

# Leading Edge

April 2004

Air Force Materiel Command



**Nowhere to run. Nowhere to hide.  
Enter the Raptor.**

Cover photo by Kevin Robertson

## LEADING EDGE

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## mission focus

- 4 Making fitness a priority
- 6 Focus on acquisition support

## mission progress

- 9 Can't rattle the Raptor
- 10 Piercing the storm
- 11 Readiness info
- 12 'Can you hear me now... over?'
- 13 AFMC people on the warfront

## features

- 14 Space pursuit
- 16 Shakin' down the B-52
- 18 'Gray beards' take flight

## department briefs

- 3 **Mission Briefs**
- 19 **News Briefs**
- 20 **People**
- 23 **Awards**



4



9



13



16



20



**AEDC  
primed for  
\$200 million JSF  
propulsion testing**

ARNOLD AIR FORCE BASE, Tenn. — Final upgrades were recently completed to a simulated

*F-35 Joint Strike Fighter (AF photo)*

altitude propulsion development test cell at Arnold Engineering Development Center, Arnold Air Force Base, Tenn. The upgrades are just in time for the \$200-million, eight-year engine test program for the F-35 Joint Strike Fighter (JSF) that begins this spring.

The upgrades were part of Phase IV of the center's Propulsion Consolidation and Streamlining program. Phase IV construction in Propulsion Development Test Cell J-2 began in late August 2003. Test cell crews conducted the facility checkouts to reduce the risks to the F135 engine test program.

The Pratt & Whitney F135 engine is the powerplant for the multi-national F-35 JSF. According to Marcos More, Aerospace Testing Alliance senior project manager, multiple engines in the

F135 Systems Development and Demonstration program will be tested at AEDC.

In 2002, AEDC officials also initiated a \$25-million upgrade to existing Special Test Equipment in addition to building unique major new engine support systems to simulate F-35 aircraft interfaces.

The upgrades are critical for the more than 5,000 engine-operating hours of testing planned for three of the center's propulsion development test cells, officials said.

AEDC employees designed, fabricated and installed most of the special equipment and modified several existing STE systems from the previous JSF concept development test program.

While designed for use during the SDD test phase, the new equipment and modifications will also support testing of the JSF alternate engine, the GE F136 scheduled for testing in fiscal year 2006. The STE upgrade continues on schedule for completion in 2005.

"Since both engines are designed to power the same aircraft, the new STE and modifications we make to test cells will be applicable for testing both engines," More said.

The first F135 engine is schedule to arrive at AEDC in early spring.

— AEDC Public Affairs

## SSG team tackles explosive 'Big Dig Project'

MAXWELL AIR FORCE BASE - GUNTER ANNEX, Ala. — Only a few wires away from losing communication to the aircraft control tower, the 455th Expeditionary Operations Group Communications Flight, Bagram Airfield, Afghanistan, were called into a hostile environment to fix the problem.

By the time the four-person team from Headquarters Standard Systems Group, Maxwell Air Force Base, Ala., arrived, only four of the 50 original pair copper connections to the precision approach radar site were still serviceable.

Without the connection from the radar site to the tower, all flightline operations would be grounded, including close air support missions. The lines were also unsecured and in plain sight of the enemy.

According to Senior Master Sgt. Gerald Muehling, superintendent of the shop, the base was targeted eight times and actually hit once by enemy fire.

"It was our job to install four underground conduits across the airfield," he said. "We knew that it was imperative that we work as quickly and safely as possible to get the job done."

The job, called the "The Big Dig Project," presented quite a challenge for the team since the airfield was only 93 percent cleared of mines when the work began. "The thought of crossing relatively large areas where there might be live munitions was definitely not a calming thought for any of us," said Sergeant Muehling. "But we had a job to do."

The team finished the job in three months.



*Members of the 455th Expeditionary Operations Group Communications Flight, Bagram Airfield, Afghanistan, restore the radar-to-control tower communications system. (AF photo)*

Their efforts were recognized when Gen. Richard B. Myers, chairman of the Joint Chiefs of Staff, visited the base and presented Sergeant Muehling with a coin on the recommendation of the commander and command chief master sergeant.

"It was really an honor to be part of an effort that made such a critical impact on mission success," said 1st Lt. Wade Bolinger, who was the flight commander. "Although it was a tough job, we were proud to do it, and we all felt it was a true privilege to serve our country over there."

—SSG Public Affairs

## Around the command

☆☆☆☆ Gen. Gregory S. Martin



# Making fitness a priority

If you're not exercising routinely and eating healthy, it's time to start. We have a little more than six months to ensure all 27,000 of our Air Force Materiel Command Airmen are in deployable physical condition. As part of an expeditionary force, we send our people on missions around the world where they face harsh climates, high altitudes, high and low temperature extremes, and generally austere environments.

Recently I read a trip report written by an AFMC Airman who had deployed to Kuwait. His unit came under 16 missile attacks during the three months he was there. He was required to wear about 40 pounds of protective gear while accomplishing normal duties. In his report he wrote, "Physical conditioning was absolutely critical to everyday functioning." In reference to doing his normal duties coupled with "bunker dives and a high stress environment," he wrote that he was "convinced that everyone in the Air

Force needs to be physically fit."

This is not something I want our Airmen figuring out after they've arrived at a forward location. Commanders must focus now on delivering a fit and ready force to meet expeditionary mission

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**"My goal is for every Airman in AFMC to score at least 75 points on the new Air Force Fitness Assessment by September 30."**

— Gen. Gregory S. Martin

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requirements. That means we must incorporate fitness into our everyday culture by providing opportunities during the duty day for our Airmen to exercise. And I expect commanders to lead from the front.

Here are a few implementation rules to follow:

- ✘ All members must be medically screened prior to any baseline or official assessment.

- ✘ Testing must be scheduled over the next eight months in a manner that minimizes the impact on medical group workloads.

- ✘ Review the specific Air Force guidance on managing those Airmen formerly in weight management programs or on medical deferrals.

- ✘ Assess individual mobilization augmentees and individual ready reservists during their next annual tour or inactive duty period.

- ✘ Contact your health and wellness center if you need help setting up a fitness program.

My goal is for every Airman in AFMC to score at least 75 points on the new Air Force Fitness Assessment by Sept. 30. This means you should strive to get a baseline assessment on every active-duty member in the next few months. Those that attain 75 points are "good-to-go" and have met the annual assessment requirement. Those who score marginal or poor have ample time to get fit and pass.

This is a cultural change for our entire Air Force, and I think it's very exciting. It's not about passing the PT test once a year; it's about living longer, healthier, more-productive lives. Get on board now and help bring about one of the most important changes our Air Force is experiencing — developing a force that is 100 percent fit to fight.

*Members of Gen. Martin's staff go for an early-morning jog at Wright-Patterson AFB, Ohio. The AFMC command section exercises as a group three times a week at the crack of dawn. (AF photo by Larry Davenport)*





*Gen. Gregory S. Martin, AFMC commander, along with Lt. Gen. Richard V. Reynolds, AFMC vice commander, perform strength-training exercises at Wright-Patterson AFB, Ohio. General Martin led the physical fitness charge Feb. 23 when he, his headquarters two-letter directors and command section staff took their official fitness assessment test. Nonetheless, the general and his staff continue to do physical training three times a week. The general said, "It's not just about passing the PT test once a year; it's about living longer, healthier, more-productive lives," and he expects commanders to "lead from the front," focusing on delivering a fit and ready force to meet expeditionary mission requirements. (AF photo by Larry Davenport)*

## Work Hard



- ³ Before starting any exercise program, consult your doctor.
- ³ Wear appropriate shoes with good shock absorption when you exercise.
- ³ Always warm-up and stretch before exercising to prevent injury.
- ³ Do aerobic exercise such as running or biking a minimum of 30 minutes, 3 times a week.
- ³ Do strength training such as weight-lifting at least twice a week.
- ³ Walk during lunch time.
- ³ Take the stairs when possible.
- ³ Drink water before, during and after exercise.
- ³ Don't forget to stretch after your workout.

## Fitness for Air Force civilians

**M**aking sure our Airmen — across the entire command — are physically fit and healthy ... and that they stay that way ... is one of the most exciting challenges the Air Force faces today. But I have no doubt whatsoever that the men and women of AFMC are ready to step up to that challenge.

The next phase in our fit-to-fight initiative is expanding the program to embrace our Air Force civilians. We lose far too many of our civilian brothers and sisters because of unhealthy lifestyles. I want them to be just as healthy, physically fit, and satisfied with their lives and lifestyles as our military people are. Some of our civilians have already started the necessary cultural lifestyle change. I am working closely with union leaders to devise a system that encourages fitness, allows for time devoted to exercise during the week, but does not negatively impact mission accomplishment, individual performance or time on the job accountability.

With what faces us, it is not an easy task; but it is one task we must take on, face head-on, and prevail to our mutual satisfaction because our Air Force civilians are great Americans who serve our nation tirelessly. We want them to be just as healthy as our Airmen.

— Gen. Gregory S. Martin



## Eat Smart

- ³ Bake, grill or broil your meat rather than fry it.
- ³ Eat fish at least once a week.
- ³ Drink 2 glasses of water before every meal to keep you hydrated and make you eat a little less.
- ³ Always have seconds on vegetables.
- ³ Have an afternoon snack such as cheese and crackers at 3 p.m. every day to ward off fatigue and keep you from overindulging later.
- ³ Keep a bowl of fruit on your desk.
- ³ Take a multivitamin every morning.
- ³ Make it a habit to carry bottled water with you at all times.

# Agile Acquisition

Dr. Marvin Sambur  
Assistant Secretary of Acquisition



**G**eneral Gregory S. Martin, commander, Air Force Materiel Command, and I are forging the strongest possible alliance between AFMC and Air Force Acquisition (SAF/AQ) to implement Agile Acquisition.

We are completely in sync with the view of SAF/AQ being responsible and accountable for acquisition program execution and AFMC being our “supporting command.”

Bottom line — we are a team. Together, we will maintain the Air Force as the world's dominant air power.

With your help we are making progress toward achieving the vision of Agile Acquisition. Despite many challenges, we develop and deliver new capabilities for the joint warfighter, despite the vagaries of world events, technology maturation and public support.

Each year, I report to Congress on what we are doing to improve our acquisition processes. Since you are the people who make this happen, it's appropriate that you know what I reported and where we are heading. Here are some highlights.

## Agile Acquisition Update

We have a continuing mandate from the secretary of the Air Force and chief of staff to change the way Air Force Acquisition does business.

All-too-often, our programs suffer cost and schedule overruns, which have in turn led to fielding delays, lowered production quantities and even reduced capability. I've spent a lot of time examining the root causes of poor program execution and our new policies addressing these underlying causes.

Target areas include unstable requirements and funding, inadequate systems engineering, and faulty cost estimates. Our

intent is to bring back stability and credibility to our modernization efforts. We must deliver what we promise, when we promise.

## Stakeholder Collaboration

I cannot over-emphasize the importance of collaboration as part of Agile Acquisition.

Stakeholder cooperation in defining priorities and key requirements is vital. Last year, the acquisition and operations communities collaborated on simultaneous revisions of the instructions governing their respective portions of the capabilities acquisition system. High Performance Teams with members from all stakeholder organizations have worked to synchronize policies that emphasize speed and credibility.

The simple goal: seamless, collaborative processes that smoothly implement the DoD 5000 series and the Joint Capabilities Integration and Development System (CJCSI 3170.01C). Not unexpectedly, this exercise has opened crucial lines of communications and collaboration that will pay dividends in the future.

In fact, Lt. Gen. Ronald E. Key, deputy chief of staff for Air and Space Operations, and I have jointly signed out a policy statement to ensure that this collaborative environment becomes a reality. System acquisition management plans and acquisition strategies will be routinely developed using the HPT process.

The responsible acquisition organization will convene the same HPT that initially developed the operational requirement to subsequently generate acquisition courses of action.

Ultimately, this environment should foster an understanding of what is required — and what is possible.

I have further operationalized the program execution end of this collaboration by instituting Capabilities Program Execution Reviews. During CPERs, to be held twice a year with each major command, we will identify program execution issues and develop corresponding options.

We'll provide a proposed action and relate impacts to the master capabilities as identified in the Capabilities Review and Risk Assessment. This process was the result of positive feedback from last year's pilot sessions with Air Combat and Air Mobility Commands.

A key aspect of this new collaborative environment is "Expectation

Management." Surprises can be kept in check when we maintain realistic expectations. I have directed my program executive officers to identify program changes, regardless of source, and communicate those changes to leadership.

Under the EM policy, we won't "just work it out later." When fact-of-life changes occur, we will honestly assess the impact, document it and collaboratively agree on a way ahead.

The test community has recently seen such collaboration. Maj. Gen. William Peck, then commander of Air Force Operational Test and Evaluation Center,



*Maintainers at Hill AFB recently provided to the Minnesota Air National Guard's 148th Fighter Wing the first F-16 to undergo a nearly \$1 billion upgrade that promises to keep the fleet operational beyond 2020. (AF photo)*

and I signed a policy that calls for the "Seamless Verification" of our modernization programs. The goal is to eliminate the seams among contractor, developer, and developmental and operational testers. It requires the warfighter, contractor, developer and tester to work together to produce efficient schedules and reduce program failures.

These collaborative environments should produce real results. Technology may not be developed any quicker, but the risks of misunderstanding and unrealistic expectations should decrease.

## Systems Engineering

Last year, I determined we must re-instill a robust systems engineering foundation within the acquisition process. Systems engineering is one of the bedrocks of acquisition management. It ensures solutions are consistent with sound engineering principles. I implemented a process to ensure Milestone

Decision Authorities adequately review the proposed approach to systems engineering prior to approving acquisition strategy plans. I also required that system-engineering performance be linked to contract award fee or incentive fee structures.

The system engineering approach used by the Air Force and our industry partners must focus on an end-state that quickly delivers high-quality, best-value warfighter capabilities and is designed to accommodate future growth. Earlier this year, I signed out Increment 2 of our new policy to revitalize Air Force and Industry

Systems Engineering. I intend to institutionalize key attributes of an acceptable system-engineering approach. For example, we have generated appropriate language that should be included in key acquisition documents (solicitations, award-fee plan and incentive-fee contracts, etc.).

This language, which is intended to be an example and not boilerplate, should be incorporated into governing acquisition instructions. I'm looking for meaningful progress within the next 18 months.

## Program Stability and Execution

Despite funding stability being an age-old problem, we have undertaken steps to improve stability and ensure program-execution accountability.

I have spent a great deal of time working with General Martin to realign and relocate our Air Force Program Element Officers. Phase 1 of this realignment is

complete, and the PEOs are responsible for the PEO programs as well as those smaller, previously “Designated Acquisition Commander” programs mapped into their portfolios. Important details remain, but we’ve already gained a lot of momentum in the right direction: improved ability to manage limited resources and improved accountability for program execution.

### Improved Cost Estimating

My testimony also dealt with the problem of faulty cost estimates.

I’ve implemented a policy whereby acquisition program cost estimates be held to a 90% confidence level. We’ve convened two Integrated Product Teams to consider how to achieve that improved confidence level.

Within our contracting division, we’re considering how better incentivized contractors might produce more realistic proposals.

Also, in conjunction with the Air

Force’s Financial Management Directorate, the Government Most-Probably Cost IPT is looking at how to establish and sustain better budgets through incentivized cost estimates. I should get results from these IPTs in the next few months.

### Leveraging Science and Technology Investment

The Air Force S&T Program is vital to achieving our vision of becoming an integrated air and space force.

Only with continuous investments in transformational technologies that support a reduced cycle-time and spiral development acquisition process, will the Air Force retain its air and space dominance.

During this past year, I entered into an agreement with Maj. Gen. Paul Nielsen, commander, Air Force Research Laboratory, to improve the timeliness of advanced technology transition from the laboratories into acquisition programs.

Similar to other agreements I’ve dis-

cussed, this one begins with new levels of collaboration and communication. It calls on AFRL to establish a broad-based initiative focused on accelerating its technology efforts in support of warfighting capabilities.

The initiative includes a capability-based investment strategy, systems engineering, collaborative portfolio reviews and an annual assessment of its progress.

### Conclusion

Over the past year, we in Air Force Acquisition have made great strides in institutionalizing the changes we believe are necessary to achieve the vision of Agile Acquisition — delivering what we promise, when we promise.

This stems from our commitment to the Air Force’s core competency of transitioning technology to warfighting. We must succeed in wisely investing our limited resources, and, while it will be a long journey, we are on the right road to doing so. ©

*The first B-2 Spirit was deployed in December 1993. To date, the Air Force has acquired 21 B-2s, including one test aircraft. (AF photo by Staff Sgt. Bennie J. Davis III)*



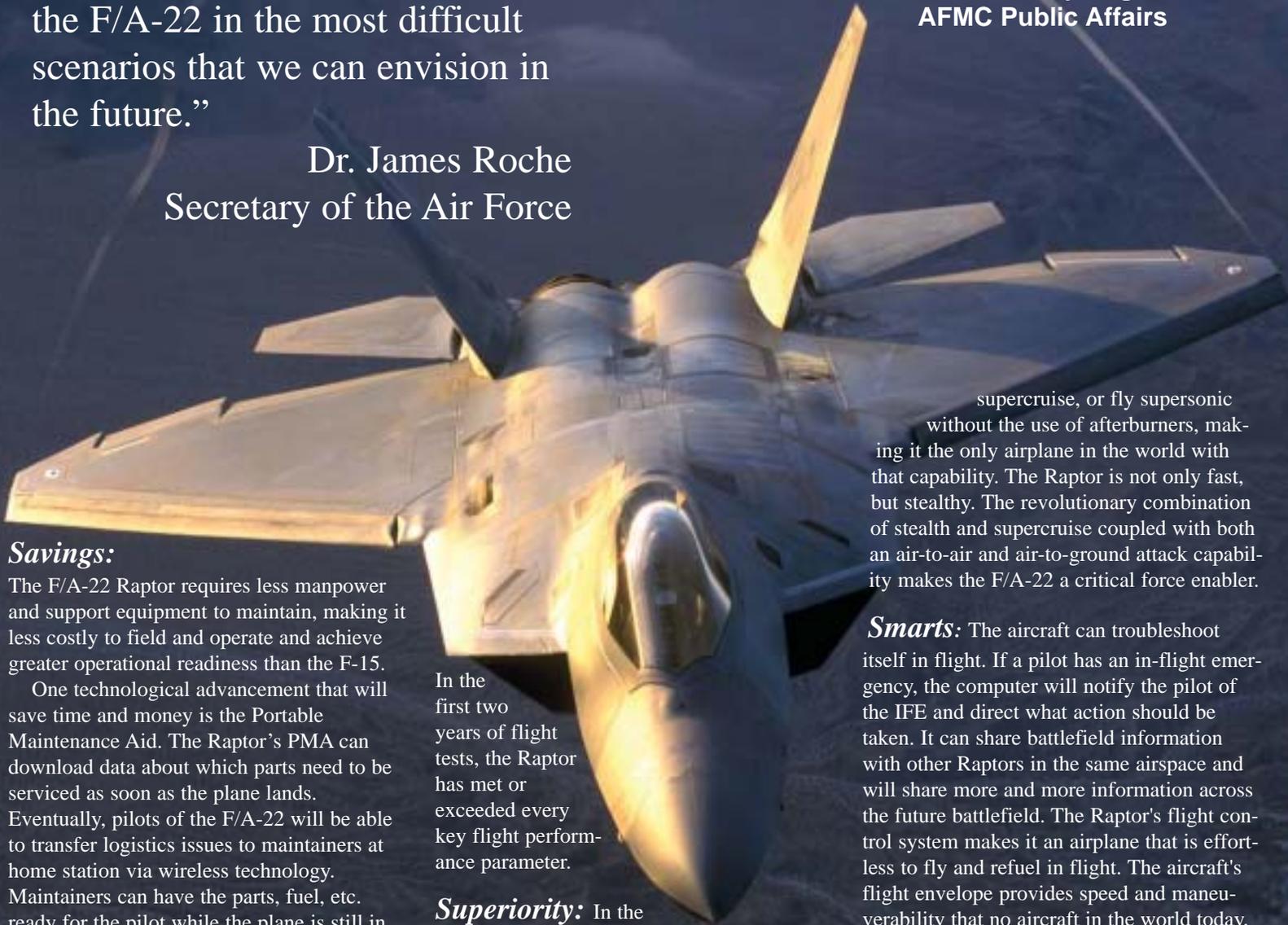
# Can't rattle the Raptor

"There is nothing in the air or on the drawing board that can touch the F/A-22 in the most difficult scenarios that we can envision in the future."

Dr. James Roche  
Secretary of the Air Force

The U.S.'s premier air superiority fighter

2nd Lt. Tracy Page  
AFMC Public Affairs



## **Savings:**

The F/A-22 Raptor requires less manpower and support equipment to maintain, making it less costly to field and operate and achieve greater operational readiness than the F-15.

One technological advancement that will save time and money is the Portable Maintenance Aid. The Raptor's PMA can download data about which parts need to be serviced as soon as the plane lands. Eventually, pilots of the F/A-22 will be able to transfer logistics issues to maintainers at home station via wireless technology. Maintainers can have the parts, fuel, etc. ready for the pilot while the plane is still in the air.

**Poised and Ready:** The Raptor program is already in low rate initial production and has completed Phase 1 of operational testing, which means it is well along the way towards being ready to meet the needs of our combatant commanders beginning in 2005. Under the current Air Force plan, Langley Air Force Base, Va., will achieve Initial Operational Capability in December 2005.

**Success:** In February 2004, the Raptor reached 5,000 flight hours at Edwards AFB, Calif.

In the first two years of flight tests, the Raptor has met or exceeded every key flight performance parameter.

**Superiority:** In the near future, our F-15/F-16 fighters face potentially equal or superior foreign fighter capabilities and anti-access threats such as advanced surface-to-air missiles. Its unique integrated avionics and cockpit displays literally define the battlespace for the pilot. The Raptor's ability to detect and target the enemy beyond the maximum effective range of its weapons means target destruction before the targets know they have been acquired.

**Fast and Furious:** The F/A-22 can get to the fight faster and engage the enemy longer than any fighter in the U.S. military inventory. It has the unique capability to

supercruise, or fly supersonic without the use of afterburners, making it the only airplane in the world with that capability. The Raptor is not only fast, but stealthy. The revolutionary combination of stealth and supercruise coupled with both an air-to-air and air-to-ground attack capability makes the F/A-22 a critical force enabler.

**Smarts:** The aircraft can troubleshoot itself in flight. If a pilot has an in-flight emergency, the computer will notify the pilot of the IFE and direct what action should be taken. It can share battlefield information with other Raptors in the same airspace and will share more and more information across the future battlefield. The Raptor's flight control system makes it an airplane that is effortless to fly and refuel in flight. The aircraft's flight envelope provides speed and maneuverability that no aircraft in the world today, or envisioned for the future, can equal.

**Vision:** In any weather, 24 hours a day, the Raptor can engage ground or air targets deep within enemy territory. The F/A-22 provides "first-look, first-shot, first-kill" capability. It can see the enemy first while avoiding detection itself. The F/A-22 is not only a "shooter," but will also be a sensor providing critical information to other aircraft and ground forces.

**Teamwork:** Like today's F-15 and F-16 teams, the F/A-22 and F-35 will be the winning team of the future.



**2nd Lt. Stephen Fox**  
ESC Joint STARS Program Office

**M**embers of the Electronic Systems Center, Hanscom Air Force Base, Mass., helped fill front-line commanders' need for more real-time and accurate information by delivering an upgraded Joint Surveillance Target Attack Radar System to the 116th Air Control Wing at Robins AFB, Ga., in February.

The new Joint STARS aircraft, dubbed P-16, will help meet this need with an upgraded satellite communications radio that allows the aircraft to receive and send data to beyond line-of-sight locations, said 1st Lt. Jason Hanson, P-16 production program manager.

Lt. Col. Mark Baggett, Joint STARS deputy system program director, stressed the importance of delivering this capability to the warfighter and to future expeditionary forces.

"Joint STARS showed what a vital role it plays in the 21st century battlefield during Operation Iraqi Freedom, epitomized by its ability to see through the now famous sandstorm attack," he said. "We're excited to give the wing another tool in the low density, high demand toolkit."

During a sandstorm that grounded many allied air operations and slowed troop movements near the beginning of Operation Iraqi Freedom, Iraqi forces mobilized a mechanized unit. A Joint STARS aircraft picked up the movement and sent target information to the Combined Air Operations Center, which resulted in two

B-52 Stratofortresses targeting the location.

Additionally, Richard Bleau, the Joint STARS system program director, said the P-16 is the first Joint STARS delivered with a Global Air Traffic Management capability called Reduced Vertical Separation Minimum.

Using RVSM, the Joint STARS can reduce the required distance between it and other aircraft sharing the same airspace, allowing for more aircraft to operate in the airspace. This saves fuel and allows the aircraft to fly more optimal routes, he added.

P-16 was the 16th Joint STARS aircraft delivered to the 116th ACW, the Air Force's only Joint STARS unit, and the sixth E-8C produced in the Block 20 configuration, which is the latest version of onboard mission equipment.

The Block 20 planes operate more reliably with advanced technology and increased processing power at a lower cost per aircraft, program managers said.

Delivery of the aircraft is due to a partnership between the Joint STARS Program Office and Joint STARS prime contractor Northrop Grumman.

"Our track record of 12 consecutive early deliveries since August 1999 is especially significant to the 116th Air Control Wing given the accelerating pace of operational demand on wing personnel and equipment," said Dave Nagy, Northrop Grumman Joint STARS program vice president.

There are many reasons why Joint STARS aircraft will continue flying beyond 2025, as required by the Air Force, Bleau said.

Those reasons include airframe investments during the production program, along with the aircraft structural integrity program, the corrosion prevention and control program and frequent programmed depot maintenance for the E-8Cs managed by Warner Robins Air Logistics Center at Robins AFB.

According to Bleau, all Joint STARS aircraft, which are based on a Boeing 707 airframe, undergo a \$40 million refurbishment program at Northrop Grumman.

The refurbishment consists of extensive inspection, treatment and elimination of corrosion, and the replacement of structural components and panels as required.

The aircraft are re-wired and fuel tanks are stripped and re-sealed to increase aircraft availability by preventing fuel leaks.

Additionally, fatigue damage that has been problematic for other 707 airframes is addressed by the Joint STARS' Wing Structural Integrity Program, which replaces stressed lower wing planks and stringers.

"The end result," said Bleau, "is a continuously improving weapon system that will provide the warfighter with another strategic advantage far into the future."

(Joel Fortner, AFMC public affairs, contributed to this story.)

# Deployment Readiness info

...with the click of a

**Chuck Smith**  
Information Technology  
Directorate



Commanders, unit deployment managers and individuals Air Force-wide now have their readiness status available at the click of a mouse thanks to Air Force Materiel Command experts developing three Web-based self-service tools.

The Deployment Readiness Service (DRS), Expeditionary Force Management Tool and the Commander's Dashboard were born under the Air Force's new Operational Support Concept of Operations. The new concept calls for commanders to regularly review their people's deployment readiness, according to Col. William Saunders, AFMC's e-business chief. They all work together to give everyone involved in the deployment process a clear picture of what training has and has not been accomplished and why.

AFMC information technology experts headed a multi-command team during CORONA South at MacDill Air Force Base, Fla., where they recently demonstrated the Web-based tools to senior Air Force leaders that include Air Force Secretary James Roche and Air Force Chief of Staff Gen. John Jumper.

The demonstration team was composed of representatives from the Air National Guard, Air Mobility Command and Air Combat Command. They demonstrated the Deployment Readiness Service, Expeditionary Force Management Tool and Commander's Dashboard.

DRS provides unit-level tools where individuals, unit deployment managers, service providers, trainers and commanders

can manage individual deployment readiness, like having shots and chemical warfare training up to date, Colonel Saunders said. It also provides e-mail notification for expired training and on-line training scheduling.

Additionally, DRS provides duty availability and duty status codes, medical readiness status, integrated training management, advance course rosters to instructors and daily summary e-mail for unit deployment managers, as well as UDM and commander readiness reports.

"The benefits of switching to DRS will allow deployment managers to focus on their primary areas of responsibility," said Tech. Sgt. Patricia Gilmore of Aeronautical Systems Center contracting. Since deployment manager is not a career field, the role is filled as an additional duty, with larger units dedicating one or two people full time to handle deployment responsibilities.

"The system will put more hours back in mission accomplishment and less in tracking," Sergeant Gilmore said. "It will be faster than people doing paper work."

Following the DRS demonstration at CORONA, Col. John Medlin, aide to the Assistant Air Force Secretary for Installations, Environment and Logistics, said the system is a "humongous step in the right direction toward everyone working from the same sheet."

AF-CIO representative John Gilligan said DRS is an excellent tool, and should provide the opportunity to turn off some older tools that are not as good.

Feeding off the DRS is the Expeditionary Force Management Tool,



*AFMC information technology experts recently demonstrated three AFMC-developed, Web-based self-service deployment readiness tools to Air Force leaders. Pictured are, from left, Col. William Saunders, Maj. Jeffrey Stephan, 2nd Lt. James Yeates, Maj. Gwen Taylor, Maj. Scott Moser, and Gen. Gregory S. Martin, AFMC commander. (AF photo)*

which "puts faces to spaces," Colonel Saunders said. EFMT allows force planners to match people with deployment taskings.

"It creates a team or roster of people who are eligible to deploy," the colonel said. And the training for the people on that roster is listed in DQS, so deployment managers know at a glance if their people are ready or not and why.

The Commander's Dashboard is the information technology tool that provides commanders a desk-top look at information on his or her people's deployment status, along with the readiness of equipment and infrastructure, like runways and navigational aids, under their command.

Additionally, it provides a single login for Air Force portal access, integration with other enterprise services and robust interface capabilities, and it reuses information from standard enterprise systems.

At the CORONA demonstration, Gen. William Hobbins, deputy chief of staff for integration, said DRS and its Commander's Dashboard will become an important part of what he sees as a "smart system," which will offer the user reports and other information directly patterned to that individual. Thus, commanders will receive a Commander's Dashboard that is tailored to their units and mission.

(Tech Sgt. Carl Norman, AFMC public affairs, contributed to this report).

# 'Can you hear me now... over?'

Civil and military air traffic controllers are raving about a new radar system procured and managed by the Electronic Systems Center National Airspace System program office at Hanscom Air Force Base, Mass.

The ESC team is the Defense Department's lead agent for the \$3 billion NAS program, which is replacing aging air traffic control systems with state-of-the-art technology at military and civilian airfields across the country, according to Al Kelley, ESC Global Air Traffic Operations Mobility Command and Control Office deputy program director.

NAS has three main components: the Digital Airport Surveillance Radar and the Standard Terminal Automation Replacement System, both developed by Raytheon Corp.; and the Enhanced Terminal Voice Switch communications system, developed by Denro Systems, a sub-division of Northrop Grumman.

"Each is individually critical, but together the components create a dramatic, positive difference for air traffic controllers," Mr. Kelley said.

DASR is an air traffic surveillance radar system that replaces 1960s-era ana-

log systems with new digital technology. Mr. Kelley said it improves reliability, provides additional weather data, reduces maintenance costs, improves performance and provides digital data to STARS.

STARS accepts data from DASR, which has a range of 60-120 miles. It can receive data from many other radars, including longer-range ones. Mr. Kelley said STARS also accepts flight plans and other flight data from the FAA's en route centers, allowing seamless coverage and flight management from take-off at one airport to landing at another.

ETVS ties the air traffic controller, aircrews and ground experts into a digital voice communications network, Mr. Kelley said.

These communication systems replace existing analog voice systems that are approaching the end of their life cycle, and provide state-of-the-art, air-to-ground, ground-to-ground and intercom communications for controllers of military and civil air traffic.

The Combat Readiness Training Center at Alpena Air National Guard Base, Mich., recently became the seventh NAS-equipped site in the United States.

"In Alpena's case, it was like moving from a slide rule to a laptop computer," said Mr. Kelley. "They've seen what an astounding leap in capability and dependability this upgrade has provided them."

Col. James Makowske, Alpena base commander, said NAS is a safer system because of its reliability and efficiency.

"Anytime you can improve your

*A crew installs a new radar system procured and managed by the Electronic Systems Center, Hanscom AFB, Mass. The ESC team is the lead agent for the \$3 billion National Airspace System program, which is replacing aging air traffic control systems with state-of-the-art technology at military and civilian airfields across the country. (AF photo)*



awareness and the accuracy of your information, and anytime you can improve the amount of information you're able to process, you've improved your margin of safety," said Colonel Makowske. "It's not that our old system was unsafe, but this is safer because it's newer, better, more reliable and processes much more information."

"The coverage and presentation of our new radar is awesome," said Senior Master Sgt. Scott Stone, Alpena's air traffic manager. "My controllers love the radar, and even the flight check crew commented on how great our radar coverage is."

It's this type of feedback that program managers believe will continue to propel the massive program.

"NAS provides a wonderful opportunity to make the kind of air traffic control advances that are needed for military and civil operations," said Col. Al Moseley, Global Air Traffic Operations Mobility Command and Control Office director. "We've heard from controllers who've told us what they need, and now we're hearing how pleased they are with what we've provided, so we're clearly on the right track."

To date, eight airfields have received the NAS upgrade with 12 more scheduled for this year, according to Mr. Kelley. In all, 215 civilian and military airfields are on tap to receive the upgrade over the next 10 years.

(2nd Lt. Christy Stravolo, AFMC public affairs, John Cefali, NAS deployment team, and Al Kelley contributed to this article.)



### POW/MIAs remembered with respect

SOUTHWEST ASIA — Airman 1st Class Leonel Lopez and Staff Sgt. Kimberly Parks light candles in remembrance of POW/MIA comrades during a ceremony at a combat dining-in Feb. 18. The event gave deployed members an opportunity to take a break from the everyday dining experience here and take part in a long-standing military tradition. Airman Lopez is deployed to the 380th Expeditionary Civil Engineer Squadron here from Beale Air Force Base, Calif. Sergeant Parks is deployed to the 380th Expeditionary Mission Support Group from Brooks City-Base, Texas. (AF photo by Airman 1st Class Brandi Branch)



### Vital networks repaired

BALAD AIR BASE, Iraq — Staff Sergeant Cortney Edwards of the 332nd Expeditionary Communications Squadron works on a Basic Access Module for Non-Classified Internet Protocol

Router and Secret Internet Protocol Router networks to provide voice and data communications in the wing headquarters building. The 332nd ECS is responsible for installing local area network communications for Balad Air Base. Sergeant Edwards is deployed to Balad from Brooks City-Base, Texas. (AF photo by Staff Sgt. A.C. Eggman)

# AFMC Warfighters

### Critical care given to child

TALLIL AIR BASE, Iraq — Capt. James A. Smith II, a critical care nurse at the 332nd Expeditionary Medical Squadron, focuses on the care of 9-year-old Saleh Kahlaft. Saleh was critically injured by a land mine near his school in Al Nasiriyah, Iraq, and had been cared for by 332nd EMDS Airmen until his evacuation to the United States. Captain Smith is an emergency room nurse from the 74th Medical Operations Squadron at Wright-Patterson AFB, Ohio, deployed to the 332nd EMEDS. (AF photo by Master Sgt. Lance Cheung)



# SPACE PURSUIT



*XSS-10 is an experimental satellite launched in 2003. It demonstrated the feasibility of inspecting orbiting objects while maneuvering around them. (AF photo)*

An impressive list of heavy-hitters, with a passion for and expertise in science, air and space, gathered at the U.S. Air Force Museum, Wright-Patterson Air Force Base, Ohio, March 3-4. Representatives came to testify, through a series of subject-specific panels, before President George W. Bush's appointed Commission on Implementation of U.S. Space Exploration Policy (Moon, Mars and Beyond).

It was the second of five nationwide public hearings planned by the commission. The hearings are to help solicit views and opinions from academia, industry and the Air Force, as well as the general public. The nine-member panel will take the suggestions of those who testified and use them to help make recommendations to the president and to advise the National Aeronautics and Space Administration on the long-term implementation of the president's vision for America's space exploration program.

The president's vision is to reinvigorate the country's enthusiasm toward space study, while redefining America's responsibility to it. To accomplish his vision the president is seeking recommendations regarding moon research activities, ideas for bringing in industry and other countries as space partners and ways to increase young people's interest in space science.

According to a White House fact sheet, the experience gained on the Moon will serve as a foundation for human missions beyond the Moon, beginning with Mars.

Testifying on behalf of the Air Force, Gen. Gregory S. Martin, commander, Air

Force Materiel Command, Wright-Patterson AFB, made clear the Air Force's continued commitment to space exploration and its steadfast partnership with NASA.

"As the military's lead service for space, the Air Force has much to offer our national leaders in helping them implement their vision for space," General Martin said in his opening remarks. "Both NASA and the Air Force are operating in the same medium, and we have and must continue to leverage each other's efforts."

General Martin expounded upon his observations, citing the Armed Forces' progress of near real-time delivery of ordnance during wartime. Referencing Desert Storm, the nation's first "space-war," roughly 10 percent of ordnance used was precision-guided. Fast-forward 13 years and an additional four conflicts won, most recently Iraqi Freedom, that number is nearly 75 percent. "Space has delivered the means to provide discriminate, near real-time effects," the general said.

While General Martin affirmed that Air Force Space Command, Peterson AFB, Colo., is the "lead organization for space," he pointed out that AFMC provides "the support necessary to acquire air, armament, command and control, and information systems."

As such, AFMC is the sole charge for all research and development in the space arena.

This is accomplished through the command's Air Force Research Laboratory, also headquartered at Wright-Patterson AFB, but with components, such as testing facilities and development centers, located nationwide — a team of 5,200 men and women worldwide.

"AFRL has a broad investment in space, from basic to applied research, to actual demonstrations," testified Maj. Gen. Paul Nielsen, AFRL commander. "The technologies we develop support getting to space, situational awareness and

**Kathleen A.K. Lopez**  
AFMC Public Affairs

*The Atlas II/Centaur rocket is one of the many products resulting from the successful partnership between the Air Force and NASA. Atlas II is a member of the Atlas family of launch vehicles, which evolved from the successful Atlas intercontinental ballistic missile (ICBM) program. It is designed to launch payloads into low earth orbit, geosynchronous transfer orbit or geosynchronous orbit. (Courtesy photo)*



operation in space, protecting our assets in space and providing information back to users on the ground.”

“To lose space capability, is to become less precise and more destructive,” said Lt. Gen. Daniel P. Leaf, AFSPC vice commander, who testified on the same Science and Technology panel with Generals Martin and Nielsen. “That is in nobody’s interest: Not ours. Not our adversaries. Maintaining superiority (means) a peaceful place in space.”

Although General Martin agreed that the end goal would be space as “a peaceful medium,” he said that “the reality of the world and competition is oftentimes, competition turns into conflict.”

“Our ability to maintain that edge and to use that capability (in space) has prevented mass destruction,” said General Martin.

## Ties that bind

The Air Force has a history with NASA dating back to the administration’s infancy. Collaboration between the two organizations has resulted in many useful products; everything from sophisticated military weaponry to everyday household items.

Aside from the beverage mix, Tang, many items, such as dental floss, compact discs, Teflon, cellular phones, satellite communications and ATMs have become staples few people would be willing to live without. More sobering outcomes of the partnership such as CAT Scanners, MRI technology,

kidney dialysis machines, insulin pumps, fetal heart monitors and infrared hand-held cameras that enable firefighters to find hot spots in fires are staples many people could not live without. Talk to officials throughout the USAF and NASA, and they readily will agree on the invaluable collaborations shared with academia, as well as national and international industry, that have ensured so many of these and other successful products.

Because the president’s new vision will limit NASA’s science only to studies applicable to the moon and Mars program, one topic that prompted concern for many testifiers at the Dayton hearings was the fear of a new space vision equating to funding issues: perhaps a smaller budget for their research or cancellation of research altogether.

Individuals spoke of partnerships at risk, fearing the number of technology investments that may be terminated in exchange for some new technical investment areas.

None voiced concerns more succinctly than (retired) U.S. Senator John Glenn, who piloted the first U.S. manned orbital mission on Feb. 20, 1962.

“I think that is a mistake,” said Mr. Glenn, about limiting NASA’s science studies applicable only to the moon and Mars. “I don’t think you cut out one to do the other,” he said, referencing the razing of the International Space Station. The senator also spoke of “breaking promises” to the 15 other nations, which take part in various programs. “We have projects that are planned or in the queue now, projects people — academics, laboratories and companies — have spent millions of dollars to get ready.”

Mr. Glenn detailed the value of research that has resulted from every space endeavor, including his three-orbit mission in 1962 as well as his history making nine-day orbit on Space Shuttle Discovery in 1998. “We’re voluntarily stopping some of the most unique, cutting-edge research in the history of the world,” he said.

## Without humans, nothing is possible

The U.S. is literally “feeling the pain” of decline in numbers of students gradu-

ating with degrees in engineering, science and technology and the statistics are sobering.

Patricia Arnold, Ph. D., the vice president of Education and Workforce Development for The Space Foundation, Colorado Springs, Colo., cited the National Center for Education Statistics’ 2002 report. Dr. Arnold said that “in 2000-2001, U.S. public and private schools graduated 58,098 students with engineering degrees. Annually, India graduates 80,000; Japan 200,000, and China 800,000.”

“The new policy calls upon all Americans to renew our national spirit of discovery,” said Dr. Arnold.

“Now is the time to re-ignite passionate interest in space and science education.”

The Air Force is not immune to such shortages, nor does it shy away from the challenge of developing and recruiting individuals in technical areas, General Martin shared.

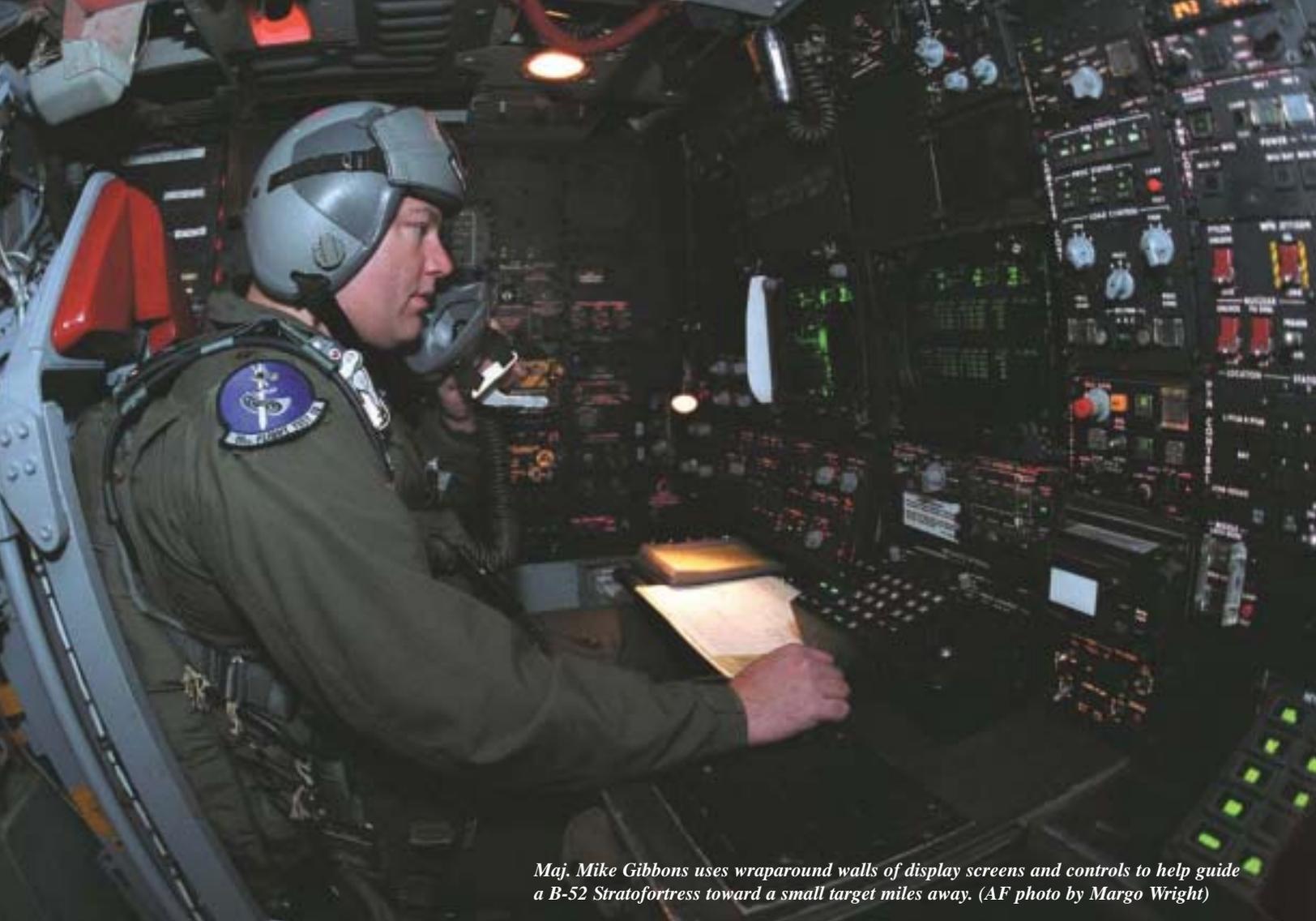
Rather, the service is working hard with academia to help facilitate interest in STEM areas from community outreach to curriculum strengthening within the Air Force’s own technical schools, such as the Air Force Institute of Technology, a tenet institution of higher learning located on Wright-Patterson AFB, but owned and operated by Air Education and Training Command, Randolph AFB, Texas.

## No “overnight express”

President Bush’s vision of reaching the Moon, Mars and beyond is one neither he nor this commission expects to come to fruition in the short-term. Chairman Aldridge stressed to each panel member, that as the commission collected its input to give to the president, there are three things imperative to successful implementation: “It (the vision) needs to be sustainable, lasting through (at least) 40 years of presidencies and Congresses; it needs to be affordable and keep the U.S. competitive with the global economy.”

General Martin summed up his views on the president’s vision by borrowing from a familiar yet timeless analogy: “A partnership yields greater results than the sum of its parts.” ☺





*Maj. Mike Gibbons uses wraparound walls of display screens and controls to help guide a B-52 Stratofortress toward a small target miles away. (AF photo by Margo Wright)*

## Shakin' down the B-52 Darren D. Heusel OC-ALC Public Affairs

**A**t 17,000 feet, the crew of a B-52 Stratofortress locks in on their time-to-go indicators, displaying how much time remains before the aircraft's weapons are released on a target.

With 15 seconds left, the doors to the "Big Ugly Fat Fellow's" bomb bay swing open and the countdown begins.

"Three...two...one...bomb's away!"

Within minutes, the aircraft descends to 400 feet and repeats the process all over again to simulate a low-level bombing run.

This is all in a day's work for members of the 10th Flight Test Squadron stationed at Tinker Air Force Base, Okla., where pushing aircraft to the limit is a risk they take to ensure the weapon systems they deliver to the customer are ready for service.

On Jan. 20, Maj. Mike Gibbons, Tim Hines and Cary Montgomery put a B-52 fresh out of programmed depot maintenance at the Oklahoma City Air Logistics

Center to the test over the plains of West Texas.

"Performing functional check flights is the backbone of what we do," said Major Gibbons, an instructor radar navigator for the squadron. "Once the airplanes come out of depot, we'll take them out and put

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**"We're good because we come back alive, and we give a good airplane back to our fellow warfighters."**

**— Lt. Col. Phillip Neely  
10th Flight Test Squadron  
commander**

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them through a series of tests to ensure they're fully functional before we turn them back over to the operational squadrons."

Lt. Col. Phillip Neely, squadron commander, admitted this is an awesome

responsibility, which is why the active-duty reservists who make up the squadron are handpicked.

"Less than one percent of aviators ever get to become a part of a test squadron," he said. "If they weren't good they wouldn't be here. We're good because we come back alive, and we give a good airplane back to our fellow warfighters."

The crews perform an average of 200 check flights a year on weapon systems maintained at the OC-ALC, including the B-52, B-1 Lancer, E-3 Sentry and KC-135 Stratotanker.

On this day, the crew began their check flight of Aircraft 60-058 like they do any other – with a pre-flight briefing to include information on the route and weather, among other things.

Once on the flight line, the crew inspects the aircraft inside and out, ensuring that all the parts and equipment are in order.

The crew then gears up for departure and takes to the sky to the roar of eight massive engines.

While in the flight, Major Hines, the aircraft commander, and Major Montgomery, co-pilot, monitor an infrared computer screen situated directly in front of them that displays altitude, wind speed and other vital information.

The monitor also displays a repeater screen, allowing the pilot and co-pilot to see what Major Gibbons sees “downstairs” in his confined area complete with radar, blinking lights, knobs and switches that cover every surface of the panel.

“While I fly the aircraft on the bomb run, Cary monitors the systems and then we’ll switch off,” Major Hines said.

“My job is to basically baby sit the pilot,” Major Montgomery quipped, adding, “I basically serve as flight engineer.”

In all seriousness though, Major Hines said, “What we’re doing is extremely important. Our job is to make sure we deliver a quality product to the customer.”

Downstairs, Major Gibbons’ job as navigator is much like that of a television director.

“It’s crisis management and time control,” he said. “A navigator’s job is to take an airplane through space and time and to

know where the aircraft is at all times.”

Major Gibbons said the navigator also serves as the bombardier.

“These new infrared cameras are really state-of-the-art,” he said. “You can be 20 miles out from the target and six miles up in the air and if your target is a bridge, you can see cars going over the bridge.”

On the ground, the B-52 has all the elegance of a Mack truck. As it lumbers toward the runway, its long wings struggling with the weight of the engines, observers might feel safe placing bets that the plane will never leave the ground.

Once airborne, however, it acquires the elegance of a bird, soaring freely overhead.

The long-range heavy bomber, capable of flying at high subsonic speeds and altitudes up to 50,000 feet, originally was expected to fly for merely a decade.

Now, nearly half a century after first entering service, the B-52 is being flown by a new generation of pilots young enough to be the grandchildren of the original pilots and often younger than the planes themselves.

The B-52 remains the primary strategic bombing platform for the U.S. Air Force and is often the first weapon sent to combat a hostile nation.

“The new weapons we have and the way they’re being utilized have really revolutionized the B-52 in the last 10 years,” Major Gibbons said. “We’re really into precision guided weapons these days and that’s what we like.”

“One B-52 with a full payload of nuclear-tipped Air Launched Cruise Missiles is the seventh most powerful country in the world. It can carry 20 cruise missiles, six on each wing and eight in the bomb bay.”

Major Gibbons said during Operation Iraqi Freedom, crews dropped bombs on targets as small as a window from 30,000 to 35,000 feet.

“That’s the beauty of Joint Direct Attack Munitions,” he said. “These weapons are extremely accurate because of the Global Positioning Systems onboard.”

After pushing the plane to its limits for nearly three hours, the B-52 was deemed ready for action and returned to its home at Barksdale AFB, La. – a feat that left the crew feeling good about their mission.

“This is a 40-year-old airplane that’s supposed to fly until 2040,” Major Gibbons said. “The way things are now, we feel like we’re doing our part.” C

*Aircraft commander Maj. Tim Hines makes last-minute preflight checks before taking a B-52 Stratofortress to the air for a full system checkout before returning the aircraft to the warfighter. The 10th Flight Test Squadron at Tinker AFB, Okla., performs approximately 200 check flights a year on various weapon systems serviced at Tinker AFB. (AF photo by Margo Wright)*



*Civilian test pilots, like those pictured here, will allow active-duty aviators to perform more operational missions. (AF photo)*



## ‘Gray beards’ take flight Tech. Sgt. Carl Norman AFMC Public Affairs

An Air Force Materiel Command initiative to trade more than 20 unfilled military pilot positions for civilian personnel funding may bring more experience to the test world while putting more pilots in operational aircraft.

The trade allows officials to hire civilian test pilots, primarily retired military experts, to perform test and evaluation work currently being done with pilots taken from the operational arena, allowing the military operators to get back to the fight.

Spearheaded by Brig. Gen. Perry Lamy, AFMC director of operations, civilian pilots will occupy positions at Eglin Air Force Base, Fla.; Edwards AFB, Calif.; and Holloman AFB, N.M.

“This plan will help achieve an experience balance in the makeup of our test force while enhancing our operations and providing long-term stability,” General Lamy said.

“Younger testers with recent operational experience are an essential ingredient for bringing military utility to our evaluations. By complimenting this core force with the expertise of former military pilots, we deliver efficiency to our mission.”

The general said the civilian pilots will also serve as “gray beards” in their units, providing mentoring to the younger military pilots.

AFMC’s pilot exchange initiative comes as the Air Force forecasts its pilot shortage to exist until the end of the decade, according to General Lamy.

To make sure combat squadrons are fully manned, the available pool of pilots to support AFMC operations has been reduced significantly, resulting in an instability of test pilot expertise at test centers.

Frequent military rotations, which add to the cost of training and make it difficult to maintain corporate flight-test experience, compound the problem further, he said.

“To date, this lack of continuity has been workable, but expensive,” the general said. “Inefficient testing translates directly to higher costs for the test customers and, ultimately, the American taxpayer.”

Lt. Col. Pete Hughes of AFMC’s operations directorate, said the civilian pilots will be used across a wide range of mission areas and unit levels at each test cen-

ter. Duties and roles include test pilot, chief test pilot, chase support, test pilot instructor, continuation training and evaluation, and flight safety.

General Lamy said this practice also dovetails with the Air Force chief of staff’s force development concept by allowing more testers to return to the operational Air Force and focusing military test experience where it is needed the most — operational test and evaluation.

“It enriches our craft of test and enhances our force development,” he said. “It not only benefits the acquisition community, but the Air Force as a whole.”

The general added that the plan’s continued success is paving the way for planned future conversion opportunities.

“The overall effect of capturing this corporate knowledge within our test force has meant AFMC has been able to deliver more effective and affordable weapon systems to the warfighter, while at the same time reducing the current pilot shortage, he said.

“This initiative is just one example of several efforts aimed at improving operations at AFMC’s flight test centers.”

## 100 Predators Built: Keep 'em Coming

SAN DIEGO, Ca. — General Atomics Aeronautical Systems, Inc., a leading manufacturer of unmanned aircraft systems, has produced the 100th Predator remotely piloted aircraft for the U.S. Air Force.

Integrated with the most advanced command and control technology as well as the latest multi-targeting sensor package, Predator 100 represents the multi-mission Predator capabilities, which are deployed in combat today supporting the global war on terrorism.

Predator has provided the U.S. with persistent intelligence, surveillance, targeting and reconnaissance information on combat deployments to Iraq, Afghanistan and the Balkans since 1995, logging over 60 percent of all flight hours in combat. Predator is also in use by the U.S. Navy and the Italian Air Force.

The U.S. Air Force is developing and building the pre-production MQ-9 Hunter Killer Predator B prop jet aircraft. The



*Airmen roll out a Predator unmanned aerial vehicle at Tallil Air Base in Iraq. (AF photo by Master Sgt. Deb Smith)*

detection, tracking and strike capability of this aircraft brings a new dimension to armed reconnaissance unsurpassed by any other unmanned aircraft in the world. Predator B has demonstrated its ability to make a tremendous contribution to increased awareness along the borders of the United States during actual deployments and will continue to be a force multiplier on

deployments around the world. Mariner, a variant of the Predator B, is equipped with color and infrared cameras plus a surface search radar. Mariner will allow the U.S. Navy, U.S. Coast Guard and the Homeland Security organization to cost-effectively monitor the oceans of the world and maritime approaches to the United States.

— General Atomics Public Relations

## Air Force test facility earns coveted aerospace ISO certification

ARNOLD AIR FORCE BASE, Tenn. — Arnold Engineering Development Center, Arnold Air Force Base, Tenn., recently became the first Air Force test center to achieve AS9100 aerospace systems ISO certification.

The certification makes the government side of AEDC's operation the second such Air Force organization to be registered, according to Col. Craig Priebe, AEDC's maintenance director and a designated management representative for the center's quality management system. The first was Oklahoma City Air Logistics Center at Tinker AFB, Okla., a depot-level repair facility.

According to information from TUV America, an organization that provides accredited certification for AS9100, the designation means a quality management system is in place that has the potential to make an organization more cost effective and efficient, providing customers consistent quality products.

ISO represents the International Organization for Standardization, a worldwide federation of national technical standards bodies from more than 140 countries. A non-governmental organization established in 1947, ISO is not an acronym, but a word derived from Greek language, meaning "equal."

The preparation for ISO registration required some serious introspection on the whole planning process.

"It also forced us to take a harder look at what we planned to do," said Colonel Priebe. "It helped us to clearly focus and define what we, the government team, are really responsible for.

— AEDC Public Affairs

## Leave the driving to the bus

ROME, N.Y. — Take the bus and leave the driving to embedded software.

That's exactly what happened when California Department of Transportation officials test drove software developed in Rome, N.Y., by the Air Force Research Laboratory - managed Model-Based Integration of Embedded Software (MoBIES) program. The University of California at Berkeley and Caltrans conducted the demonstration with support from AFRL's information directorate advanced architecture and integration branch at Wright-Patterson Air Force Base, Ohio.

The demonstration showcased technologies that helped two transit buses automatically maintain a set separation distance at highway speeds. Caltrans officials used buses fitted with an experimental Cooperative Adaptive Cruise Control system, developed as part of the MoBIES program. CACC differs from traditional cruise control systems because the lead vehicle communicates to a trailing vehicle, which, combined with its own sensors, maintains a specified distance between itself and the lead vehicle.

— AFRL Public Affairs



*Air Force Research Laboratory's experimental cruise control technology goes for a test drive in California. (AF photo)*



## Warrior winds it up

Sheila Vaughn  
AAC Public Affairs

**A**fter literally jumping into combat in Normandy, France, as a 101st Airborne paratrooper during WWII, seeing enemy fire in the Cold War in the 1950s, and topping off his career with four decades of civil service at Eglin Air Force Base, Fla., Steve Antel has decided 62 years of service is enough.

Based on testimonies from people who have worked with him, his longevity in the work force is directly related to his positive attitude toward life.

"He is a wonderful, generous person," said Mr. Antel's supervisor Billy Wilkins, who is the maintenance superintendent for the 796th Civil Engineering Squadron at Eglin Hospital. "He was a big asset for the government. He's got a heart of gold, and he never meets a stranger."

Mr. Antel has not only had a long and accomplished career but also a distinguished record.

He was awarded the Bronze Star and

the Purple Heart for service during WWII and the Distinguished Flying Cross for combat actions during the Cold War while at Rickenbacker AFB, Columbus, Ohio.

After retiring from active-duty service in 1966 as a master sergeant, he worked as an electrician at various Eglin AFB locations, including the Air Armament Center, the Site C-6 wastewater treatment facility and the hospital for the past 11 years.

Mark Cato, a 796th CES maintenance mechanic and coworker, noted the physical stamina of the slim-framed Mr. Antel.

"I've seen him climb three flights of stairs everyday since I've been working with him. That's not bad for 83 years," Mr. Cato said. "I couldn't ask for a better partner; I called him my little buddy."

Steven Davis, a utilities systems operator with the 796th CES, worked with Mr. Antel for the past 11 years. He noted how his positive attitude kept him on the job

day in and day out.

"I don't think he used any sick leave until just recently," Mr. Davis said.

When asked for the secret to his stamina and health, one of Mr. Antel's friends interjected that it must be all the hot sauce he puts on his food.

At age 5, Mr. Antel's family came to the United States from Czechoslovakia, in 1926, through Ellis Island in New York. Years later, he met a young woman in New Jersey named Rose.

"I met him, and that was the end of it," said Rose, his wife of 57 years.

Mr. Antel was recently honored for his decades of service with a retirement luncheon and presentation of a certificate of achievement.

When asked why he has continued working as long as he has, he replied, "It was too good a job to give up. They treated me fair; there's nothing wrong with a job that treats you fair."



## *Black Knights* come home

Capt. Donovan Kanak gets a homecoming hug from his wife Leslie. The captain was one of 17 Black Knights (members of the 19th Air Refueling Group at Robins AFB, Ga.) to return from a 75-day deployment to the Middle East. (AF photo by Sue Sapp)

# Saving Lives

## Two extraordinary firefighters

**Tina R. Barton**  
AEDC Public Affairs

Facing life and death situations is “just a part of the job,” according to two firefighters from Arnold Engineering Development Center, Arnold Air Force Base, Tenn., who recently received a community service award for saving the life of a man injured in a multi-car collision.

On their way home from work last October, Larry Phillips and Steve Macon were the first to arrive at the scene of a three-car accident involving seven injured people. Immediately, the men contacted the AEDC Fire Department and initiated emergency response procedures.

While they waited for help to arrive, Mr. Macon and Mr. Phillips assessed the situation and determined the conditions of the injured people and the severity of their injuries. They initiated patient care to control bleeding, splinted a broken arm on one of the victims and prevented another victim from going into hypovolemic shock. Hypovolemic shock is a condition where the heart is unable to supply enough blood to the body because of blood loss from external or internal bleeding.

The two-man team also immobilized five of the patients on backboards to prevent further injury during transport to the hospital.

Once the AEDC Emergency Management System crews arrived, they treated multiple lacerations, broken bones, bruises and a severe chest injury. At the same time, the firefighters secured the scene and coordinated ambulance service from two adjoining counties along with local fire and police units. They ensured not only the safety of the accident victims, but also that of the emergency response team.

Mr. Macon and Mr. Phillips along with fellow fire and EMS workers James Wrisner, Gerald Adams, Robert Hatfield, Allen Zimmerman, Dennis Crosslin, Richard Cope and Jeff Polidan received a Community Service Excellence Award in February during AEDC's Quarterly Awards Luncheon.

“I am exceptionally proud of the ability of AEDC and local fire, EMS and police crews to work together when the need arose,” said AEDC Fire Chief Daryle Lopes. “Such teamwork and cooperation is vital to the success of our missions to serve and protect AEDC and our local communities.”



*The right time, the right place and the right tools can mean the difference between a victim's life and death for firefighters and paramedics. AEDC Firefighters Larry Phillips, left, and Steve Macon, inventory first aid and medical supplies in their emergency response vehicle ensuring they are prepared for potential situations. (AF photo by Susan Frost)*

## Police Palm Pilots Capture Award

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Materiel Systems Group experts and their contractor counterparts, Global Bay Technologies, are sharing the Government Computer News Best New Technology judge's award for taking only 120 days to put access information at security forces members' fingertips.

In a situation that routinely takes years to complete, the Information Technology duo provided 70 handheld Personal Digital Assistants and the associated software to security forces members here under a program called Defensor Mobile 1. This is an active "pilot" project that provides real-time access to up-to-date lists for visitor access, individuals barred from entering the base, and registered weapons in base quarters.

The PDAs, costing less than \$300 each, also provide complete step-by-step directions from gates to base buildings that are printable to a thermal printer at the gate, alert or "Be on the lookout" notices, and other information.

A team of 14 judges selected Global Bay for the award, which was presented at the March 23 Federal Office Systems Expo in Washington, D.C., the largest

government information technology expo of its kind.

The MSG-Global Bay partnership comes as three members of MSG's mobile computing team shadowed security forces members for a week to determine what needs and requirements they had, according to Mike Barry, MSG mobile computing solutions manager. MSG then provided Global Bay Technologies experts the requirements to write a specific application.

The PDAs are something security forces members very much needed, but were skeptical of at first, according to Chief Master Sgt. Monte Tahvonen, 88th Security Forces Squadron security forces manager here. He said when his people were training on the devices there was a bit of hesitancy at first.

"But, the troops are excited because it shows senior leadership is concerned about the equipment they have to perform their jobs," the chief said. "The fast sorting capability will remove all unnecessary paperwork at the gate. We will no longer have to shuffle through 30 pieces of paper to find one base access list."

Mr. Barry said Defensor Mobile 1 came in at about \$55,000 for software and all. The application resides on a Palm M515 PDA and is synchronized with an SQL Server before each shift. Security forces



*Staff Sgt. David Miller, 445th Security Police Squadron, Wright-Patterson AFB, Ohio, accesses information for a base visitor via his handheld Personal Digital Assistant. (AF photo)*

armors issue them to the guards.

GCN officials said this judge's award is not bestowed every year, but reserved for products that merit special attention.

— ASC Public Affairs

## Engineer earns accolades

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — An Air Force Research Laboratory engineer recently earned the 2003 Air Force Science and Engineering Award in the manufacturing category.

Ray Linville, of AFRL's materials and manufacturing directorate manufacturing technology division, received the award for his outstanding abilities in personally defining, leading and managing programs to support Laser Eye Protection and the Viper™ Laser, according to Dr. Alexander Levis, Air Force Chief Scientist, who approved the award.

The Viper™ Laser is one of the primary components in the Large Aircraft Infrared Countermeasures system, designed to protect C-17s, C-130s and

other large aircraft from IR-guided surface-to-air missiles.

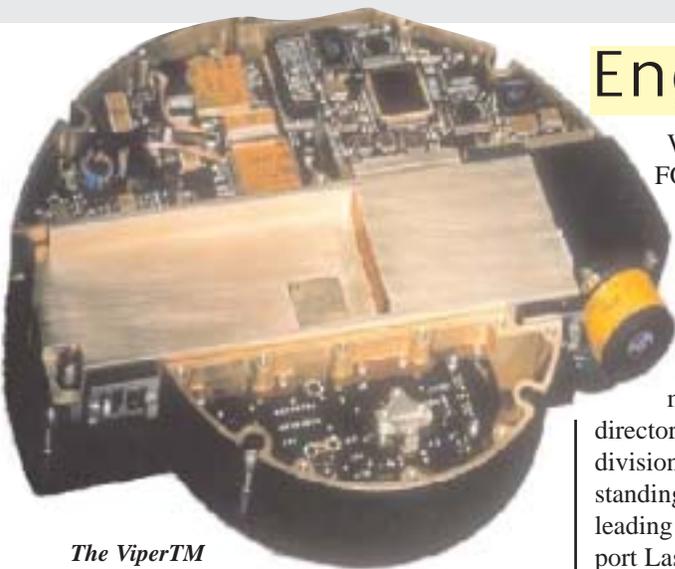
Dr. Levis also applauded Mr. Linville's contributions to cost reduction and yield enhancement for the Viper™ that will result in more LAIRCM systems made available to the fleet, increasing aircraft and flight crew survivability in hostile threat scenarios.

The LAIRCM autonomously detects and signals the flight crew when the aircraft is threatened. It tracks and then jams the missile's guidance system, resulting in saved aircraft and aircrews.

Reduced acquisition and maintenance costs are expected to save the Air Force \$4.2 million, doubling the return on ManTech's \$2.1 million investment.

For more information, call the Technology Information Center at (937) 255-4689.

— AFRL Public Affairs



*The Viper™ Mid Infrared Laser is a key component of the future defense system against missile attack for large aircraft. (AF Photo)*

A large, billowing mushroom cloud from a nuclear explosion, with a dark, dense column of smoke and debris rising from the ground and spreading out into a large, white, and grey cloud at high altitude. The background is a clear blue sky.

**We put  
the “mother”  
in MOAB.**

**AFMC**