Army Seeks Nominations for Greatest Inventions Awards

ARMY NEWS SERVICE (May 30, 2012)—Recognizing the need for new and innovative technologies to empower, unburden, and protect soldiers around the world, the Army's Greatest Inventions (AGI) program is now accepting nominations for this year's awards.

Since 2003, the U.S. Army Materiel Command (AMC) has conducted the AGI program annually to encourage and reward those who are fighting the war from research laboratories throughout the Army by developing the best technological solutions for the soldier.

Continuing a tradition established last year, AMC is also proud to support the Soldier Greatest Inventions Awards program, recognizing individual soldiers for their efforts to enhance their fellow soldiers' equipment and/or performance.

Nominations are being accepted for inventions initiated both by U.S. Army Soldiers (SGI) and by the Army science and technology community (AGI).

Nomination Criteria

The nomination criteria are:

- Nominated inventions must have been "first fielded" during calendar year 2011; the fielding window is from Jan. 1, 2011, to Dec. 31, 2011.
- The SGI "fielding" definition can include traditional and other expedited fielding methods of putting a new mission-critical product, device, or process to use by soldiers at any level. Technology nomination criteria for each award are available through the U.S. Army Research, Development, and Engineering Command (RDECOM), executing on behalf of AMC.

The nomination packages must be submitted by email to AGI-Awards@conus.army.mil. They must arrive no later than July 6, 2012.

Excellence Earns Awards at Best Installations Ceremony

AMERICAN FORCES PRESS SERVICE (MAY 2, 2012)
Army Sgt. 1st Class Tyrone C. Marshall Jr.

WASHINGTON—Senior defense officials today hosted a Pentagon ceremony featuring five installations recognized as the military's best for 2012.

Frank Kendall, acting undersecretary of defense for acquisitions, technology and logistics, hosted the Commander-in-Chief's Annual Awards for Installation Excellence ceremony.

"The commander-in-chief's award is the highest award a military installation can receive," Kendall said. "[But] it's clearly about people more than it is about installations. Today we honor the best of the best from each of the military services and from the Defense Logistics Agency."

"These [awards], are, I think, suitably called the commander-in-chief's awards," he continued," because installations are so important to what we do and the success of the entire military and Department of Defense."

Kendall provided some background on the Defense Department's installation infrastructure throughout the world, noting it's three times the size of Wal-Mart.

"Installations are the military infrastructure's backbone," he said. "The [Defense] Department's 500-plus installations include more than 555,000 buildings and facilities with an estimated replacement value of nearly a trillion dollars."

"These installations occupy more than 28 million acres of land in the United States and overseas," Kendall added. "And now more than ever these installations provide direct operational support to our forces deployed in overseas operations."

Kendall noted the accomplishments President Barack Obama talked about during his recent visit to Afghanistan are a direct result of "the fine work people do on installations throughout the country and overseas."

Installations competing for the excellence award are evaluated on energy and environmental management, quality of

life, unit morale, safety and health, communications, public relations, mission support, competitive activities, real property stewardship, and asset management, Kendall said.

This year's installations of excellence award recipients are:
- U.S. Army Garrison, Fort Stewart and Hunter Army Airfield, Hinesville, Georgia;
- Marine Corps Air Ground Combat Center, Twentynine Palms, Calif.;
- Naval Air Station Jacksonville, Fla.;
- Davis-Monthan Air Force Base, Tucson, Ariz.; and
- Defense Logistics Agency's Defense Distribution Depot, San Joaquin, Calif.

Dr. Dorothy Robyn, deputy undersecretary of defense for installations and environment, who also attended the ceremony and introduced Kendall, praised the five installation winners.

"Today, we will celebrate five installations that have excelled at both accomplishing their military missions and improving the quality of life for men and women who serve our nation," she said. "To this year's winners I offer my most sincere congratulations."

DoD Announces Winners of the Secretary of Defense Environmental Awards

DEPARTMENT OF DEFENSE NEWS RELEASE (MAY 1, 2012)

The Department of Defense has announced the winners of the 2012 Secretary of Defense Environmental Awards.

Each year since 1962, the Secretary of Defense has honored individuals, teams, and installations for their outstanding achievements to conserve and sustain the natural and cultural resources entrusted to the Department of Defense.

A panel of judges representing federal and state agencies, academia, and the public has selected the following installations, teams, and individuals as the winners of this year's awards:
- Scranton Army Ammunition Plant, Pa.; Sustainability — Industrial Installation
- Fort Hood, Texas; Environmental Quality — Non-industrial Installation
- U.S. Army Garrison – Hawaii, Oahu Army Natural Resource Team; Natural Resources Conservation — Individual/Team, Fort Hood Recycle Team, Texas; Environmental Quality —Individual/Team
- Stryker Brigade Combat Team – Warren, Mich.; Environmental Excellence in Weapon System Acquisition — Team
- Marine Corps Base Hawaii; Natural Resources Conservation — Small Installation
- Former Mare Island Naval Shipyard, Calif.; Environmental Restoration —Individual/Team
- 75th CEG, Hill Air Force Base, Utah; Environmental Restoration — Installation
- 30th Space Wing, Vandenberg Air Force Base, Calif.; Cultural Resources Management — Installation

For more information on 2011 Secretary of Defense Environmental Awards, please visit http://www.denix.osd.mil/awards/FY10SECDEF.cfm .

$54.7 Million Awarded to Universities for Research Equipment

DEPARTMENT OF DEFENSE NEWS RELEASE (MAY 8, 2012)

The Department of Defense (DoD) today announced plans to award $54.7 million to academic institutions to support the purchase of state-of-the-art research equipment. The 190 awards to 100 academic institutions are being made under the Defense University Research Instrumentation Program (DURIP) that augments current university capabilities or develops new university capabilities to perform cutting-edge defense research.

"The Defense University Research Instrumentation Program is essential to the department's investment in university research," said Zachary J. Lemnios, assistant secretary of defense for research and engineering. "Instrumentation is critically needed to accelerate research progress and ensure world-class research training for the next generation of scientists and engineers in defense-critical fields."

The Defense University Research Instrumentation Program supports DoD's investment of more than $2 billion each year in basic, applied, and advanced research at universities. It meets a critical need by enabling university researchers to purchase scientific equipment costing $50,000 or more. Researchers generally have difficulty purchasing instruments costing that much under research contracts and grants. The awards announced today are expected to range from $50,000 to $1.9 million and average approximately $288,000.

These planned awards are the result of a merit competition for DURIP funding conducted by the Army Research Office, Office of Naval Research, and Air Force Office of Scientific Research. Each office requested proposals from university investigators conducting science and engineering research of importance to DoD. This includes research underpinning advances in surface chemistry and physics; computing and networks; electronics and electro optics; neuroscience; fluid

Lt. Gen. Robert Allardice, Air Mobility Command vice commander, talks about the importance of science, technology, engineering, and mathematics-educated students to the Air Force. He was a member of a panel of educators and civil leaders brought together to discuss the importance of STEM at the America's Center in St. Louis on April 27, 2012. The other panelists were Dr. Phyllis Wise, Chancellor of the University of Illinois; Dr. Bill Peck, Director of the Washington University Center for Health Policy; Senator Kit Bond, former senator from Missouri; Kent Schien, President of Innoventor; and Bert Vescolani, President of the St. Louis Science Center.

dynamics and propulsion; robotics and autonomous systems; and ocean, environmental, and biological science and engineering.

In response to the requests, the research offices collectively received more than 700 proposals requesting $226 million in support for research equipment. All awards are subject to the successful completion of negotiations between DoD research offices and the academic institutions.

The list of winning proposals can be found at www.defense.gov/news/Fiscal_2012_DURIP_Winners_List.pdf.

Air Force Innovation

AIR MOBILITY COMMAND PUBLIC AFFAIRS (MAY 8, 2012)
Air Force Maj. Angela O'Connell

SCOTT AIR FORCE BASE, Ill.— Lt. Gen. Robert R. Allardice, Air Mobility Command's vice commander, was among a panel of educators and civic leaders in St. Louis on April 27 to discuss the importance of science, technology, engineering, and mathematics, or better known as STEM, education to an audience of teachers, parents, students, and business leaders.

Allardice conveyed how critical STEM-educated individuals are to the mission and role of Air Mobility Command and the Air Force.

"Within the Air Force, STEM personnel are found in all major commands," said Allardice. "The Air Force possesses significant levels of STEM proficiency for conducting a full spectrum of missions for air superiority, precision strike, air mobility and refueling, airborne intelligence, aeromedical evacuation, surveillance and reconnaissance, and operational command and control."

He continued with a story about the largest combat air drop since the invasion of Panama in 1989. He asked the audience to go back in time to the initial invasion of Iraq and visualize the problems associated with getting forces into the northern part of the country.

Simply stated, "we had a problem," said Allardice.

The solution was an airdrop, so on March 26, 2003, 1,000 Army paratroopers jumped from 15 C-17s.

"The capabilities STEM-skilled airmen brought to the fight enabled an armada to join in a single point in time," said Allardice. "Great American airmen were studying the weather – science; using GPS and night-vision goggles – technology; were able to operate in austere locations – engineering; and had planned over 140 possible routes – math."

The Air Force's competitive edge depends on a continuous investment in STEM education in order to elevate its capabilities in the development and employment of air and space power to an unequaled level.

"We have a legacy of innovation," said Allardice.

From being able to drop humanitarian aid to a specific point with our Joint Precision Airdrop System, to impressive medical advances that result in a 98 percent survival rate for wounded warriors that get to a field hospital within the first hour of injury, the Air Force continues to design, develop, and adapt new technologies, he added.

"We leverage new technology today to reduce our fuel consumption," Allardice noted. "Every day around the world, we implement new, more fuel-efficient ways of doing business: from loading cargo more precisely and removing excess aircraft equipment to flying more direct routes to destinations."

Because of the changing demographics of the American population and the increasing technical complexity of the Air Force mission, STEM skills are of high value. The Air Force has several emerging requirements where STEM competencies will be critical to include space operations, unmanned air systems, and operations in cyberspace.

"We need airmen who understand it all comes down to the basics," said Allardice. "The result is a force capable of dealing with the development, fielding, employment, and sustainment of systems."

Allardice closed by thanking all of the teachers and mentors in attendance for their ability to "inspire, enable, and empower our future," he said. "It takes educators like you to keep them [students] focused."

William Barnes, from Tinker Air Force Base, Okla., receives the Dr. James G. Roche Sustainment Excellence award from Air Force Chief of Staff Gen. Norton Schwartz during a Pentagon ceremony May 9, 2012. Barnes is the deputy chief, B-1 systems program office at Tinker.

Air Force photo by Andy Morataya

Tinker B-1 Program Awarded James G. Roche Sustainment Excellence Award

DEFENSE MEDIA ACTIVITY (MAY 11, 2012)
Air Force Tech. Sgt. Benjamin Rojek

WASHINGTON—The B-1 System Program Office from Tinker Air Force Base, Okla., earned an Air Staff-level award recognizing the Air Force Materiel Command program office with the most improved aircraft maintenance and logistics readiness performance.

William Barnes, the deputy chief of the B-1 System Program Office at Tinker was presented the Dr. James G. Roche Sustainment Excellence award by Air Force Chief of Staff Gen. Norton Schwartz during a Pentagon ceremony on May 9.

According to award documents, Airmen and contractors with the office worked to increase their B-1 Lancer warfighter fleet availability by 10 percent during fiscal 2011. This increase created the highest B-1 availability rate in the last four years.

"The B-1 is highly prized at the moment," said Jeff Vaughn, the chief engineer of the B-1 System Program Office. "And

this award tells us we're improving in every area we can think of."

In order to keep the aircraft out conducting missions versus under maintenance, Vaughn said the team is using a high-velocity maintenance approach. This boils down to having the right people, paperwork, and parts in the right place at the right time.

While having a high availability rate for the B-1 does a lot for the warfighter, the work of Tinker's B-1 System Program Office also helps taxpayers.

"If we can better orchestrate maintenance—completing a four-week process in two weeks, for example—we can save taxpayers a lot of money," Vaughn said.

In 2004, the Air Force chief of staff approved the award to promote maintenance excellence. Air Staff officials determine the awardees by calculating the improvements for a predetermined set of metrics and multiplying each metric by a corresponding weighted value.

The award is named for the 20th secretary of the Air Force. He served in the Air Force's top position from 2001 to 2005.

Department of Defense Awards $155 Million in Research Funding

DEPARTMENT OF DEFENSE NEWS RELEASE (MAY 16, 2012)

The Department of Defense announced today that it will issue 23 awards to academic institutions across the country to perform multidisciplinary basic research. The program expects to award $155 million over the next five years. The Multidisciplinary University Research Initiative (MURI) supports the research of teams of investigators whose backgrounds intersect multiple traditional science and engineering disciplines in order to accelerate research progress. The awards will be made by the Army Research Office (ARO), the Office of Naval Research (ONR), and the Air Force Office of Scientific Research (AFOSR), and are subject to successful negotiation between the institution and DoD.

"Research funded by the MURI program opens up entirely new areas of scientific inquiry, and builds the foundation for future capabilities that will benefit our joint forces," said Zachary J. Lemnios, the assistant secretary of defense for research and engineering. "We are also employing new processes to share research results with our industry partners at a much earlier point to accelerate the transition of concepts from research to end-use products."

The awards are the result of the fiscal 2012 competition that the ARO, ONR, and AFOSR conducted under the DoD MURI program. Based on the proposals selected in the fiscal 2012 competition, a total of 63 academic institutions are expected to participate in the 23 research efforts.

The highly competitive MURI program complements DoD basic research programs that support traditional, single-investigator university research. Multidisciplinary University Research Initiatives incentivize research by multidisciplinary teams through larger and longer awards. The awards announced today are for a five-year period, subject to availability of appropriations and satisfactory research progress. Multidisciplinary University Research Initiative awards provide greater sustained support for the education and training of students pursuing advanced degrees in science and engineering fields critical to DoD.

Army Research Office, the Office of Naval Research, and the Air Force Office of Scientific Research solicited proposals in 21 topics and received 251 white papers, which were followed by 78 proposals. The awards announced today were selected based on merit review by a panel of experts.

The list of projects selected for fiscal 2012 funding may be found at www.defense.gov/news/2012MURI.pdf.

Picatinny Engineer Pursues Improved Hand Grenade

U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND (MAY 16, 2012)
Eric Kowal

PICATINNY ARSENAL, N.J.—As far as the design of the basic hand grenade goes, essentially it has been frozen in time.

The first pull-pin design with a lever and delayed fuze dates back to May 1915 and is often referred to as the grandfather to the current variation.

"The basic technology is almost 100 years old," said Richard Lauch, a Picatinny Arsenal engineer, referring to the Mills Bomb No. 5.

The Mills bomb is the popular name for a series of prominent British hand grenades. They were the first modern fragmentation grenades and named after William Mills, a hand grenade designer.

Lauch, who served in the U.S. Marine Corps, has been on a mission to modernize the hand grenade so that it is safer as well as easier to use and cheaper to produce.

During the last year and half of his Marine service, Lauch was primary marksmanship instructor in the Weapons Training Battalion at Marine Corps Recruit Depot, San Diego, Calif.

While he was assisting in training recruits on the proper use of the M67 hand grenade, Lauch became intimately familiar with what he saw as the grenade's deficiencies.

The current grenade fuze design only allows for a right-handed user to throw it in the upright position. A lefty has to hold the grenade upside down to safely pull the pin.

Also, the current fuze consists of an explosive train that is in-line from production through usage; thus, it is always "armed."

In a grenade, the explosive train is the sequence of events that begins when the handle is released. That initiates a mechanical strike on a primer, which ignites a slow-burning fuze to provide time for the grenade to be thrown before the fuze sets off the primary explosive.

In an "in-line" explosive train, the sequence is always in-place and ready. Until it is removed, a pin in the handle is the only thing that prevents the sequence from being initiated.

Lauch believes his design is safer because a lefty or righty holds the grenade no differently, and because the grenade can only be armed by rotating the explosive chain in line.

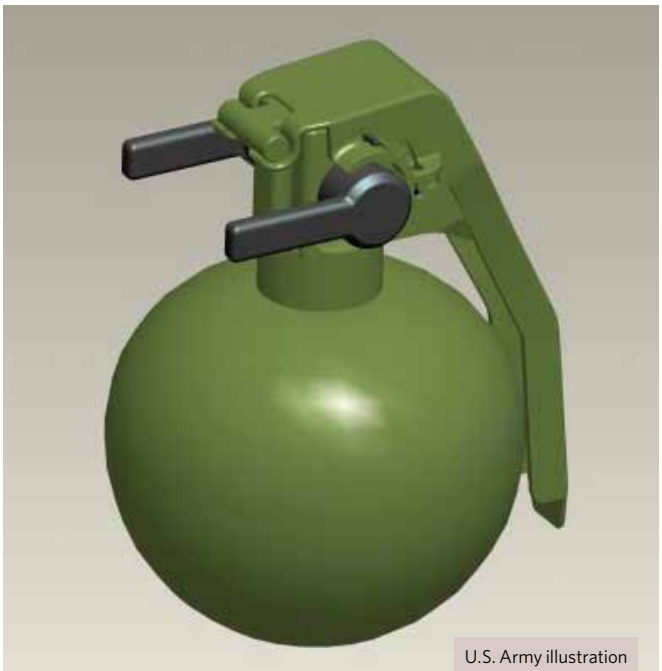
Lauch received some funding from the office of John Hedderich, executive director of the U.S. Army Armament Research, Development and Engineering Center's Munitions Engineering Technology Center. Lauch presented his idea before the patent evaluation committee with just two days' notice. The committee liked what it saw and labeled it a high priority.

On Dec. 29, 2011, a patent application was filed.

"We could have put him on any program," Edwina Chesky, a Fuzing Systems branch chief, said of Lauch when he first arrived at Picatinny. "Luckily we put him on grenade fuzes."

Lauch and Philip Gorman, the competency manager for Fuze Division, agree that there is still a lot of work on the product that needs to be explored. Final dimensions and delay mechanisms are still to be finalized. A patent does not mean a product will end up in the hands of troops anytime soon.

"At the end of the day, grenade fuzes are a real bear to make," Gorman said, "driven by the fact that you screw it



U.S. Army illustration

in-line. This explores the possibility to get rid of that in-line explosive," he said.

For the approval of his patent application, the U.S. Army Armament Research, Development and Engineering Center will receive a $200 invention award. Lauch plans to donate the prize money to the Wounded Warrior Project to help other injured soldiers like the injured master sergeant at Fort Dix that inspired Lauch to pursue his goal of putting a new grenade out in the field.

Kowal is with U.S. Army Research, Development and Engineering Command.

Holloman Squadron Takes Home AF's Top Logistics Award

49TH WING PUBLIC AFFAIRS (MAY 22, 2012)
Airman 1st Class Siuta B. Ika

HOLLOMAN AIR FORCE BASE, N.M. —The airmen of the 49th Logistics Readiness Squadron at Holloman Air Force Base, N.M., recently earned the Maj. Gen. Warren R. Carter Logistics Effectiveness Award, naming them the best Air Force logistics readiness squadron.

First introduced in 1962 by the Order of the Daedalians, the award is presented annually to an Air Force unit, selected by the chief of staff of the Air Force, who has achieved the best supply effectiveness record in the Air Force in support of mission aircraft or weapons.

An F-22 Raptor is refueled by petroleum, oil, and lubricants' technicians during a hot pit operation at Holloman Air Force Base, N.M., recently. These technicians, with the 49th Logistics Readiness Squadron, are responsible for all fuel on the installation.
U.S. Air Force photo/Airman 1st Michael Shoemaker

This marks the first time the 49th LRS has won the award under its current squadron designation, said Lt. Col. Frank Marconi, the 49th LRS commander.

"Here at Holloman, our supply squadron won the award in 1996, but we've never won the award as LRS," he said. "There are a lot of good squadrons out there, and it's a tough award to win. I'm humbled, proud, and so honored to be the commander of this great squadron, but the award is something that we didn't set out to win. Our mission was to provide world-class customer support."

The support the squadron provided affected not only units on the base, but also in the local community and in the Department of Defense's areas of responsibility.

"We won the best large squadron in a wing, which is something we've never done before," Marconi said. "We received 'excellent' ratings in both the [Operational Readiness Exercise and the Logistics Compliance Assessment Program], and our fuels flight were bronze winners of the American Petroleum Institute Award, which means they were the third best fuels flight in the entire Air Force."

Because the squadron shined in the three areas judged by Air Force officials—direct mission support, innovative management, and quality of life programs—Marconi said he believes his squadron truly deserved the award.

"It all ties back to my intention to provide world-class support, so the award really validates our successes, and that's what makes me so proud," Marconi said. "It took all 400-plus members of the squadron to win this award. When I look across the squadron, I see great people doing great things every day in every area. We didn't win this award because of a few words on a package; I believe that this truly is the best LRS in the Air Force, from our airmen all the way up to the flight commanders."

Because of the magnitude of the award, every member of the squadron knows their work directly contributed to earning the award, said Airman 1st Class Corey Carver, a 49th LRS traffic management specialist.

"It's very reassuring, because I feel like when Airmen are part of such a big squadron, especially while occupying a lower rank, that sometimes it's easy for them to believe that their contributions often go unnoticed," Carver said. "We have sacrificed time away from our families to ensure that the mission was accomplished. Long working hours takes its toll on the quality of family life and all the Airmen of the 49th LRS received well-deserved recognition for their efforts."

For one senior NCO of the squadron, earning the award brings back old memories.

"Holloman was my first base from 1994 to 2000, so it's kind of a rewind from last time," said Senior Master Sgt. Jon Voigt, the 49th LRS fuels management flight chief. "We won the [American Petroleum Institute Award] in '95 and the squadron won the Daedalian in '96, so we obviously contributed to that, but LRS is such a huge entity that it took a joint effort of all the flights in the squadron to be the best in the Air Force. It's an amazing feeling to have all the mentoring that we do, the professional development, the guidance we give; this is definitely an unprecedented feat."

Some of the squadron's other accomplishments in 2011 included bolstering battlefield support by deploying 137 airmen for a combined total of 16,000 days in the AOR; saving the wing $5 million through re-utilizing 1,400 pieces of equipment through the Defense Logistics Agency; raising the entire squadron's production 34 percent through the wing's Air Force Smart Operations for the 21st Century office; and devoting 969 hours to giving back to the local community through the Big Give Program.

Even with everything the squadron accomplished in 2011, Carver said he doesn't expect any airmen to rest on their laurels.

"Fortunately, the airmen of the 49th LRS share the same work ethic, so if anything, I believe that this award will motivate us to improve our performance for next year," he said. "Good workers don't just do what they're told. They plan ahead, they stay after closing, and they openly demonstrate obvious commitment. We all demonstrated this commitment and it paid off."

For Marconi, who is scheduled to make a permanent change of station move soon, the award validates his squadron's work. He said he expects the same from the squadron after his departure.

"They're the ones on the front line accomplishing the mission every day, so I want them to continue to get better every day, and there's no doubt in my mind that they will do that," Marconi said. "I have never been a part of a squadron that has earned as many accolades as we have here, so to be this squadron's commander is incredibly humbling. When the next commander comes here I'll be able to look him in the eyes and be 100 percent true and confident when I tell him how great all of the airmen are here."

Navy, Air Force Develop Engine Modification that May Save Billions

PROGRAM EXECUTIVE OFFICE TACTICAL AIRCRAFT PROGRAMS PUBLIC AFFAIRS (MAY 24, 2012)
Rob Koon

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md.—The Navy and Air Force stand to save more than $2 billion after jointly developing an engine modification that will keep critically important aircraft flying for years.

The two Services and industry worked together to develop and field a modification to CFM International's CFM56-2 (F108) engine, allowing them to restore exhaust gas temperature margins, increase fuel economy, and extend their time between overhauls from 10 to 15 years.

The CFM56 engines are used on the Navy's E-6B Mercury command and control aircraft and the Air Force's KC-135 Stratotanker. CFM International, the engine's maker, is scheduled to receive the Federal Aviation Administration certification of the engine modifications by the end of May, Navy officials said.

"As incredible as these achievements are, both the Navy and the Air Force were struggling to reclaim lost engine efficiency," said Andy Noble, the Navy's CFM56 propulsion engineer. "In our case, only half of the engine life was being regained after the first overhaul. We could not gain back the performance we saw with the original engine build. Even with improved build techniques and test cell procedures, we would be doing well to recover half of the original time on wing between overhauls."

About four years ago, the Navy CFM56 engine team, having exhausted all known means to reclaim lost engine performance, asked CFM to make design improvements.

That effort paid off and resulted in Jeff Bauer, the CFM program manager, submitting a proposal in April 2009 for commercially proven design improvements used in newer models of the CFM56 engine family, Noble said.

"The recommendations proposed by CFM addressed the Navy and Air Force concerns of reclaiming lost engine efficiency, as well as introduced fuel efficiencies that would bring additional benefits," he said.

Realizing incorporating these improvements were too costly for the Navy to implement on its own, the E-6B CFM56-2A engine manager, Gerry Cronkrite, pursued a collaborative effort with Tim Misner, the Air Force's CFM56-2B (F108)

engine lead program manager. Their coordination resulted in a plan that could be advantageous to both Services.

Empowered with this information, the Navy's E-6B program manager here and the Air Force's Headquarters Air Mobility Command at Scott Air Force Base, Ill., provided authorization to pursue the design improvements in early 2010. They then combined efforts to share the costs of flight and ground testing as well as gathering the necessary data required for FAA certification.

During the next few months, the updated engine would be tested, overhauled, and tested again four times. This extensive barrage of ground testing helped reduce the amount of flight test time required and provided CFM engineers a controlled environment to capture FAA certification data. When the ground tests were complete, the engine was rebuilt and certified ready for flight tests by Navy and CFM engineering.

To help prepare for the upcoming flight testing, Navy Lt. Stephen Haggard, a test pilot at Air Test and Evaluation Squadron 20 (VX-20), recommended flying all test points in the Navy E-6 Level "D" flight simulator. Those simulated flights were done in August and September 2011.

In early December 2011, having met all the readiness review requirements, Cmdr. Jason Rider, VX-20 chief test pilot authorized flight testing to begin. Testing was conducted between Dec. 9, 2011, and Jan. 11, 2012 through the coordinated efforts of VX-20, Navy Propulsion Engineering and CFM Engineering.

"I was excited and fortunate to have the opportunity to be a part of this Joint Service engine upgrade program that will provide both the Navy and Air Force huge cost savings over the life of the program," Haggard said. "This was a unique test program for the E-6B test team, requiring the skills of professional test pilots, flight engineers, and flight test engineers. The team used Crew Resource Management training to safely operate and maneuver this large multi-engine, multi-piloted aircraft to capture all the performance and operability data required to obtain FAA certification."

Cronkrite and Misner are coordinating acquisition and logistics for the effort, with the plan to incorporate design improvements into the engines at the Oklahoma City Air Logistics Center during depot-level overhauls for Navy and Air Force aircraft in fiscal 2013.