F-35 Lightning II Debuts
Testing The C-5M Super Galaxy
F-22 Raptor Deploys North
Final Flight Of The C-141 StarLifter
US Air Force Chief of Staff Gen. T. Michael Moseley announced Lightning II as the official name of the F-35 in the inauguration ceremony in Fort Worth, Texas, on 7 July. The name harkens back to two historic fighter aircraft: the World War II Lockheed P-38 Lightning and the high-performance, supersonic English Electric Lightning interceptor from the 1960s and ’70s.
F-35 LIGHTNING II DEBUTS
Taking The Wraps Off The Joint Strike Fighter

C-5M TAKES OFF
Launching The Newest Galaxy

NORTH TO ALASKA
F-22 Deploys To The Northern Edge Exercises

F-16S OVER AFGHANISTAN
European F-16s Support New Democracy

STARLIFTER FAREWELL
C-141 Takes Its Final Flight

EVENTS
F-35 LIGHTNING II DEBUTS

BY BETSY BLACK AND MARK LEWIS
The first F-35 Joint Strike Fighter met the world to fanfare worthy of a rock star as more than 1,300 employees, dignitaries, partners, and guests witnessed the unveiling at Lockheed Martin in Fort Worth, Texas, on 7 July. Thousands more fans around the world viewed the unveiling via satellite.

“What we may have begun as a leap of faith fifty-six months ago is today the most sophisticated, affordable, international multirole fighter of the 21st century,” noted Ralph D. Heath, president of Lockheed Martin Aeronautics Company. Among the dignitaries present for the event were members of the Texas Congressional delegation, including US Senators John Cornyn and Kay Bailey Hutchison and US Representative Kay Granger.

“Some of history’s greatest aircraft have rolled out of this Fort Worth factory,” said Hutchison. “Now we’re adding one more to the list.”

Added Cornyn, “This aircraft will revolutionize how we use air, Naval, and Marine forces.”
The F-35 Joint Strike Fighter is a global partnership among eight nations—the United States, United Kingdom, Italy, Netherlands, Turkey, Canada, Australia, Denmark, and Norway. The stage seating offered a tangible presence of that international team as US defense industry officials flanked one side of the stage and heads of international defense ministries and members from the JSF team partners flanked the other side.

Granger recognized the partner nations playing a vital role with the United States. "It’s certainly been a joint effort," she said. "We are proud our nation is standing shoulder to shoulder with eight partner countries from all over the world to act as one team. This partnership exemplifies the true success of the F-35."

After the speeches, the expansive backdrop screen recalled the milestones and progress made since the JSF downselect in October 2001. The pace quickened to the last slide: "The Future Begins...Right Now." The backdrop fell to reveal the newly painted F-35 bathed in spotlights. Audience members rose to their feet, erupting in applause.

"I felt a sense of pride knowing that the aircraft has come a long way since it rolled out of the factory," said Jeff Endres, a systems engineer who viewed the ceremony through a live video feed in the company’s auditorium. "It reminds me how involved our program is. I work on a small part of the program. Seeing the complete F-35 makes all the parts come together."

NEW NAME, NEW AIRCRAFT
US Air Force Chief of Staff Gen. T. Michael Moseley then took the stage to announce the official name of the stealth fighter: Lightning II. The name harkens back to two historic fighter aircraft: the World War II Lockheed P-38 Lightning and the high-performance, supersonic English Electric Lightning interceptor. The P-38 was flown by the top two American aces of all time, Majs. Richard Bong (forty victories) and Thomas McGuire (thirty-eight). The interceptor was developed in the mid-1950s by English Electric, now a legacy company of F-35 partner BAE Systems.

"To the men and women of Lockheed Martin who are making this program possible: You are awesome. Thank you for your work, and thank you for getting us to this point," said Moseley. "Today we collectively put the enemies of peace and freedom on notice. Today is the day those enemies have long feared—they know the introduction of this aircraft effectively ends their current defenses. They are left fully exposed to the decisive effects of air power—lethal and precise."

Moseley’s remarks drew from the past while looking confidently to the future. "Today we name the aircraft after two great legacy aircraft, two great pieces of air power history. Tomorrow this Lightning II will make a name for itself," he said.

TO THE FUTURE
With the fighter named, US Deputy Secretary of Defense Gordon England praised the program efforts made to date and encouraged dedication and hard work in the future. "The Joint Strike Fighter is a giant step forward for unity of effort and for meeting the security challenges of the 21st century," he said. "But a great deal of hard work still lies ahead."

"Today is a day of great hope and optimism," continued England. "Hope for success in this groundbreaking program, hope for ever-stronger international partnerships, hope for the prospects of freedom and liberty in more places around the world, and the true and well-founded hope that we will be able to leave a safer and better world for our children and grandchildren just as the heroes of World War II did for us."

Betsy Black and Mark Lewis are communications representatives for Lockheed Martin.
F-35 BACKGROUND

Lockheed Martin is the F-35 prime contractor, while Northrop Grumman and BAE Systems are principal partners. The midfuselage is manufactured by Northrop Grumman in Palmdale and El Segundo, California, and the aft fuselage and tails are manufactured by BAE Systems in Samlesbury, England. Lockheed Martin manufactures the forward fuselage and wings and performs final assembly in Fort Worth, Texas.

The F-35 program is the largest aerospace defense program in US history. The single-engine F-35 will be manufactured in three versions: the F-35A conventional takeoff and landing, or CTOL, variant for the US Air Force; the F-35B short takeoff/vertical landing, or STOVL, version for the US Marine Corps and the Royal Air Force and Royal Navy; and the F-35C carrier version, or CV, for the US Navy.

Each F-35 version is approximately fourteen feet tall and fifty-two feet long. Wingspan for both the A and B models is thirty-five feet, while the F-35C wingspan is forty-three feet. The F-35, capable of speeds in excess of Mach 1.6, is powered by a single Pratt & Whitney F135 or GE Rolls-Royce Fighter Engine Team F136 engine. Both produce approximately 40,000 pounds of thrust in afterburner. The F-35 is the most powerful single-engine fighter ever built. The aircraft has a maximum gross weight of approximately 60,000 pounds.

Nominal armament will consist of two AIM-120 radar-guided air-to-air missiles and two precision-guided air-to-surface weapons internally with two additional air-to-air missiles and up to 15,000 pounds of ordnance on seven external hardpoints. The F-35A will have an internal 25 mm gun carried in a fairing on the aircraft’s left shoulder, while the F-35B and F-35C will carry the 25 mm gun in a removable external pod. The F-35 is designed to replace aging fighter inventories, including US Air Force A-10s and early model F-16s, US Navy F/A-18A/Cs, US Marine Corps AV-8B Harriers and F/A-18A/C/Ds, and UK Harrier GR.7s and Sea Harriers.

The F-35 program is approximately five years into its twelve-plus year development phase. It is a cooperative development program in the system development and demonstration phase, or SDD, between the United States and eight international partners. SDD involves developing and testing the entire aircraft system, including manufacturing. During SDD, a total of twenty-three test aircraft will be built. Fifteen will undergo flight testing; seven will be used for ground test activities; and one will be used to evaluate the F-35’s radar signature.

Current planned procurement of 2,581 F-35s by the United States (2,443 aircraft) and the United Kingdom (138) is basis for the airplane’s estimated average unit cost of $45 million to $60 million, depending on the variant. Total projected partner procurement is approximately 745 aircraft, which includes UK procurement.

First flight of the F-35A is scheduled for late in 2006, with first flight of the F-35B to follow in early 2008. The first flight of the F-35C is planned for early 2009. Flight tests will be conducted at Fort Worth and at the Air Force Flight Test Center at Edwards AFB, California, and Naval Air Warfare Center–Aircraft Division test facility at NAS Patuxent River, Maryland. Additionally, the STOVL and CV variants will undergo sea trials aboard both US and UK carriers.
What impresses onlookers most about the first fully modernized C-5M Super Galaxy strategic airlifter is not the twenty-two foot long, 300-pound, orange flight test instrumentation boom on the nose, though the structure is striking. It’s not the new cargo compartment lighting, or the new auxiliary power units, or the nearly seventy other improvements made to the aircraft. The fact that most people who are not NBA players can stand upright in the cowlings of the new larger turbofan engines on the C-5M is certainly impressive. What first gets most people’s attention is what comes out of the back of those powerplants—dramatically less noise. **BY JEFF RHODES**

C-5M TAKES OFF

The more than 500 US Air Force representatives, engineers, and longtime employees on the C-5 program present at the Lockheed Martin facility in Marietta, Georgia, on 19 June for first flight were the first to hear exactly how quiet the C-5M is on takeoff. The aircraft, flown by Air Force Lt. Col. Todd Markwald in the pilot’s seat and Lockheed Martin test pilot Steve Knoblock in the co-pilot’s seat, lifted off in approximately 3,200 feet, which happened to be right in front of the crowd. The giant transport that now fully meets the stringent Federal Aviation Regulation Part 36, Stage III requirements for reduced noise was almost out of earshot after it crossed the end of the 10,000-foot runway that Lockheed Martin and Dobbins ARB share.

“The first flight of this aircraft was basically a functional check flight tailored to safety-of-flight parameters,” notes Knoblock. “We had to prove the aircraft was good enough to go into flight test.” This C-5M, which is twenty years old, had been sitting on the ground for the past twenty months being modified. The first flight crew included flight engineers Air Force MSgt. Jeff Williams and Bill Lehto and Ron Bailey of Lockheed Martin and flight test engineers John Calin and Dave Shaw of Lockheed Martin. The crew landed at Dobbins
after a 3.2-hour sortie over north Georgia and Alabama. Initial flightworthiness tests were later completed on 1 July.

This first C-5M (Air Force serial number 86-0013) is the product of two major modification programs, the C-5 Avionics Modernization Program, or AMP, and the C-5 Reliability Enhancement and Re-engining Program, or RERP. When a C-5 has been through both programs, it is re-designated C-5M. A total of 111 C-5A/B/C and now M-model aircraft are currently in the inventory, with 108 aircraft operational with active duty Air Force, Air National Guard, and Air Force Reserve Command units. The C-5 fleet has approximately sixty percent of its useful life left. The complementary modification programs are expected to extend the life of the C-5s until 2040.

AMP replaces the 1960s- and 1970s-era analog avionics system in the C-5 fleet with a commercially available digital suite along with an integrated architecture that allows for upgrades. It also incorporates an advanced embedded global positioning/inertial navigation system and improved communications equipment that adds satellite communications and a high-frequency datalink. These improvements ensure access to the global communications, navigation, and surveillance/air traffic management airspace, which essentially puts eight aircraft in the space now filled by two aircraft of any type. Noncompliant aircraft will be forced to take longer routes over the ocean, which, in the case of the C-5, means carrying more fuel and less cargo.

AMP began in 1999 with first flight of an AMP-modified C-5 occurring in December 2002. Kit installation began in 2004 at Dover AFB, Delaware, and followed later at Travis AFB, California. The Air Force completed operational test and evaluation of the AMP system this past June after more than 225 flights. Crews from Dover and Travis have been flying AMP aircraft operationally since 2005, including flying into Kuwait to support Operation Iraqi Freedom. They have logged more than 4,000 total flight hours.

The reliability enhancement portion of RERP makes up most of the modifications to the aircraft. Part of the enhancements replace out-of-production or historically unreliable components with updated ones, while others add structural strength. Every area of the aircraft is enhanced. RERP includes changes or modifications to the airframe structure (fifteen items), environmental and pneumatic systems (eight), hydraulic system (five), electrical system (two), fuel system (four), landing gear (seven), and flight controls (thirteen items). Four additional
Avionics system upgrades were shifted from AMP to RERP.

“Reliability enhancement is the big thing,” notes Knoblock. “With the legacy aircraft, engine time on the wing averaged around 1,500 hours before some sort of maintenance would necessitate having to remove the engine. With the new engine, it should be about 10,000 flight hours before any maintenance requiring removal will be necessary.” In addition, the new engine pylon, built by Goodrich, allows direct access to the line replaceable units inside the pylon and has easier-to-reach connections to the fuel and hydraulic lines.

The heart of the RERP program is the General Electric CF6-80C2L1F turbofan engine. The CF6 engine, which carries the military designation of F108, though it is seldom referred to that way, is nominally rated at 60,000 pounds of thrust but will be derated on the C-5M to 50,000 pounds of thrust. Even derated, these engines give the Super Galaxy twenty-two percent more thrust than the out-of-production TF-39 engines on the C-5A/B/C aircraft. This proven engine

**AMP REPLACES THE 1960S- AND 1970S-ERA ANALOG AVIONICS SYSTEM IN THE C-5 FLEET WITH A COMMERCIALLY AVAILABLE DIGITAL SUITE ALONG WITH AN INTEGRATED ARCHITECTURE THAT ALLOWS FOR UPGRADES.**
powers 229 commercial and military customers, including powering the VC-25s that transport the President of the United States.

More than 6,600 CF6 engines are in service, and the type has accumulated more than 288 million flight hours. As Knoblock noted, the engine is designed to stay on the C-5M for ten years without needing to be removed. The new engines will propel the C-5M with a 769,000-pound takeoff weight to 31,000 feet in just nineteen minutes on a hot day—better than the Air Force requirement to reach that height in twenty-five minutes. The current engines require thirty-three minutes to get the C-5A/B/C aircraft to 24,000 feet (at a takeoff weight less than 769,000 pounds).

Taken together, the two modernization efforts will see a wartime mission capable rate—the bottom line—for the C-5 fleet in excess of seventy-five percent assuming sufficient spares, an increase of more than fifteen percent over the current rate. The peacetime mission capable rate is expected to be in the mid-eighty percent range. AMP and RERP are expected to reduce operations and support costs by approximately $20 billion dollars in base year 2000 calculations, which means the program recoups its approximate $8 billion cost more than twice over during its service life. Most importantly, the Air Force will have an airlifter with greatly improved performance and payload capability.

“We had old-style analog devices in the C-5 before,” notes Knoblock. “We relied on contacts and relays versus ones and zeros now. We had a lot of growing pains with those analog-to-digital interfaces in AMP. While involved, avionics test is relatively straightforward. With RERP, we have new engines, pylons, and structures, so we will need to get new loads and flutter data. Everything connected with the powerplants, including bleed air and the APUs, has to be tested. We will do a lot of specialized testing, such as testing flying qualities with an engine inoperative. The difference between AMP and RERP is sort of like the difference in making sure the TV and stereo are hooked up versus putting a new roof on your house. We have a lot of work to do in a short amount of time.”

Three aircraft will be involved in the C-5 RERP test program, two C-5Bs and one C-5A. The two C-5Bs were the first aircraft to receive production AMP kits on the installation line at Dover AFB.
Most importantly, the Air Force will have an airlifter with greatly improved performance and payload capability.

Work began on 86-0013, one of the C-5Bs, in October 2004, and the first engine run occurred in January 2006. This C-5M will be used primarily for flying qualities, flight performance, climatic testing, and performance envelope expansion.

Modifications on the second C-5B (86-0025) began in January 2005. The aircraft is expected to be flown by fourth quarter 2006. This C-5M will be used mostly for utilities and subsystem tests, airfield performance, and diagnostics testing. The distinctive nose instrumentation boom will be installed later. “This aircraft has a lot of bow wave,” notes Knoblock. “The boom needs to be long enough to get in front of the bow wave into undisturbed air.”

The lone C-5A model in the test program (69-0024) was the C-5A AMP test aircraft. RERP modifications began on it in September 2005. First flight for this aircraft is expected by early 2007. It will be used for human factors, technical order validation and verification, acoustics, and operations testing.

“A majority of the test program will be conducted in Marietta,” Knoblock says. “Most of the test flights will last three or four hours, and the test plan calls for up to 1,000 test hours on approximately 200 flights. Testing requiring a large, long runway will be conducted at Edwards AFB, California. One such test involves 840,000-pound gross weight, and we can’t do that in Marietta. The local area for a C-5 could be 1,000-mile radius. The test program is all-encompassing in terms of the flight envelope, payload, structure, and all the other systems.”

Dynamic taxi testing, where the structural strength and flexibility of the new engines and pylons are tested over a variety of surfaces, was completed at the Air Force Flight Test Center at Edwards in August.

Under the current schedule, an RERP production go-ahead decision is expected by mid-2007. After a production gap of approximately one year between the end of test and the start of production kit installation, the RERP modification line should begin in Marietta in late 2008 or early 2009. Production will ramp up to twelve aircraft a year beginning with Lot 6, which, if the schedule holds, will go on contract for long-lead items in late 2010 with kit installation set to begin in 2013.

The newer C-5Bs will be modified first, with production Lots 1 through 6 covering the modification of thirty-eight C-5Bs. Lot 7 calls for the modification of the last nine C-5Bs, the first production C-5A and the two C-5Cs, which were specially modified in the late 1980s to carry spacecraft, and the first production C-5A. Lots 8 through 12 will be for modification of the other sixty C-5As. The last modified aircraft is scheduled to come off the Marietta modification line in 2020.

Jeff Rhodes is the associate editor of Code One.
Achieving nine aerial victories on a single mission qualifies for bragging rights in any fighter pilot circle even if those victories occur in simulated Red/Blue engagements. An F-22 pilot from the 27th Fighter Squadron from Langley AFB, Virginia, accomplished that very feat in June at Northern Edge exercises in Alaska. Six AMRAAMs, two Sidewinders, and one burst of rounds from a Gatling gun account for the total. Nine may not be the ultimate maximum: he had ammunition left in the gun. For aviation history buffs, nine victories equal the real-world US record of Cmdr. David McCampbell, an F6F Hellcat pilot and the Navy’s leading ace in World War II.

“The nine-kill mission may get a lot of exposure,” says Lt. Col. Wade Tolliver, commander of the 27th Fighter Squadron. “Was it cool? Yes. But working with F-15s and F-18s to produce a kill ratio of eighty-three to one that day was way cooler. Not the fact that one F-22 happened to produce nine of those eighty-three hits.”

Tolliver describes the aerial scene: “During that mission, our Blue forces faced the heaviest air threat we’ve seen in recent history. The total mission or vulnerability time was two and one-half hours. Those flying as Red Air developed their own tactics. In a single vulnerability period, they would use mass forces to try to overrun our Blue forces. At other times, they sent successive waves of smaller individual packages in a variety of tactics. To generate the numbers, Red Air returned to a simulated base to regenerate. Actually, they went to a tanker to get fuel and then came back to create additional threats.”

“The pilot with nine simulated kills flew as my wingman that day,” explains Capt. Harry Schantz, the safety officer for the 27th FS. “His nine kills were a function of the situation. We were making sure everyone could get gas, and we were keeping our area safe. We tried to shoot every missile we had. Red Air threats were almost overwhelming, but we handled every one of them. We averaged five to six kills per F-22 pilot on busy missions like that during the exercise.”
Large-scale missions are the raison d’être for Northern Edge. The annual exercise is designed to prepare joint forces to respond to crises in the Asia-Pacific region. Participants sharpen skills; practice operations, techniques, and procedures; improve command, control, and communication relationships; and develop interoperable plans and programs. This year’s event brought together more than 5,000 active duty, Guard, and reservists from the Army, Navy, Air Force, and Marines. More than 120 aircraft and helicopters participated, including F-15C/Es, F/A-18C/Es, EA-6Bs, F-16s, B-2 bombers, KC-135 tankers, and E-2 and E-3 AWACS aircraft. Two Aegis cruisers and several surface vessels were involved as well when the missions occurred over the Gulf of Alaska.

Northern Edge is alternated year to year between US Pacific Command and US Northern Command, with PACOM in charge in even years. Exercises in even years last two weeks and focus on air-centric operational plans, maritime interdiction, transformation initiatives, and personnel recovery. Odd year exercises last one week and focus on homeland defense.
F-22 DEBUT

The 1st Fighter Wing from Langley deployed twelve Raptors, eighteen pilots, and 174 maintainers of its 27th FS to Elmendorf in late May, the longest deployment to date for the F-22. The aircraft stayed in Alaska for six weeks.

“A combination of circumstances brought us here,” says Tolliver. “First and foremost, we wanted to involve the Raptor in a large-scale exercise. When our runway at Langley was closing for a two-month repair during the same time period, we saw the timing as perfect to take our aircraft on an extended deployment.

Furthermore, we also thought the timing was perfect to introduce the Raptor to Elmendorf as they will eventually be based here,” continues Tolliver. “The wing can see how the aircraft deploys, how it moves on the ramp, how it operates in this airspace, and what levels of support it needs. Not only did the 3rd Wing at Elmendorf learn from the Raptor visit, but the local community also learned a lot about the aircraft through public and media days hosted by the base.”

“Our entire wing wants to learn as much as we can about this airplane,” adds Brig. Gen. Hawk Carlisle, commander of the 3rd Fighter Wing at Elmendorf. Raptors are scheduled to arrive at Elmendorf in about one year starting with the first airplane, tail number 4087, which rolled off the assembly line in fall 2006. “The Air Force chief of staff would like us to accept the first airplanes here in January 2008, but we would like to get them sooner to beat the winter weather,” Carlisle adds.

The Raptor visit directly addresses issues surrounding the eventual basing of F-22s at Elmendorf. “Some have questioned whether Elmendorf is ready for the F-22 in terms of infrastructure and support,” notes Tolliver. “We’ve been here for five weeks flying fourteen missions every day, launching eight in the morning and turning six in the afternoon. The Raptors are doing great. They will perform just fine when they arrive next year.”

“We are doing a lot with the F-22 on the expansive ranges in Alaska,” says Carlisle, who was one of the core USAF pilots who flew the prototypes during the competition between the YF-22 and the YF-23. “Our overland, supersonic, and instrumented air-to-air and air-to-ground ranges are phenomenal. They are conducive to the high-speed tactics flown by the Raptor. Elmendorf is the right place to bring the Raptor, and we are very excited to have it here.”
FIRTS AND RESULTS

Northern Edge is the first major exercise for the F-22. It is also the first Raptor deployment outside the continental United States. More importantly, though, deploying 3,200 miles nonstop and operating at a new base put new aircraft to a real test. Did the F-22 succeed?

“Yes, we succeeded,” answers Tolliver. “The day after the first jets landed, we flew thirteen sorties, and that was with ten aircraft since the remaining two arrived the next day. This fact in itself is an awesome accomplishment and proves the Raptor can deploy and be an immediate contributor to joint or coalition forces.”

Tolliver’s opinions are backed by additional statistics. On one particular mission, though comprising just thirty-three percent of the total Blue air-to-air forces, F-22s managed to eliminate sixty-six percent of the threats. The aerial victory ratio for the Raptor in the first week of the exercise alone was 144-to-zero losses. (For those paying close attention, the one loss in the eighty-three-to-one mission was an F-15.)

For the entire two-week exercise, the Raptor comprised just thirty percent of the Blue Air, yet managed to defeat almost half of the overall threats.

The Raptor did more than defeat aerial threats. The Langley-based F-22s dropped twenty-six Joint Direct Attack Munitions while working with ground-based forward air controllers. All twenty-six bombs were direct hits. Many of the pilots, who mostly flew air-to-air combat missions in F-15Cs, were dropping bombs for the first time in this exercise. Northern Edge was the first time operational F-22 pilots dropped munitions while working with forward air controllers in a close air support role.

Of the 105 scheduled Raptor sorties in the exercise, 102 actually launched. This ninety-seven percent sortie generation rate for the twelve deployed F-22s certainly contributed to the overall results: aircraft availability being a prerequisite for combat effectiveness. “The ability to work away from the support and supply structure of our home station and still produce such high sortie generation figures is arguably the largest success of the entire Alaska deployment,” says Tolliver.
MORE SUBTLE FIRSTS

The F-22 can claim another first in this Northern Edge: the first time the US Air Force, Navy, and Marine units combined F-22s and F/A-18s to fly integrated defensive counter air tactics. “The integration of this fifth-generation aircraft with our legacy forces creates a much more lethal and survivable force than we have ever seen before,” explains Tolliver. “The F-22’s sensors and the integrated avionics produced so much battlespace awareness that we were able to share critical information with other platforms.” This sharing increased the lethality and survivability of less-capable fighters. “That is truly transformational. We can complement, direct, and assist other platforms from the cockpit of our single-seat fighters. Even though we have never functioned as joint forces before, we found it works great.”

Capt. Schantz adds some specifics. “F-22 pilots have the ability to use sensors to a greater degree than any other fighter pilots because of the Raptor’s sensor fusion capability,” he explains. “The F-22 scope is fully integrated to show the entire battlespace. In the heat of the fight, we can provide necessary information to other pilots at that right moment because we are fighter pilots talking to other fighter pilots.”

Schantz explains that, even though an AWACS has thirty radar controllers aboard with a lot of combined situational awareness, information on their scopes is displayed as radar blips. “Our F-22 blips show what type of aircraft we’re seeing,” he says. “The information is deciphered for us so that we can sort friend from foe much more easily.”

The Raptor starts with more situational awareness than an F-16, F-15, or F/A-18. “The Raptor is a light year ahead of those fighters,” explains Brig. Gen. Burton Field, commander of the 1st FW at Langley. “Assessing the situation and melding the radar picture of a four-ship so everyone has the same situational awareness can be extremely demanding in fourth-generation fighters.”

The Raptor begins with immediate situational awareness that can be provided to other assets in the fight. “We can make each one of those players better, and we can make the entire force better. Sharing that situational awareness at the right time and in the right manner requires a different skill set than the one needed to operate a legacy fighter effectively. Those new skills are more associated with the skills of a mission commander.”

Mission commander or battle manager may not be the right term. “I don’t think we have an accepted term for the function of a Raptor pilot in a large-scale force,” Field continues. “We aren’t necessarily in charge of the fight, but we can play a more prominent role in the fight than any other aircraft. I don’t think we have the vocabulary or the tactical mindset that fits the capabilities offered by the F-22. We may not have the operational mindset either.”

Determining the role of the Raptor is a work in progress. “We attempt to integrate our efforts, but we sometimes end up only synchronizing them,” explains Field. “The goal is to thoroughly integrate the F-22 into the entire fight in a way that makes us all far more capable.”

Much like an avionics suite in fourth-generation fighters, their various missions—from offensive counter air to suppression and destruction of enemy air defenses—are often more federated as opposed to integrated. “An integrated F-22 adds value to many different mission sets simultaneously and makes the sum of the parts greater than the whole,” continues Field. “That role is way different from what we now do. I expect our younger pilots will adapt to the new roles made possible by the F-22, and then improve upon them.”

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European F-16s began operating over Afghanistan in October 2002 with the deployment of Dutch F-16s to Manas AB in Kyrgyzstan for Operation Enduring Freedom. The Dutch, Danes, and Norwegians originally sent six planes each for six months. Denmark and Netherlands prolonged their commitment in early 2003, redeploying in October 2003. The Afghan elections on 9 October 2004 led to a renewed deployment of six Dutch F-16s to Manas. Royal Netherlands Air Force F-16 pilots flew missions during the election period to safeguard ISAF ground personnel before returning to the Netherlands on 19 November.

The third, and most recent, European F-16 deployment occurred in 2005. This time, aircraft and personnel were sent to a location inside Afghanistan, Kabul International Airport. Dutch F-16s began operating from Kabul in April 2005. The Belgian Air Force arrived that July, marking the first peacekeeping operation outside of Europe for them. The Expeditionary Air Wing formed by the two air forces is under Dutch command and operates eight F-16s, four Dutch and four Belgian. F-16s and personnel from Norway replaced the Flemish contingent in February 2006. Norway redeployed its F-16s redeployed in May.

The RNLAF plans to redeploy its F-16s farther south to Kandahar at the end of 2006 as ISAF activities extend to this region of Afghanistan. These aircraft will support a new mission of 1,400 Dutch ISAF soldiers for two years in the province of Uruzgan beginning in August 2006. The total commitment of RNLAF F-16s has been increased to eight aircraft. “Creating a democracy takes a lot of time,” says former RNLAF Deputy Commander Maj. Gen. Jaap S. Willems. “We have to be patient, otherwise everything we’ve done will have been to no purpose at all.”

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Approximately 18,500 military personnel from thirty-seven countries are stationed in Afghanistan as part of the International Security Assistance Force, or ISAF. Their task is to help the Islamic Republic of Afghanistan construct a new democracy by providing Afghans with a safe and secure environment. ISAF, established by the United Nations in December 2001, is under the command of the Supreme Allied Commander Europe based at NATO Joint Force Command headquarters in Brunssum, Netherlands. A variety of air forces operate transport helicopters, cargo planes, and fighters for ISAF. F-16 units from Belgium, Netherlands, and Norway have all played vital roles in this mission.
Capability Improvements
Dutch F-16s are equipped with the Photo Reconnaissance Intelligence Strike Module, called PRISM. This system converts the images derived from the targeting pod into transmittable digital photos. A chosen target can be verified by ground personnel in real time. The F-16 pilot identifies a target, creates a PRISM photo, and then sends it back to the forward air controller or to headquarters. The FAC or headquarters checks whether the pilot has indeed determined the right target and, if so, confirms it for the pilot.

Team Kabul
The detachment at Kabul International Airport consists of some 170 military personnel. The pilots come from various F-16 squadrons and are exchanged every five weeks. Here the Netherlands team of the fifth detachment celebrates completion of 400 flight hours in April 2006. The milestone was reached in three months. In early September, the F-16 detachment at Kabul has flown more than 2,500 missions, accounting for more than 8,200 flying hours.

Night Operations
Experienced pilots aided by night vision goggles carry out their landings entirely in the dark, a procedure never used in Europe. Pilots less experienced with NVGs switch on their landing lights just before touchdown.
Loadings
Each F-16 is equipped with two GBU-12 500-pound laser guided bombs, 510 rounds of 20 mm ammunition, two AIM-9L Sidewinder missiles, a laser targeting pod, and a pair of underwing fuel tanks. Norwegian F-16s are equipped with the Lockheed Martin Sniper XR Pantera targeting system. RNLAF F-16s fly from Kabul with the Medium Altitude Reconnaissance System, also called the MARS pod.

Landings And Takeoffs
Dutch and Norwegian F-16s land using their drag chutes to avoid possible shoulder-fired surface-to-air missile attacks by hostile forces at takeoff, the F-16s depart the area at high speed and low altitude.

Signing Off
The fifth detachment commander of the Expeditionary Air Wing at Kabul, Lt. Col. Jos Leenders, signs off on his paperwork before launching on a combat air patrol mission over Afghanistan. Clearly visible is the green patch of the International Security Force.
Reliability
According to Lt. Col. Jos Leenders, the reliability of the F-16s has been excellent during this deployment. "Despite the sand and the dust," he says, "the operational status of the F-16 is more than ninety-five percent with no problems occurring worth mentioning."

Quick Reaction Alert
European personnel deployed to Kabul maintain a quick reaction alert force with two F-16s around the clock. These aircraft must get airborne within fifteen minutes, depending on the political or military circumstances in the country. The deployed air forces rotate this responsibility on a weekly basis.

Commanders Walk
Lt. Col. Wido van der Mast (left) and Lt. Col. Peter Tankink set out for a night mission over Afghanistan. Van der Mast is the fourth detachment commander; Tankink is the third detachment commander, with Kabul his fifth international assignment with the F-16.
STARLIFTER FAREWELL
A n era came to an end on 6 May as the US Air Force retired the last Lockheed Martin C-141 StarLifter air-lifter. The last of the breed was flown to the National Museum of the United States Air Force at Wright-Patterson AFB, near Dayton, Ohio, to close out the transport’s unparalleled forty-three year career.

The C-141 was the world’s first turbofan-powered transport, serving as a major component of the US strategic airlift force since entering operational service in 1965.

A total of 285 C-141 aircraft were built from 1963 to 1968. The peak year for production was 1967 when 107 C-141s came off the then-Lockheed-Georgia Company assembly line in Marietta, Georgia. The StarLifter fleet recorded a grand total of 10,640,908 flight hours or an average of approximately 38,494 hours per airframe. The lone L-300 commercial variant of the StarLifter was used as a company demonstrator. It was later sold to NASA and became the Kuiper Airborne Observatory. It served science for two decades.

The first flight of the first C-141A—there was no prototype—came on 17 December 1963, the sixtieth anniversary of the Wright Brothers’ first powered flight. That aircraft (Air Force serial number 61-2775) is now on display at the Air Mobility Command Museum at Dover AFB, Delaware. The StarLifter began its Air Force service career on 19 October 1964 when the first aircraft was delivered to Tinker AFB, Oklahoma, for aircrew training. More than thirty squadrons with sixteen active duty Air Force, Air Force Reserve Command, Air National Guard, Air Education and Training Command, and Air Force Materiel Command units eventually flew the aircraft.

In August 1965, the first C-141 missions were flown to Vietnam. The C-141A aircraft were capable of carrying either 138 troops or approximately 62,000 pounds of cargo, reducing a seventy-two hour trip with stops from Travis AFB, California, to Tan Son Nhat AB, South Vietnam, in a C-124 (the C-141’s piston-powered predecessor), to a thirty-six hour trip. On the return, crews could carry up to eighty litters plus attendants on medevac flights. Some 6,000 medevac flights were flown on StarLifters from 1965 until 1972.

In the early 1980s, 270 of the C-141As were stretched by adding twenty-three feet to the fuselage and were redesignated C-141B. The C-141B could carry either 68,725 pounds of cargo, or 200 troops, 155 paratroops, or fourteen aeromedical attendants and a maximum of 103 litters—although the usual load was seventy-six ambulatory and litter patients when comfort pallets, a cargo pallet-mounted lavatory and kitchen combination, were used.

From 2003 until the StarLifter’s last combat mission in September 2005, C-141 crews flew more than seventy percent of the aeromedical evacuation flights from points in the Middle East and Iraq. From 2002 until 2005, C-141 crews flew more than 2,000 combat sorties and moved more than seventy million pounds of cargo in theater.

In addition to participating in every military operation from Vietnam to Iraqi Freedom, C-141 crews also performed humanitarian relief flights to nearly seventy countries on all seven continents. StarLifter crews conducted Antarctic resupply flights for nearly three decades, landing directly on the ice without skis at McMurdo Station. C-141s were also used for flight research.

Fittingly, the last operational C-141 missions were to fly relief supplies to areas affected by Hurricanes Katrina and Rita and to fly evacuees out of those areas last fall.

On the last flight, the last StarLifter (serial number 66-0177), a C-141C nicknamed Hanoi Taxi, was flown by a crew from Air Force Reserve Command’s 445th Airlift Wing from the Patterson side of the base to the Wright Field side where the museum is located. The flight lasted about forty-five minutes.

This particular aircraft was first flown in 1967. It was converted to a C-141B in the early 1980s. In the mid-1990s, the aircraft was one of fifty-six C-141Bs to be equipped with digital avionics to become C-141Cs. Hanoi Taxi was retired with 39,469 flight hours.

On 12 February 1973, the last StarLifter, then a C-141A assigned to the 63rd Military Airlift Wing at Norton AFB, California, was flown to Gia Lam Airport, near Hanoi, North Vietnam, in the first mission of Operation Homecoming, the repatriation of former American prisoners of war.
Forty prisoners were flown out on the first flight, and 103 more came out on two other Norton-based C-141s (serial numbers 65-0243 and 65-0236) flown to Hanoi that day. Other flights followed, and the C-141s became known as Freedom Birds.

In preparation for the last flights, the 445th AW maintainers had hand-washed the entire aircraft with Formula 409 spray cleaner. *Hanoi Taxi* literally gleamed.

There were two flights on 5 May recreating the POWs’ release from captivity. Many of the “jailbirds”—as the former POWs kiddingly refer to themselves—were in Dayton for a reunion and had not been on a C-141 in thirty-three years. Navy Cmdr. Ed Davis sneaked a stray dog he named Ma-Co out of Hanoi in 1973, so he felt that it was only appropriate to carry Sophie, his current dog, on board with him during the flight. Another former POW, Cmdr. Tom Hanton still fit in the same dark blue trousers, blue shirt, and gray jacket he was issued by the North Vietnamese the day he was released, and he wore the ensemble again. As one former POW said, “I was a fighter pilot, but the two most beautiful aircraft I ever saw were the B-52 and the C-141. The B-52s forced the North Vietnamese to negotiate, and the C-141 brought me home.”

Prior to the last takeoff on 6 May, the members of the 445th AW gathered in the hangar. The final flight crew was introduced. Special guests

In a poignant moment, MSgt. Henry Harlow, a maintainer who led the effort to have Hanoi Taxi essentially become a flying museum, put his hand on the crew door after it was shut for the last time and bowed his head. He held it there for a few moments, then ran his hand down the nose of the aircraft and grabbed his paddles to marshal the aircraft out.

The formal retirement came after the aircraft was shut down for the last time. “The C-141 made strategic brigade airlift a reality,” McNabb noted. “It was a magnificent aircraft. ’177 will carry the memories of all who flew on her. Rest well. You have been blocked into history 100 percent mission complete.” A formation of F-16s from the 178th Fighter Wing at the Springfield-Beckley Airport, Ohio, flew the Missing Man formation in honor of the POWs and in honor of all other US military members who didn’t return.

Hanoi Taxi went on public display in the museum’s outdoor airpark in August, a fitting tribute to the most famous example of a legendary airlifter. Thirteen StarLifters are now preserved as static displays at bases where the aircraft were formerly stationed or other aviation museums.

Jeff Rhodes is the associate editor of Code One.
FROM THE COCKPIT:  
THE FINAL FLIGHT 
OF THE C-141  
BY MAJ. STEPHEN A. SCHNELL

Even under normal circumstances, most aircrews are not thrilled with the 0615 brief time. This morning was no different in that respect. What did make this briefing and subsequent flight stimulating was the realization that today, 6 May, we would be a part of history.

On Friday evening, a retirement party was held for 66-0177 and all the other 284 T-tails that served so gallantly for so long. It was a warm goodbye to the StarLifter from more than 1,100 former aircrew members and a couple of hundred others for whom the StarLifter was an important part of their lives. On Saturday morning, though, it was time to make this bird operational for the last time.

The expanded crew of thirteen went through the same standard brief crew members have come to memorize and expect. All aspects of the flight, including CRM, emergencies, and who’s the NCOIC were discussed. One slight addition was simply, “Oh, by the way, the four-star AMC commander and three-star AFRC commander will be on board today.”

Besides this slight blood pressure elevator, the briefing went off normal-normal.

Finding the airfield identifier for a closed runway was a challenge that had base ops and the crew stumped. We decided to enter FFO (Wright-Patterson’s identifier) and sort it out with tower later. Either way, at 0930 we were landing on the 7,000-foot, black asphalt runway that had lots of yellow X’s on it behind the National Museum of the United States Air Force.

A small amount of fanfare greeted the crew as they walked to the aircraft. Nearly 1,000 members of the 445th Airlift Wing, the last group to fly the StarLifter, gave one last salute to the C-141.

Once inside, the crew got down to business. The flight engineers and loadmasters accomplished, as they always have, a thorough preflight. Then we began our avionics preflight in the cockpit. Once strapped into our seats, the aircraft commander, Lt. Col. Steve Johnson, the 89th Airlift Squadron commander, called for the Before Starting Engines checklist.

Reality began to set in at this point: This would be the last time this and each subsequent checklist would ever be read for this airplane. After forty-three years, and countless thousands of engine starts, this was it. With the turn of each yellow page, it became clear that there would never be a need to turn it back. With great pride, I read every step through the Before Taxi checklist, and then closed the book.

Taxi out was unique, with two base fire trucks spraying ’177 so heavily we could barely see the taxiway. Col. Johnson pushed the power up for takeoff and, as always, the four TF33-P-7s howled into action. We were so light (30,000 pounds of fuel and no cargo) that the plane leapt off the ground in just over 2,000 feet. Anyone who has flown the StarLifter knows how agile the plane is when it is light.

Today was no different. We cycled Gen. Duncan McNabb and Lt. Gen. John Bradley in the pilot’s seat and gave the StarLifter a few victory laps over its last official runway. The runway at the museum is only three miles from our home ramp, but it took us about forty-five minutes to get there.

The runway behind the museum is on a heading of 090/270. By regulation, any aircraft using that runway must land to the east (090), regardless of the winds. On this day, the supervisor of flying was calling winds 340 at ten knots, a left quartering tail wind. (Author’s note: This is where the pilot performing the landing begins to build his “why the landing wasn’t perfect” excuse… . )

Because of the winds and the uniqueness of the landing, we flew a planned initial low approach. The approach, which went down to approximately 100 feet, fooled the nearly 2,000 people in attendance and caused at least one TV station to break away from regularly scheduled programming only to see the airplane power up and go around. It felt great to pull up into the closed pattern, with the crowd below, and have a sports car for a jet. Climbing to 1,000 feet above the crowd for a last downwind leg to landing was magnificent. Rolling off the perch, we were committed to the landing.

The aircraft touched down at 0928 on the right main gear (did I mention the squirrelly winds?), but it was a smooth landing. As the left main gear settled, and the thrust reversers and spoilers deployed, a huge cheer erupted on the flight deck. We were down safely, yet again, in a StarLifter.

As I began to return the thrust reversers to the Rev Idle position, I began to think of the tens of thousands of pilots and aircrew before me who had done this very same procedure. The last flight was nearly complete. We taxied close to the crowd and ran the Engine Shutdown checklist. As the pilot reached up and turned the switches to Off, we heard the familiar hum of the engines winding down to silence (and the scanner, no doubt, got to see the last four gallons of JP-8 pour out the PND valve).

We had done it, and it was an honor to do it for so many others who had a role in this plane’s overwhelming success. This aircraft has been a part of so many lives; to experience it shutting down… and then become eerily silent… was sad. The moment was equally filled with great pride. The StarLifter had a new home and a well-deserved place in history.

Maj. Stephen Schnell autographs souvenir posters for Lockheed Martin employees in Marietta, Georgia, after describing the last flight.
Thunder For Lightning

The first series of installed engine runs on the F-35 Lightning II was completed on 18 September, culminating with a full afterburner run of the Pratt & Whitney F135-PW-100 powerplant. The F-35 engine produces 40,000 pounds of thrust, the most thrust ever produced from a jet fighter engine. Nine F135 development engines were run for more than 5,500 hours on test stands prior to the installed test. The F135 was developed from the P&W F119 engine that powers the F-22 Raptor. The engine run milestone kicked off a final series of ground tests in preparation for the F-35 first flight later this year.

Galaxy Lab

A flight deck from a salvaged C-5 transport was transferred—on another C-5—to Robins AFB, Georgia, on 22 August to become a software laboratory. The C-5 flight deck replaces a C-141 cockpit currently used in the laboratory. Once installed, this C-5 flight deck will allow future Galaxy avionics software upgrades to be tested economically on the ground before being tested in flight.

Good Hunting

August was a good month for US Customs and Border Protection P-3 crews as agents directed the interdiction of more than 15,000 pounds of cocaine smuggled on three different sea vessels. On 14 August, a P-3 crew based from Jacksonville, Florida, worked with the crew of a US Navy ship to seize more than 2,000 pounds of cocaine in the eastern Pacific from a specially built vessel known as a go-fast. Orion crews based in Corpus Christi, Texas, worked with the US Coast Guard to intercept nearly 3,100 pounds of cocaine on a fishing vessel 1,040 miles southwest of Puerto Vallarta, Mexico, on 24 August. The Texas-based P-3 then worked with the US Navy to interdict nearly 10,000 pounds of cocaine three days later.

Steadfast Jaguar

Steadfast Jaguar, the first-ever combined force exercise to test the new NATO Response Force, was completed on 28 June on Cape Verde, São Vicente, and Fogo islands off the western coast of Africa. US air components included F-16s from the 52nd Fighter Wing at Spangdahlem AB, Germany, and C-130s from the 86th Airlift Wing at Ramstein AB, Germany. The large-scale exercise concluded with an amphibious and land-assault demonstration. More than 7,000 NATO service members from land, maritime, and air components participated.
Supersonic Dispensing

A series of supersonic payload dispensing tests for the Revolutionary Approach to Time-critical Long Range Strike, or RATTLRS, system was successfully completed in August at Holloman AFB, New Mexico. The sled tests were designed to evaluate innovative dispenser systems that overcome the complex dynamic airflows associated with a supersonic weapon. The RATTLRS' weapon design includes an ejection device that closes airframe cavities after submunitions are dispensed to eliminate disruptive airflows. Closing airframe cavities significantly reduces pitching and increases stability. The sled test program is part of the RATTLRS risk-reduction effort, which should culminate in flight demonstrations in 2007. Lockheed Martin is teamed on RATTLRS with Allison Advanced Development Company.

33rd To Train F-35

The 33rd Fighter Wing at Eglin AFB, Florida, was selected in early August as the schoolhouse for new US Air Force, Navy, Marine Corps, and Allied F-35 Lightning II pilots and maintainers. The wing will include instructors from all three US military services as well as instructors from allied militaries. All three versions of the new fighter will be used in training: F-35A conventional takeoff and landing, F-35B short takeoff/vertical landing, and F-35C carrier variant. The wing will transfer from Air Combat Command to Air Education and Training Command when it assumes the F-35 training mission. The first F-35s are slated to arrive at Eglin by 2010.

Osprey Support

Two KC-130J tankers from Marine Aerial Refueler Transport Squadron 252 (VMGR-252) at MCAS Cherry Point, North Carolina, gave a pair of US Marine Corps MV-22 Osprey tiltrotor aircraft three aerial refuelings 10 July as the Osprey journeyed to the 2006 Farnborough Airshow. It was the Osprey's first transatlantic journey. The two MCAS New River, North Carolina-based MV-22s and the two KC-130J crews flew from Goose Bay, Newfoundland, directly to the United Kingdom. The aerial refuelings marked the first time in more than twenty years KC-130 crews supported a transatlantic deployment.

RAF And Reserve Raptor Pilots

Maj. Randall W. Cason (at left), an F-16 pilot stationed at 10th Air Force headquarters at NAS JRB Fort Worth, Texas, was selected by the US Air Force in May to be the first member of Air Force Reserve Command to fly the F-22 fighter. After completing transition training, Cason, a former F-16 Aggressor squadron pilot, will be assigned to the 43rd Fighter Training Squadron at Tyndall AFB, Florida, where he will serve as an instructor pilot. In July, the first international F-22 exchange pilot, Royal Air Force Flight Lt. Dan Robinson, completed Raptor transition training at Tyndall. He was assigned to the 27th Fighter Squadron at Langley AFB, Virginia. In exchange, an American fighter pilot will be trained on the Eurofighter Typhoon.
Dynamic Taxi Testing

The first C-5M Super Galaxy completed dynamic taxi testing at the US Air Force Flight Test Center at Edwards AFB, California, on 25 August. The main focus of the tests was to identify any structural movement of the engines or pylons when the aircraft travels over a variety of rough surfaces. To conduct the test, the 412th Test Wing at Edwards built four large plywood and metal ramps designed to shake the instrumented aircraft structure at test speeds ranging from thirty to 110 knots. Dynamic testing, which validates the structural design of the new engine and pylon, is also a prerequisite to flutter testing the modified airlifter.

Tenured F-16s

Two F-16 Fighting Falcons assigned to the 421st Expeditionary Fighter Squadron at Balad, Iraq, passed 6,000 flying hours during two recent Operation Iraqi Freedom combat missions. Lt. Col. Mark Cline, commander of the 421st EFS, and Capt. Nick Edwards flew aircraft numbers 88-0471 and 88-0428, as the first Block 40 F-16s achieved this flying milestone in combat. Only one other Block 40 F-16 in the US Air Force inventory has reached the 6,000 flying-hour mark. Both aircraft are assigned to the 388th Fighter Wing at Hill AFB, Utah. Both F-16s supported Operations Desert Storm, Southern Watch, and Iraqi Freedom.

Pacific S-3 Squadrons Stand Down

The last two US Navy West Coast S-3 Viking squadrons, Sea Control Squadrons 33 and 41 (VS-33 and VS-41), stood down at NAS North Island, San Diego, California, in June and July, respectively. The VS-33, known as the world-famous Screwbirds, was commissioned on 1 April 1960 as the first fixed-wing anti-submarine squadron under the Navy’s carrier group concept.

Luke Honors Tuskegee Airmen

More than fifty original Tuskegee Airmen were honored at an airpark dedication ceremony in August in front of the 944th Fighter Wing headquarters building at Luke AFB, Arizona. The airpark, which features a static F-16 painted in World War II Tuskegee colors, is dedicated to the Red Tail warriors of the Tuskegee Airmen. The Tuskegee Airmen overcame segregation and prejudice to become one of the most highly respected fighter groups of World War II.

VS-33 later became the first squadron to fly the S-3A. The VS-41 Shamrocks, as they are known, logged more than 347,000 flight hours, performed more than 48,000 carrier landings, and trained more than 35,000 personnel while serving as the Viking training squadron. VS-41, commissioned 30 June 1960, received its first Viking in 1974. Four S-3 squadrons remain in service.
Puerto Rico Deploys

The 156th Airlift Wing, the Puerto Rico Air National Guard unit based at Luis Muñoz Marín Airport in San Juan, deployed to Bagram AB, Afghanistan, on 8 September to mark the first time the wing, which flies 1962-vintage C-130Es, deployed to a war zone as a unit. So many unit personnel volunteered to deploy to Operation Enduring Freedom that the wing had to restrict the deployment length to one month to give all volunteers a chance to serve. Although the members will rotate out every thirty days, the unit is committed to a 120-day deployment.

Live Launches In Korea

Pilots of the 7th US Air Force in Korea employed live AIM-9 Sidewinder missiles for the first time during training missions on 16 August. The 80th Fighter Squadron at Kunsan AB led the initiative to shoot live rounds as a means of evaluating fighter assets in South Korea. Because of logistics issues and fiscal constraints in US Pacific Air Forces, Republic of Korea-assigned F-16 units do not have the opportunity to deploy back to the US for Combat Archer, the established program for live launches. Every fighter squadron in the 7th Air Force participated in the exercise. A-10 pilots from Osan AB, Korea, dropped illumination flares to provide a lock-on for the missiles.

AMP Maintenance

A new simulator will be installed at Dover AFB, Delaware, to instruct maintainers on the new avionics systems of C-5s upgraded with the Avionics Modernization Program. The new five-station simulator, called Combined Avionics Systems Trainer, or CAST, will provide an improved level of education. For example, an instructor will be able to simulate a broken wire or an inoperative component that could not be simulated on an actual aircraft. CAST combines several avionics procedure trainers. The new simulator supports all AMP and legacy equipment and systems. Air Mobility Command and Air Education and Training Command jointly developed CAST.

RAAF Airdrop

The Royal Australian Air Force conducted its first C-130J airdrop re-supply mission earlier this year in Afghanistan to validate the Assured Re-supply mission concept developed by the RAAF. The concept for Assured Re-supply was developed by 86 Wing staff in response to the challenges created by operating in a broad range of environments. The mission is achieved through the use of container delivery system, or CDS, bundles. The stores are secured in a canvas container with a parachute that is rolled out of the aircraft. CDS is the most commonly used method for aerial insertion of supplies for military operations.
Sentry Aloha
Air National Guard F-16 pilots from the 149th Fighter Wing in San Antonio, Texas, squared off against Guard F-15 pilots from the host 199th Fighter Squadron at Hickam AFB, Hawaii, in September during a two-week exercise called Sentry Aloha. The Sentry Aloha sorties took place more than 100 miles offshore, which allowed for training at supersonic speeds and high altitudes. More than seventy sorties were flown during the exercise. The 149th FW deployed approximately seventy-five pilots and maintainers and six F-16s. Sentry Aloha provides the opportunity for Hawaii Guard F-15 pilots to fly against different types of fighters to meet training requirements.

Names For Planes
The 403rd Wing, the US Air Force Reserve Command wing at Keesler AFB, Mississippi, named two aircraft after area communities in Mississippi to honor them and to thank them for their support. Spirit of Gulfport is a WC-130J Weatherbird aircraft assigned to the 53rd Weather Reconnaissance Squadron, better known as the Hurricane Hunters. Spirit of Biloxi is a stretched fuselage model C-130J Super Hercules aircraft assigned to the 815th Airlift Squadron, also known as the Flying Jennies. The renaming occurred in ceremonies at Keesler in September. Many of the 403rd Wing’s eighteen aircraft will be renamed after other local municipalities.

Traveling Neptune
The Royal Netherlands Navy recently moved a Lockheed SP-2H Neptune on static display at RNLNAS Valkenburg to RNLNAS De Kooy because Valkenburg was closing due to force reduction. RNLNAS De Kooy is the Dutch Navy’s last remaining air station. The Dutch Navy also transferred its last P-3C based at Valkenburg in June to the German Navy. Another part of Valkenburg’s ending its maritime patrol mission was the transition of its last exchange airman to the C-130. SMJR Richard Van Rhijn, a flight engineer, completed his tour of duty with VP-30, a US Navy P-3 squadron at NAS Jacksonville, Florida, on 24 May.

In Memoriam
William C. “Bill” Dietz, who led the proposal and flight test effort for the YF-16, died 31 July in Fort Worth, Texas. He was eighty-seven. Dietz was a nationally recognized aeronautical engineer, contributing to the design of military aircraft and missiles over a career that spanned fifty-three years. After graduating from the Aeronautical University of Chicago, Illinois, he joined Consolidated Aircraft in San Diego, California, in 1940. His initial work was on the PBY Catalina seaplane, followed by increasingly responsible roles on the PB2Y, PB4Y, B-24, B-32, B-36, B-58, F-111, F-16, and F-22 programs. In April 1972, he was promoted to vice president of F-16 Engineering, responsible for directing the engineering effort for the full-scale development and production program.

Neil R. Anderson, long-time F-16 test and demonstration pilot, died 17 September in Fort Worth, Texas. He was seventy-two. Anderson flew more than 250 airplane types in his career and amassed approximately 15,000 hours flight time. He is most remembered for making a belly landing in the YF-16 prototype on 8 May 1975. His engineering and flying career with General Dynamics and later with Lockheed Martin extended from 1967 to 1996. He entered the Marine Corps as a pilot, flying active duty for five years until 1958. He then joined the reserves, eventually retiring in 1974 as a lieutenant colonel. He earned a degree in aeronautical engineering in 1961 from St. Louis University.

Winner’s Tails
Italy claimed its fourth World Cup win in July, defeating France 5-3 on penalty kicks after a 1-1 draw. The 23 Gruppo at Cervia celebrated the win by decorating the tails of their F-16s with four stars and an image of the trophy.

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Pinellas Gets F-35 Canopy Work

Lockheed Martin officials and US Congressman Bill Young of Florida announced 16 August that Lockheed Martin in Pinellas Park, Florida, will assemble the canopy frames for the US Air Force and Navy versions of the F-35. The assembly work will bring new jobs to the region. F-35 production is projected to exceed 4,500 aircraft over the life of the program.

Missing Man For Sonny

The 416th Test Squadron at Edwards AFB, California, flew four F-16s in the missing man formation for the memorial service of Korean War pilot Lt. Alvin “Sonny” Crane in Santa Rosa, California, in late May. Crane was a forward air controller whose AT-6F aircraft was shot down over North Korea more than five decades ago. His remains were discovered by a North Korean search party in 1987 but were not turned over to the United States until 1990. Fifteen years elapsed before Crane’s remains were positively identified.

Brothers, Squadron Commanders

Lt. Col. Tom Anderson assumed command in June of the 714th Training Squadron, a C-130 unit at Little Rock AFB, Arkansas. Tom is the third Anderson sibling on active duty to be promoted to lieutenant colonel. Even more unusual is that all three Andersons are squadron commanders. Tim Anderson, Tom’s twin, heads the 50th Airlift Squadron, another C-130 unit at Little Rock. Older brother Dave is commander of the 6th Services Squadron at MacDill AFB, Florida. Seven other Anderson siblings also served in the military.

250,000-Hour Flight

The fleet of F-117 Nighthawk stealth fighters passed 250,000 lifetime flight hours during a flight at Holloman AFB, New Mexico, on 25 July. Col. John Forsythe, 49th Operations Group commander, is the pilot who reached the milestone mark. The first of sixty-four F-117s (five developmental models and fifty-nine production aircraft) was flown in June 1981.

OK Three Wire

An S-3B Viking assigned to the Maulers of Sea Control Squadron 32 (VS-32) made an arrested landing on the flight deck of the nuclear-powered aircraft carrier USS Enterprise (CVN-65) during recent operations in the Indian Ocean. Enterprise and her embarked Carrier Air Wing One (CVW-1) were under way to a scheduled six-month deployment.

Viper Lance

F-16 pilots from the 52nd Fighter Wing at Spangdahlem AB, Germany, wrapped up a two-week exercise in Romania on 24 August that gave them a rare opportunity to practice low-level flying and to train alongside their NATO partner. The exercise, dubbed Viper Lance, marked the first time US F-16 pilots trained in Romania. Several US pilots were able to fly backseat in a Romanian MiG-21 upgraded with new radar, communications, and weapons systems. Approximately 250 pilots and maintainers from the wing participated in the exercise.

A Visual Thank-You

The Pakistan Air Force dressed up its C-130B on display at the Royal International Air Tattoo at RAF Fairford, England, in July to thank the worldwide community for supplying aid in the wake of the devastating earthquake in 2005. The aircraft featured vivid scenes of earthquake relief painted on the vertical fin, while a banner draped over the fuselage proclaimed: “We are grateful for the global support.”

Seabees On A C-5

Members of Naval Mobile Construction Battalion Four (NMCB-4), the Seabee unit home-ported at Construction Battalion Center at Port Hueneme, California, recently sent a load of construction equipment to Iraq aboard a C-5 Galaxy from Travis AFB, California. The construction equipment will be field-tested in theater.

Sharper Talons

An F-22 Raptor equipped with two AIM-120 radar-guided missiles mounted on external pylons was recently tested at the Air Force Flight Test Center Edwards AFB, California. The Raptor has four underwing hardpoints, each capable of carrying 5,000 pounds. The outer stations are used to carry up to four AIM-120s in a nonstealthy battlefield control scenario. The stations can also be used to carry 600-gallon fuel tanks on ferry missions.

Pakistani Orion

The first refurbished P-3 Orion for the Pakistan Navy was delivered to the government of Pakistan on 31 August. It is the first of two P-3s to be refurbished by a team of maintainers from the US Navy, the Pakistan Navy, Lockheed Martin, and OGMA Aeronautics, an authorized P-3 service center in Lisbon, Portugal.

This space is devoted to announcements and items of general interest. For our non-pilot readers, NOTAM is short for notice to airmen. NOTAMS, briefed before every mission, contain important information that may concern the flight.