the New Zealand-claimed Ross Dependency on the shore of McMurdo Sound in Antarctica. (Photo provided)

have a bachelor's degree in management and human relations, also [attended] the Community College of the Air Force, and trained as an aircraft electrician and a machinist welder."

Townsend pointed out that his combination of formal education, military training and work experience has paid off in more ways than he would ever have thought possible.

After serving 20 years in the Air Force, with a combination of active duty and reserve time, he is now a master sergeant. This included being activated after 9/11.

Recently Townsend completed two schools for senior Air Force enlisted personnel at Maxwell AFB, an achievement which he is proud of and humbled by at the same time.

"I just finished two military schools, the Air Force First Sergeant Academy and the Senior NCO (non-commissioned officer) Academy," he said.

As the 118th Airlift Wing Maintenance Squadron first sergeant, Townsend knew attending the schools was a prerequisite to holding that position and ad-

See TIMING, page 12

Brad McClure still counting his blessings



Damage from a February tornado to Brad McClure's home did not result in personal injury or death, a blessing he didn't take for granted. (Photo provided)

By Philip Lorenz III
Aerospace Testing Alliance

Brad McClure considers himself blessed.

When the tornado "season" was getting underway earlier in the year, his home was damaged, but not destroyed.

Trees were laying on the front of the house and the shop behind it was missing its roof and a large door and block wall was blown out on two sides as well.

"There's plenty to do on the farm now since the EF2 tornado hit on Feb. 28," he said. "I currently reside there with my two 80-year-old parents on the farm. We were under a tornado warning on the base and as we were going to shelter I called them. They were at a doctor's appointment in Nashville on their way back. We were thankful that they weren't home. We were also lucky that our two horses escaped injury during the tornado, they were just covered in mud and very scared."

McClure, who came to work at AEDC in 2005, is an ATA systems engineer in the Facilities Operation and Maintenance Group. Professionally, he feels particularly fortunate in the path his career has taken.

He said his 24 years of technical, engineering, quality and manufacturing experience in both engineering and management roles has paid off in many ways.

"I did a lot of project work on ergonomics and improving safety by reducing injuries on the line that impacted people's quality of life," he said, referring to his time working for Nissan. "That was real rewarding for me to do that kind of work and usually we would do that through semi-automation of equipment and also lift assist devices, projects involving re-engineering of equipment, processes and facilities to improve assembly line work like that."

See BLESSED page 12



IN FOCUS:

Health and Wellness

Fitness Center asset draws cycling enthusiasts



From left, Kevin Duncan, the Fitness Center's fitness assessment monitor, and Kevin Sipe, an aerospace engineer in the Capabilities Integration Branch of the plans and programs division, cycle a course on the Computrainer at the Fitness Center. (Photo by Rick Goodfriend)

By Philip Lorenz III
Aerospace Testing Alliance

Kevin Sipe, an aerospace engineer in the Capabilities Integration Branch of the plans and programs division, has been using AEDC's Fitness Center since it first opened sometime in the early to mid-1990s.

A triathlon participant who is always trying to fine tune his workout experiences, Sipe had earlier learned about something called a Computrainer, a stationary bicycle with a computer-generated program that simulates cycling courses.

"There are three Computrainers at the Arnold Fitness Center that were purchased in 2007," he said. "With three Computrainers, cyclists can ride together and even race each other or against a pacer."

Initially, he had learned about the Computrainer during a demonstration at the Guntersville, Ala., State Triathlon. Subsequently, Sipe discovered that professional cyclists use the device to improve their performance and maintain a proper pedaling technique that is critical to preventing knee problems.

Air Force Marathon opens new online transfer program

WRIGHT-PATTERSON AFB, Ohio (AFNS) – For a limited time, any Air Force Marathon, Half Marathon or 10K registered runner who is not able to participate in the Sept. 17 event can transfer his or her entry to a non-registered runner through the marathon's new Transfer Program.

The online transfer form is available at www.usafmarathon.com.

All registered runners have until July 24 to transfer their marathon, half marathon or 10K entries to an unregistered runner.

The transfer form must include the runner's confirmation number received upon registration.

Once the form is completed, the transferring runner will be emailed a link with a unique transfer code and passcode to send to a runner of his or her choice, who can then register for the appropriate sold-out Air Force Marathon event.

The codes will be emailed within four business days.

Only registered participants can transfer their spots in the Air Force Marathon. New runners will be required to complete a form and pay a transfer fee. Transfer fees are \$30 for the full marathon, \$25 for the half marathon and \$20 for the 10K. All new runners must complete the transfer process by July 31.

"This is the first year we've

"My personal fitness goals are to ride as long as I can and without injury," he said. "The Computrainer allows me to maintain a higher level of fitness during inclement weather periods while continually analyzing my pedaling for proper technique."

"The Tour de France is only one of the hundreds of cycling courses that are provided with the Computrainer. The courses are anywhere from three miles to more than 100 miles in length. We have recently added some of the local triathlon bike courses from the Mach Tenn, Cedars of Lebanon and the Knoxville Half-Ironman. The Computrainer allows the cyclist to ride a multitude of actual courses, rain or shine, while analyzing pedaling efficiency."

Sipe said a pedaling efficiency of 40 to 60 percent is the initial level accomplished by many cyclists using the Computrainer.

"They are virtually only using half of their leg power," he said. "Continued use will enable the rider to maintain pedaling efficiencies of 70 to 90 percent, while decreasing the chances of leg injuries due to improper pedaling."

Part of last year's record-breaking, 12,000-person runner field starts the half marathon at Wright-Patterson AFB, Ohio, Sept. 18, 2010. Already surpassing the 2010 mark and selling out in early June, the Air Force Marathon is creating a transfer program to take advantage of every coveted spot. (Air Force photo by Michelle Gigante)



Part of last year's record-breaking, 12,000-person runner field starts the half marathon at Wright-Patterson AFB, Ohio, Sept. 18, 2010. Already surpassing the 2010 mark and selling out in early June, the Air Force Marathon is creating a transfer program to take advantage of every coveted spot. (Air Force photo by Michelle Gigante)

registered runners wanting to make a transfer can find others seeking a coveted spot in the Air Force Marathon on the marathon's Facebook page in the Discussions section. The Air Force Marathon is open to the public and is a Boston Marathon qualifying race. For more information, visit the website at www.usafmarathon.com.

Registered runners wanting to make a transfer can find others seeking a coveted spot in the Air Force Marathon on the marathon's Facebook page in the Discussions section. The Air Force Marathon is open to the public and is a Boston Marathon qualifying race. For more information, visit the website at www.usafmarathon.com.

'A party in a class' AEDCers get in shape with Zumba



Lisa Vass instructs a Zumba class May 25 during a Health and Wellness Fair at the AEDC Fitness Center. She conducts the classes Tuesday and Thursday afternoons. In the background is class participant Wilsie Ford. (Photo by Rick Goodfriend)

By Shawn Jacobs
Aerospace Testing Alliance

A party in a class.

That's how Lisa Vass describes the Zumba class she teaches twice a week at the AEDC Fitness Center.

"It's like a Latin cardio dance," Vass said. "Most everything is done to Latin music, so you've got that little Salsa rhythm and all that kind of stuff and you just move. Everybody has a good time. It doesn't matter if you have rhythm or if you don't have rhythm."

"It doesn't matter if you're on the same foot as everybody else in the class. It's just about coming in and enjoying the beat of the music and moving the body."

Vass, who is also a fitness instructor at the Manchester Recreation Center, has taught

Zumba at AEDC for about three years. She also teaches indoor cycling at the base Fitness Center.

Zumba includes dance and aerobic movements with varied rhythms and resistance training to aid in fitness and weight loss, but Vass says the exercises can be tailored to an individual's fitness level.

"It can be done in low impact or you can go as high with it as you want," she said. "The more you put into it the higher the heart rate's going to get and the more cardio benefits that you're going to get from it. If you're someone who is very inactive anyway because of your health issue, you can still come and you're going to get your heart rate up because you're not used to it while keeping it low impact and your joints and your body safe."

Wilsie Ford, who works for Information International Associates (IIa) at AEDC, has been taking Zumba classes for about two years and said she enjoys all aspects of the exercise.

"I do it because it is good for your health and your soul," Ford said. "It also relieves all the drama that may come your way. No matter what you've been through during the day, when you get in Zumba, it's forgotten. It's a place to have fun, and I'd advise anybody – any age, any size – to try it out. If you don't have fun you can blame me, and as long as I'm there you'll have fun."

"It's a place to come and be yourself without worrying about what people will say."

See ZUMBA, page 11

Fitness Center staff available for physical fitness assessments

By Philip Lorenz III
Aerospace Testing Alliance

AEDC's leadership, like other Air Force bases, is encouraging everyone in the work force to take an active role in their health.

Physical fitness assessments are available to the following, active duty, National Guard, reservists, military retirees and DoD civilians who use the Fitness Center and are involved in programs there, according to Ron Stephenson, sports and fitness director at AEDC's Fitness Center. The assessments are not available to dues-paying contractors because of staffing levels at the Fitness Center.

Stephenson, who recently assumed the role as the Health and Wellness Center (HAWC) manager, said he and his staff will provide expanded fitness guidance, assessment and instruction.

"Eventually we'll be doing, probably once a quarter, a stress management class," he said. "Then, we'll also do things like cancer and diabetes prevention – cover those and other areas."

Stephenson said the HAWC program is an important asset for anyone who uses the Fitness Center.

"It addresses your major areas of health and wellness," he said. "We're a conduit to the military to make sure that they have all the tools they need to meet the mission and the fitness standards that the Air Force has mandated on them."

"It's an information flow, an education avenue, but there's



From right, Kevin Duncan, the Fitness Center's fitness assessment monitor, turns the computer screen to allow Tech Sgt. Naomi Bullock, the NCOIC of public health at AEDC's Medical Aid Station, to see her heart rate and other biomedical information. She is trying out the Fitness Center's new Microfit FAS-2 System. (Photo by Rick Goodfriend)

also testing and measurement included in that too. You test them according to the standards. Those are pretty much normal through any Air Force base."

Stephenson has a bachelor's degree in exercise science from Middle Tennessee State University and also took all the prerequisite courses for a degree in physical therapy.

"I will do some classes, but I will orchestrate a lot of them, too," he said. "Let's just pick one, diabetes prevention or diabetes care. I'm not a professional, but to offer a good class I'm going to bring in a professional who will be able to have models and be able to go into detail."

"I know about exercise and diabetes because it was part of my curriculum as an undergrad, but I'm going to use Dr. Rob Tessier from our Medical Aid Station on a lot of it or the

American Heart Association."

Stephenson said he also has downloaded a lot of additional information for use.

To help with the assessments, he recently purchased a Microfit FAS-2 System, a Federal Drug Administration-registered medical device. It is used for the measurement of body fat, weight, heart rate, blood pressure, flexibility and strength.

Also available is a stationary bicycle with a computer-generated program that simulates the entire Tour de France race with all the different conditions encountered during the real event. A computer screen shows a simulated course for the cyclist during the ride at the Fitness Center.

For additional information on the scheduling and areas covered by the physical fitness assessment programs and classes, call 454-6440.

Zumba from page 10

"It also helps with self-esteem issues," Ford said.

"I've seen it work. If you come in there shy, that won't last for long. It really changes your whole look on life."

Ford is very active and does several other exercises, including walking at lunch and working out at the Fitness Center twice a week and playing volleyball.

She says she can tell a difference since starting Zumba.

"My endurance is better," she said. "When I first started out, it didn't feel too good to me, but I was determined to stick with it.

"Now, I love it. I have to give props to Lisa. We are so blessed to have her as an instructor."

Vass said it does take a few classes before newcomers can really enjoy Zumba, and they are allowed to start at their own pace.

"The first time you feel lost," Vass said. "The second time it's like, 'Oh, it's not too bad.' The third time is, 'Oh, I think I can do this,' and then the fourth time is, 'OK, we're good to go.' You don't need to be in sync with the instructor; it doesn't matter."

Vass teaches the one-hour, coeducational classes on Tuesdays and Thursdays at 4:15 p.m., and there is no charge to members of the Fitness Center.

Zumba may be a lot of fun, but Ford said it also is a true workout.

"At the end she compensates us with something like the Electric Slide and the Wobble," Ford said.

"That helps us to forget all that hard stuff we did. Even though it's got some dance movement, it's for your waist, your stomach, your buttocks [and] your legs.

"It is all fun, and that's why I go. When I stop having fun, I will move on to something else."

Vass invites any interested Fitness Center members to show up for a class.

"If you want to work out [and] just have a good time, that's what it's all about," she said. "It's a party in a class."



Wilsie Ford of Information International Associates (IIA) at AEDC participates in a Zumba class May 25 at the AEDC Fitness Center. Ford, of Cowan, has been taking Zumba for about two years. (Photo by Rick Goodfriend)

Timing from page 9

vancing his career if he decides to stay in past 20 years. The fact that he attended the schools back-to-back is almost unheard of and something he is especially proud to have accomplished.

Townsend said everyone, including his family, co-workers at AEDC and with the Air National Guard have encouraged and supported him every step of the way.

Looking back on how joining the Air Force has impacted his life, Townsend said deploying around the world has been an education all unto itself, with many highlights along the way.

"Antarctica was one of them," he said. "That was one of the neatest trips. I went down there to support the New York [Air National Guard]."

"We were there for three weeks. Our runway was right on the ice. New York has that mission; they support the National Oceanic and Atmospheric Administration. They've got a lot of scientists in different camps down in Antarctica. So, the New York Air National Guard equips their planes with skis and JATO (jet fuel assisted take-off). They go down, land on the ice and then if there are supplies needed, they'll go out and airdrop them to these remote spots.

"During my trip to Antarctica I was an aircraft electrician assigned to the Tennessee Air National Guard. I was supporting the 109th Airlift Wing. It is part of the Stratton Air National Guard Base in Schenectady, N.Y."

In 2003, he deployed for two months to Saudi Arabia, two months in the United Arab Emirates, followed by two months in Kuwait before returning home. Some trips to Germany and a deployment to Puerto Rico followed that same year.

"I've gone to Afghanistan a couple of times since then," he said.

It was in 2003, after being activated into the full-time Air National Guard following 9/11, that working at AEDC became a vi-

able option for Townsend. "We went over to the desert [and] been there a couple of months," he recalled. "I was sitting out on a porch of the tent one day and one of my buddies from up on Monteagle Mountain, said, 'You know, have you ever thought about working out at Arnold Air Force Base?'"

"He said, 'Well, you know, there's a guy here that said he thought you'd fit in great out there.' He encouraged me to put in [an application] when I got back from the desert.

"I was asked to go down to Puerto Rico for a couple of months and while I was down there I submitted my application and next thing you know I was working at Arnold Air Force Base."

Townsend said he has been able to make good use of lessons learned, including those gained from his recent time at the U.S. Air Force First Sergeants Academy and Air Force Senior Noncommissioned Officer Academy.

This provided valuable lessons, especially about the other branches of the military. He heard retired Lt. Col. Herbert Carter, an original Tuskegee Airman, and Sgt. Maj. Irene O'Neil, the Marine Aircraft Group 13 Sergeant Major, share their experiences and challenges.

The sergeant major gave a motivating talk that Townsend said would make anyone consider joining the Marines.

Senior Master Sgt. Tim McClanahan, faculty devel-

opment lead at the Air Force Senior NCO Academy, said, "It is important for SNCOs (senior non-commissioned officers) to understand how our sister services and coalition partner services operate. So, when we are in a multiservice organization we can make the best decisions possible to take care of our subordinates as well as accomplish the mission.

"These guest speakers were chosen based on their past experiences. We want them to share the situations they were faced with and how they acted in order to overcome a challenging situation.

"We want our students to understand if faced with an overwhelming situation, they too can lead through tough times by applying principles taught here at the Senior NCO Academy."

Townsend said he was impressed by the senior leadership at the command.

"Chief Perry spoke with us as a group on the first day, performed PT (physical training) with us every other day and gave a safety brief every Friday," Townsend said. "He was very visible and approachable."

Townsend's advice to anyone who will listen is simple.

"Find a path that's going to be satisfying to you," he said. "I'm very happy with what I'm doing right now.

"Do something that you're going to enjoy and try to educate yourself on it and do a good job at it, and opportunities will come based on that."

Flying from page 9



Early members of the Coffee Airfoilers Model Airplane Club show off a few of their models at a mid-winter meeting in Tullahoma. The display ranges from gliders to radio controlled models. The program also offered an opportunity to teach junior members the fundamentals of trimming flying models. Club members above include, front row, left to right, William Neighbors, Paul Waldrep, W. L. Davis, Alan Webster, J. D. Waldrep, Jerry Amelang and Sam Waldrep. Back row, Gary Neighbors, C. M. Tuthill, L. F. Webster, Charles Myers, C. F. Anderson, W. Buchanan, J. R. Robinson and Eddie Robinson. (AEDC File Photo)

electric-powered, so all I have to do is charge the lithium-polymer batteries and go fly.

"I have many different types [including a] semi-scale Spitfire, P-51 Mustang, P-40 Warhawk, T-6 Texan, Tucano trainer, an F-18 with ducted fan, acrobatics airplanes, camera platforms for stills and high definition video, basically my own spy planes, drop platforms for parachute drops, flying wings, a 100-plus mph fly-fast model, helicopters and many sizes of fun-fly airplanes. It's always an interesting time as I decide which airplanes I'm going

to fly. I definitely have some favorites but also have some hangar queens that don't get out much."

Members of the club, both then and now, also fly gliders.

Eichel said some of the club's glider pilots are aeronautical engineers who worked here at AEDC and did wind tunnel testing, both during their careers and later to perfect their models.

The Coffee Airfoilers also fly model helicopters, dirigibles and operate model aircraft both outside and inside large buildings like local gyms.

From reading the club's

history, members have competed in large U.S.-based competitions and some champions were selected to represent the U.S. in international competition in places like Germany.

Club members still compete and often host local events.

The club is open to new members and has flight instructors who volunteer their services.

They fly in the evenings and most weekends, weather permitting.

Visitors are always welcome to drop by when members are at the flying field.



AEDC's Darrell Townsend poses near two Antarctic seals with Mount Erebus, an active volcano, in the background on McMurdo Sound, located on a tip of Ross Island. (Photo provided)

Blessed from page 9

McClure said working at a place like AEDC resonates for him partly for personal reasons.

"Actually my father, Fred McClure, worked here more than 30 years before he retired," he said. "I had several uncles who worked here as well, as I was growing up."

McClure, who is the father of three daughters, feels that AEDC is particularly well suited to his personal values.

"I really feel blessed that [I] was able to get a job here and work here," he said. "For most of my career I've worked for a company that valued family. And the supervisors here have been very understanding about that and there are not many places like that, but ATA is definitely one of those places.



Brad McClure takes his youngest daughter, Leah, on a boat ride on Memorial Day. (Photo provided)

It's the best job I've had."

As the news of devastating tornadoes and storms continue to dominate the news, McClure is continually reminded of his own experience.

"The thing that really overwhelmed me with the tornado was just how people in the community,

friends and family, came to everybody's aid – from one house to the next with chain saws [and] equipment," he recalled. "One friend of ours actually has his own business and work crew. He basically took them off what they were doing just to come and do whatever was needed, whether it was cutting a limb, pulling trees off of houses, getting on the roofs [and] putting tarps on."

Whether it's singing tenor for the worship team at King's Cross Church in Tullahoma or spending time with his youngest daughter, Leah, taking her fishing or hunting, McClure said life is rewarding in countless ways.

"This past fall she went out with me on a deer-hunting trip out here at the weapons range for the first time," he said. "We were lucky she actually got to see a buck in the wild for the first time, [saw it] saunter on by us."

Leah didn't want her dad to shoot the deer and McClure decided not to harvest the animal himself, but said his daughter appreciates the skills that go into hunting and fishing.

McClure hopes others, despite life's challenges, will continue to count their blessings.

Improving fitness starts with improving recovery, nutrition

By **Capt. Zach Garrett**

51st Aerospace Medicine Squadron

OSAN AIR BASE, South Korea (AFNS) – “If you want to be more effective, improve your fitness,” said Sir Richard Branson, who was knighted in 1999 and is currently worth more than \$4 billion.

While he is not a member of the military, I think his undeniable success justifies observing his methods. I will be clear and state that I am not advocating for everyone to adopt part-time residency status at the gym.

On the contrary, increasing the amount you exercise is not as critical to improving overall fitness as is proper recovery or nutrition. I think all three are important to overall health, but too often we don’t effectively prioritize these key components.

The first step in improving your fitness is improving your recovery. I do not limit this to recovery from working out. The daily grind itself requires a certain amount of recovery, which is where many individuals fall short.

They do not recover enough to support a couch-potato lifestyle, let alone an active lifestyle. Thus, beginning an exercise program without first establishing solid recovery habits will reduce the gains made from exercise.

There is no way around the physiological need for sleep. The standard recommendation is eight hours per

night and applies to virtually everyone. Achieving this does not have to occur in one night but can be a gradual change by going to bed just 10 minutes earlier than the previous night and continuing this trend until a more optimal sleep pattern is established.

One caveat is that your day-to-day energy levels and alertness will lag behind your sleep habits by about seven to 10 days. So you will have to achieve seven to 10 consecutive days of adequate sleep before you can expect to see the difference.

Following sleep, the next step in improving fitness is nutrition. Most of us will consume sustenance two to four times per day, but will not have a strong recollection of what we ate, let alone the exact caloric and macronutrient content of what we ate.

This is fine if your meal choices are vegetables and lean sources of protein 75 percent of the time. However, if this isn’t you, then you may need to evaluate your “tracking system.” This isn’t just for weight loss, because it’s possible to be “thin” but be as unhealthy as any obese or overweight individual.

So, while taking care of ourselves is something that can be difficult to prioritize above our other endeavors, it’s often that self care that can enable us to achieve more in the long run.

Firefighters cool off campers



Lee Brassfield, a driver/operator for the AEDC Fire Department, cools down a group of kids June 30 at Camp Adventure, a 10-week summer day camp sponsored by the Services Youth Programs and run by skilled professionals through the University of Northern Iowa. (Photo by Rick Goodfriend)

