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EVENTS

Editor’s Note: The first quarter 2005 issue will be a special photo issue. Events for the period will be published on the online version only. See www.codeonemagazine.com
Maj. Jacek Pszczola recalls aiming high when his company commander asked him and his fellow cadets what they wanted to do after graduating Poland’s air academy in 1990. “I told him I wanted to fly the F-16. He told me I was dreaming—Poland would never fly the F-16.” But dreams do come true—Poland will fly the F-16. And Pszczola, now an instructor pilot in the Polish Air Force, is slated to be one of the first pilots to fly the F-16 operationally. By the end of the decade, he and his fellow pilots of the 10th Tactical Air Squadron at Lask Air Base will convert from the TS-11 Iskra trainer/light attack aircraft to the F-16. In September, these Polish pilots got a taste of their dream when pilots and maintainers from a Texas Air National Guard unit brought F-16s to Lask.
Introducing The F-16

“The Texas Guard’s visit is part of a thirty-plus event program for Poland,” explains Maj. Mike Mitchell, the project officer for the deployment. “We are here to demonstrate how we operate and maintain F-16s so that the Polish Air Force will have a better understanding of the capabilities and training required to begin to operate the aircraft themselves.”

The F-16s sent to Poland came from the 149th Fighter Wing at Lackland AFB in San Antonio as part of the National Guard’s State Partnership Program. Poland’s designated state partner is actually Illinois. But with the F-16 Air Guard unit at Springfield, Illinois, committed to an Air Expeditionary Force rotation to Iraq this year, the Texas unit covered the deployment. The Springfield unit is scheduled to come to Poland in 2005. The deployment was funded by the US-European Command Joint Contact Team Program as part of Operation Sentry White Falcon.

“We are introducing the F-16 to those who will be working with it in the Polish Air Force,” says Lt. Col. Kerry Holloman, squadron commander for the 182nd Fighter Squadron, the flying unit of the 149th FW. “A large part of our deployment purpose is with the Polish maintainers out there on the ramp, showing them how to care for and feed the F-16 and how to bed it down. Essentially, we’re showing the maintainers how we
deploy the airplane. And we’re showing the pilots how we plan, brief, and reconstruct fights.”

“We hit the ground, and the Polish Air Force was ready to go,” says Col. John Presley, the operations group commander of the 149th. “The day after we arrived, they briefed us on all their aircraft and operations, and we briefed them on the F-16. That night, we had a party and initiated a lot of new friendships.”

The 149th sent approximately 100 members, fourteen of which were pilots. With the 149th a training unit, all the pilots were highly experienced instructors who averaged 2,000 flying hours in the F-16. Poland’s 1st Tactical Air Squadron at Minsk sent four MiG-29 Fulcrums to Lask for the event, and the 7th Tactical Air Squadron sent Su-22 Fitters from Powidz AB. The first week started with one-versus-one basic fighter maneuvers, followed by tactical intercepts and strike missions. The second week included basic mixed force employment with two fighters facing off against two defenders and four strikers—a mix of F-16s, Su-22s, and MiG-29s.

Two missions were typically flown each day, one in the morning and one in the afternoon. MiG-29 and Su-22 pilots provided backseat rides to the American pilots. The Guard pilots doled out as many incentive rides as they could during the two weeks as well, flying three sorties per day during the last week. Most of the backseat rides went to pilots of the 10th Tactical Air Squadron, scheduled to convert to the F-16 beginning in 2008.

**Dreams Fulfilled**

Pszczola waited fourteen years for his dream to come true. In the meantime, he flew MiG-21s with the 10th Squadron until they were decommissioned from the Polish Air Force in 2002. After that, he flew the Iskra (Polish for star). Then the long-awaited dream ride in the F-16. “It was an amazing experience,” he says. “I flew backseat on an air-to-ground mission in which we escorted two Su-22 Fitters on a low-level mission. Fortunate for me, the Fitters returned to base with radio problems so we engaged another F-16 in basic fighter maneuvers. That was the first time I experienced two aircraft in such a close-in engagement. When I flew the MiG-21, the distances in aerial engagements were always much greater.

“The F-16’s performance exceeded my expectations,” continues Pszczola. “The view from the cockpit is excellent from every position or angle in the dogfight. All controls in the F-16 are at our fingertips, so we pilots can keep our eyes on the opposing jet. In the MiG-21, we always had to look in the cockpit at the various displays on the instrument panel. By comparison, the F-16 seems very easy to fly. We can concentrate on the airplane’s advanced capabilities.”
I have been extremely impressed with the squadron commanders,” notes Presley. “They know what needs to be done to transition to the F-16, and they are not afraid to do it. The F-16 will allow their leadership to expect more from their pilots. I think the future of the Polish Air Force is very promising.”

“This is the first time that F-16s have been to Lask,” Molinowski adds. “My young pilots are getting their first opportunity to take part in such an exercise. They get to observe how US pilots prepare for and brief missions. This is their first opportunity to speak English in radio transmissions. The pilots are eager to fly in an F-16. Actually seeing, touching, and, in some cases, flying in an F-16 here at Lask will motivate them even more. I am confident that our pilots will succeed.”

Eric Hehs is the editor of Code One.
Lask Air Base, located southwest of Warsaw near Lodz, opened its gates to the public for its first-ever air show on the last weekend of the Texas Air National Guard deployment. Tens of thousands of Poles clogged the small roads leading to the base to get a glimpse of their country’s past, present, and future fighter aircraft.

A Catholic Mass preceded speeches by Polish officials in front of one of the MiG-21s formerly flown by the 10th Tactical Air Squadron. The operations group commander of the 149th, Col. John Presley, introduced by his call sign “Elvis,” thanked Poland for the warm reception and praised the professionalism and capabilities of the Polish Air Force. He and other members of the 149th signed posters and responded to questions about their F-16s. Their answers were translated to the crowds and television crews by Polish military leaders. Polish pilots and maintainers posed for photos with their families in front of the F-16s from Texas.

Men and women dressed in traditional Polish attire circulated through the crowds. Local beauty queens were introduced to the 182nd’s traveling mascot—a stuffed armadillo named J. Dillo. Poles who could not make the show got to see coverage on national news stations that night and in newspapers the next day.

PHOTOS BY LANS STOUT
“Combat search and rescue units prefer to sit on the ground during a war,” says CMSgt. Don Cannet, an HC-130 airborne communications and electronics specialist with the 106th Rescue Wing, the Air National Guard unit based at Francis S. Gabreski Airport on Long Island, New York. “If we have to take off, something bad has happened.”

BRING THEM BACK ALIVE

BY JEFF RHODES

PHOTOS BY JOHN ROSSINO
The rescue of allied pilots or crew behind enemy lines is a highly dynamic mission involving three main sets of players. The pararescue jumpers, or PJs, are the boots on the ground—or the scuba fins in the water—who find and recover those in trouble. The HH-60 Pave Hawk helicopter crews, who sometimes have to fight their way in and out of a landing zone, pick up the PJs and the survivors. The primary mission of the third element, the HC-130 crew, is to extend the range of the rescue helicopters. “We need to ingress fast, rendezvous, and egress fast,” says Lt. Col. Kevin Reilly, the 102nd Rescue Squadron commander. “Everybody has to move quickly. Time is critical.”

“We always train for a mission as though it will be performed in the worst possible conditions, including in inclement weather and in dangerous terrain or at high sea states, even for civilian rescues,” notes Lt. Col. James Kelley, an instructor navigator with the 102nd RQS. “And then we carry out the mission.” Usually just hours after receiving the news about a downed aircraft, a combat rescue mission is fully planned and underway—covertly, with crews on night vision goggles and with communications blacked out.

KEEPING THE WHEELS ON

“Combat search and rescue is fast and complex,” notes Reilly. “Every crew position functions at a full head of steam. The radio traffic is intense as we coordinate with the helicopters and combat aircraft flying top cover.”

During the Vietnam War, the HC-130 crews usually assumed the role of airborne mission commander, or AMC, during a rescue directing the Jolly Green Giants, as the HH-3 rescue helicopters were called, and the Sandys, usually A-1 Skyraiders, that were used to fly top cover. Today, the crew onboard the E-3 Airborne Warning and Control System aircraft usually serves as the AMC, with the HH-60 crews proudly bringing the Jolly Green Giant nickname forward. Pilots in A-10s or F-16s fly cover.

“The AMC for a rescue without an AWACS is whoever has the greatest endurance and the greatest number of radios,” observes Reilly. “And that would be us.”

The HC-130s have used the radio call sign “King” for decades and the CSAR community has adopted it as a nickname for the rescue tankers. The HC-130s have two HF, two UHF, two VHF, marine band, and SATCOM radios.

“The navigators plan the mission,” says Kelley. “We have determined how much fuel will be needed by looking at the objective and working backwards to find the points where the helos will need to gas up. En route, we make sure we are on time with the fuel. We also work the defensive systems—chaff and flares. We react to whatever threats are in the area.”

Typically, helicopter crews refuel before reaching the downed crew and then again after egressing the area. The Jollys need to be fully fueled going in, as the situation on the ground can change drastically in minutes.

“The HC-130 is a big target,” concedes Reilly. “Ideally, our missions take place over permissive territory for pre-mission and post-egress tanking. But, we’re always prepared to penetrate enemy territory to accomplish our mission. Without the tankers, the wheels fall off everything.” For most rescues, HC-130 crews take off first and race ahead of the slower helicopters to be on station once the action starts.

“We have the most honorable profession in the military. Everybody has a role in a CSAR mission. We bring help to people desperately needing it and then we bring them back alive.”
“People accuse pararescue jumpers of always getting new toys. They don’t call the Zodiac a toy when it comes and rescues them, though. Then it’s a tool.”

TOOLS, NOT TOYS

“We have the most honorable profession in the military,” says SSgt. Dennis Byrne, a 101st RQS flight engineer. “Everybody has a role in a CSAR mission. We bring help to people desperately needing it and then we bring them back alive.”

The entire US Air Force has only about 300 PJs, counting those in the Air National Guard and Air Force Reserve Command. They are the Air Force equivalent to Navy SEALs or Army Special Forces soldiers.

“Qualifying as a PJ requires two or three years of unnatural pain,” says 2nd Lt. Christopher Baker, a combat rescue officer with the 103rd RQS. “A lot of people wash out during the ten-week basic course. Once candidates graduate, they go to Army scuba school, survival training, static and free-fall parachute jump training, paramedic school, and then to PJ University. To earn the PJ’s maroon beret, we have to be able to do it all.”

And PJs have the tools to do it all. From heart defibrillators, to weapons, infrared beacons, rappelling gloves, scuba suits, communications gear, a CamelBak hands-free water carrier, a hand-held global positioning system receiver, and even more specialized equipment that allows friendly forces to identify them from the air, PJs carry whatever is needed for the task.

“How much a PJ carries depends on the mission,” says CMSgt. Rob Marks, “but we usually carry a lot. Our loads can range from a small medical kit to 150 pounds of equipment.”

One of the more unusual loads PJs can put on HC-130s is a Rigging Alternate Method Zodiac, or RAMZ (pronounced rams), that looks like a big cube strapped down to the cargo ramp with chemical lightsticks attached to its parachute rigging.

“The RAMZ package includes a scuba tank that inflates the Zodiac, a fourteen-foot inflatable boat,” explains Marks. “The Zodiac goes out of the HC-130 at 2,500 feet and the PJs jump right behind it. Once their canopies open, the PJs steer to the boat that has landed and is floating on the surface, ready for action.” This Zodiac features a SATCOM link and a Johnson outboard motor that can be immersed in water.

“People accuse PJs of always getting new toys,” offers Marks. “They don’t call the Zodiac a toy when it comes and rescues them, though. Then it’s a tool.”

THE RESCUE BEGINS

The 106th RQW flies three 1960s era HC-130Ps and two late-1980s HC-130Ns. Both variants have been refitted with NVG-compatible cockpits, but neither has the distinctive large dorsal hump common to rescue C-130s that once housed the AN/ARD-17 Cook Aerial Tracker. The tracker has been replaced by the much smaller ARS-6(V) personnel locator system that provides direction and distance to the downed pilot. Every pilot and crewmember carries a radio and hand-held global positioning system receiver in their survival vests when they take off on a mission. Once activated, the tracker and radio
work together to provide an exact location for the King crew to look on the ground or in the water.

In the HC-130, two loadmasters normally sit next to the thirty-six inch wide windows on each side of the aircraft and act as scanners during training. Their workload increases quite a bit during an actual rescue, so additional crewmembers are brought on to be dedicated scanners to help look for downed airmen in the water during a surface search. The scanners are equipped with binoculars or night vision goggles, depending on conditions. To stay sharp, the scanners work in thirty-minute shifts and then take a break.

Racks of survival equipment line the right side of the HC-130 cargo hold, going up and over the 1,800-gallon fuel tank attached to the floor, leaving the loadmasters with only a small work area.

After a low-level flight to avoid detection, the HC-130 crew arrives on scene and begins looking for the downed crew. Once the downed airmen are found, the HC-130 navigator notes their position. As the HC-130 pilot circles, the loadmaster opens the ramp and readies a smoke marker. At the pilot’s signal, the loadmaster releases the marker, which ignites and descends by parachute. With a second pass, the loadmaster puts a marker on the other side of the downed crew.

“This job is a little different than on other aircraft,” says SrA Dan Manzella, a 102nd RQS loadmaster. “It requires some special training. We have to know how to use pyrotechnics, launch free-fall rescue bundles, spot survivors, and help coordinate aerial refueling formup. The PJs check their own equipment, though. They’re pretty independent.”

“Crew coordination comes from practice,” says Capt. Kevin Costello, another 102nd RQS navigator. “The pilots have to be able to concentrate. We deploy with dedicated crews to improve crew resource management. Dedicated crews know the strengths and weaknesses of other crew members from flying together everyday. However, in peacetime, we can’t set up dedicated crews. Being in the National Guard means our civilian jobs don’t always make us available at the same time. We compensate for not working together as a dedicated crew by practicing a lot and by using our combined wealth of experience.”

The HC-130 navigator uses the radar and the forward-looking infrared/TV system to find the HH-60s. The FLIR image can be seen at the navigator’s station and on a smaller screen on the pilot’s side of the instrument panel.

The aerial refueling begins with the HC-130 crew making a low-altitude, high-speed rendezvous. The King crew slows down, approaches the helicopters from behind, and overtakes them. The HC-130 flight engineer reels out the refueling hoses from the underwing pods. The FLIR, which has a 360-degree field of view, also confirms the eighty-foot hose is out and the one hundred-pound drogue, or basket, has reefed out to its full three-foot diameter.

**INGRESS AND EGRESS**

Meanwhile the pilot in the HH-60, who sits in the right seat, extends the helicopter’s refueling probe, also on the right side of the aircraft. The twelve-foot extension allows the probe to clear the rotor diameter. Pave Hawk crews always rendezvous on the left side of the HC-130, allowing the pilots from each aircraft to make visual contact. The left pod is better to refuel from because the HH-60 is out of the HC-130’s exhaust and is clear of the wing. When refueling from the right pod, the helicopter is in the HC-130’s exhaust and inside the pod, bringing it four feet closer to the HC-130 fuselage.

When going to the right drogue, the Pave Hawk crew flies over the top of the HC-130 rudder mainly to avoid turbulence. Low-voltage formation lights (also known as slime lights) on the upper surfaces of the HC-130 stabilizers further remind the helicopter pilots of the size of the HC-130, especially if they are wearing NVGs.
Prior to the aerial refueling, all moving equipment on the helicopter, such as its FLIR, is secured as a precaution. The helicopter then slides up to the pre-contact position about two feet behind the basket. Loadmasters on the HC-130 call the flight deck crew when the helicopters move to the right basket and are ready to refuel.

When the HH-60 pilot lines up the refueling boom with the drogue, makes contact, and pushes the basket forward several feet, fuel begins flowing. The helicopter immediately rises above the HC-130’s wing with the hose and drogue attached to the boom to get into clear air. In a matter of seconds, several hundred pounds of fuel transfer.

After refueling, the Pave Hawk crews ingress the area at low altitude. CSAR missions normally involve at least two helicopters, both armed. The Air Force’s HH-60 fleet has provisions for either 7.62mm miniguns or .50-caliber machine guns. Once over the downed crew, the flight engineer counts down the altitude and calls the hover. For a sea rescue, the door is opened and the winch, with its 600-pound capacity, is lowered. Each survivor is pulled up separately, sometimes in a horsecollar and sometimes in a litter, with a PJ providing support when necessary. Any remaining PJs are pulled up separately.

When PJs do not parachute with their boats, the HH-60 pilot descends to wavetop height and the two PJs jump in. In this instance, the downed airmen use a rope ladder to scramble into the helicopter followed by the two PJs. The ladder is unhooked and dropped in the water instead of taking precious seconds to retrieve it, especially in hostile fire.

Depending on terrain, PJs wearing coveralls and other protective gear can use a fastrope, a special rope designed to work similar to a fire-pole so they can slide to the ground. Like the rope ladder, the fastrope is also discarded.

The operation goes like clockwork. Within minutes, survivors are on board, helicopters clear the area, and head back to the tanker.

OVER LONG ISLAND

There are six rescue wings in the Air Force that now all come under the purview of Special Operations Command: three active duty, one Air Force Reserve Command, and two Air National Guard units, one of which is the 106th RQW.

The 106th has better conditions to practice than most units. “We are in a prime location for training,” says Maj. Andrew Wineberger, an HH-60 copilot with the 101st RQS. “We have water and sand three miles from our runway. The Vermont mountains are an hour’s flight away. Plus, we have restricted airspace the length of Long Island that’s right off the shore.”

The National Search and Rescue Plan divides the duties of all the

“We have Guardsmen doing this mission 120 to 150 days a year. We are a high-demand, low-density asset. That isn’t going to change.”
entities involved in search and rescue. The Air Force has jurisdiction inside the continental United States. The Coast Guard has jurisdiction from the coast to 200 miles out at sea. “We work closely with the Coast Guard,” notes Reilly. “However, some missions exceed the capabilities of the Coast Guard, and that’s where we come in.

“The Coast Guard helos can’t refuel,” Reilly continues. “For civilian rescues, the Coast Guard searches with its version of the HC-130 and drops rafts. We can bring our helos way out with one of our Kings. We can drop PJs and their boats. The Coast Guard executes its mission far more frequently than we do. But, we can drop personnel into the water 1,000 miles from the coast. We are truly the last available lifeline.”

One of the missions the 106th RQW is responsible for is Space Shuttle launch support. Gabreski ANGS, with its 9,000-foot runway, is an alternate landing site for the shuttle. A wing-specific mission is mid-ocean astronaut rescue.

The unit’s location meant it was a first responder during the TWA Flight 800 explosion in 1996, the John F. Kennedy, Jr., search operation in 1999, and the World Trade Center attacks in 2001.

One rescue the 106th participated in pointed out a serious range shortcoming of the Pave Hawk. In 1991, a 101st RQS HH-60 crew was returning to base after attempting to rescue a solo sailor 250 miles southeast of Long Island and had to ditch during what was later chronicled in the book, The Perfect Storm. Despite repeated attempts to hit the drogue in the worst possible weather, the Pave Hawk crew could not hook up and ran out of fuel. All of the Air Force’s HH-60s now carry a 670-gallon fuel bladder to extend range. But the bladder cuts into available space in the helicopter for PJs, their equipment, and, of course, the survivors.

The Air Force will soon kick off an HH-60 replacement program, however. The service also recently awarded contracts for converting existing EC-130s and WC-130s to HC-130s, as demand for tankers is always high, particularly for refueling helicopters.

“We put more than 1,200 hours on our six HH-60s and 1,460 hours on our five HC-130s last year,” notes Col. Rob Landsiedel, the wing’s maintenance group commander. “We have surpassed 1,600 hours on the Kings in some years. We have Guardsmen doing this mission 120 to 150 days a year. We are a high-demand, low-density asset. That isn’t going to change.”

Jeff Rhodes is the associate editor of Code One.
Building A New Database For F-16 Capability

COMBAT HAMMER

Article And Photos By Eric Hehs
Capt. Tom Seymour, an F-16 pilot from the 55th Fighter Squadron at Shaw AFB, South Carolina, provides immediate commentary: “If that were a live bomb,” he says, “the APC would be out of commission.” What the audience witnessed was a 500-pound bomb, filled with cement instead of explosives, homing in on a laser spot generated from a targeting pod mounted to one of the 55th's Block 50 F-16s. “We started flying with targeting pods about three weeks ago,” adds Seymour. “The pilots dropping laser-guided bombs today have never dropped an LGB before.”

Defining The Hammer

Such first-time experiences are part and parcel for Combat Hammer, the US Air Force's formal program for evaluating the operational effectiveness of precision guided munitions. These highly scrutinized bomb dropping and missile firing sessions, also known as air-to-ground Weapon System Evaluation Program, or WSEP, are conducted at two locations: the Utah Test and Training Range near Hill AFB and the range complex surrounding Eglin AFB, Florida.

Responsibility for Combat Hammer falls under the 86th Fighter Weapons Squadron at Eglin. “We provide a cradle-to-grave assessment of all of the precision guided weapons in the Air Force,” explains Lt. Col. Dave Lujan, director of operations for the 86th. “We assess the effectiveness and suitability of these weapons through realistic and tactical scenarios—from the time the bomb is built through the moment it impacts.”

The Air Force conducts five WSEP sessions every year, three in Utah and two in Florida. Each session lasts two or three weeks, with units rotating in one week at a time. The duration for each unit will be expanded in 2005 to two weeks, which is the same amount of time now allotted for Combat Archer, Combat Hammer's air-to-air equivalent. Participating units usually send eight aircraft and about twice as many pilots. “We try to make sure units who have not been here in the last three years get invited,” explains Lujan, who is in charge of selecting candidates.
This WSEP is scheduled for two weeks with five units. Pilots flying Block 50 F-16s from Shaw and F-15E crews from Lakenheath AB, England, come the first week. RQ-1A Predators from Indian Springs Auxiliary Field in Nevada come the second week, the first time for these unmanned aerial vehicles at Combat Hammer. They will be joined by A-10 pilots from the Fighter Weapons School at Nellis AFB, Nevada, and F-15E crews from Mountain Home AFB, Idaho.

Keeping track of weapon performance can stress the smartest statistician, given the variety and complexity of precision weapons and the airframes that drop and fire them. The Air Force has more than fifty possible weapon/airframe combinations. The airframe side of the roster includes the A-10, B-1, B-2, B-52, F-15E, F-117, three versions of the F-16, and the RQ-1A. And weapons consist of the AGM-65 Maverick Missile; AGM-86 Air-Launched Cruise Missile; AGM-88 High Speed Antiradiation Missile, or HARM; AGM-114 Hellfire missile (fired from the Predator); AGM-130 (a rocket-powered version of the GBU-15); AGM-154A Joint Standoff Weapon; AGM-158 Joint Air-to-Surface Standoff Missile; CBU-103 and -105 cluster munitions; GBU-10, -12, -24, and -28 laser-guided bombs; GBU-31 and -38 GPS-guided Joint Direct Attack Munitions (2,000 and 500 pounds, respectively); and the EGBU-15, which can be guided by laser designation or GPS.

Those involved with WSEP don’t attempt to evaluate all fifty-plus possible weapon/airframe combinations every year; however, they do assess overall weapon performance and provide statistically significant findings to commanders at the highest levels of the Defense Department. The choice of weapons and weapon platforms for a given combat situation is directly influenced by the results measured and tabulated at Combat Hammer. While not every airframe can carry every type of weapon, some airframes do carry a greater variety than others. The F-16 can claim about twenty-nine of those possible combinations. The F-16 Block 50/52 alone accounts for twelve (the most of any single aircraft in USAF inventory). “Current versions of the Block 50/52 F-16 can employ an incredible array of air-to-ground weapons,” notes Lujan. “The Block 50/52 is best known for carrying the AGM-88 HARM. More recently it has employed GPS-guided weapons, such as the JDAM and CBU-103 and -105. With the latest upgrades, the Block 50 and 52 can now employ laser-guided munitions, including the GBU-12, -31, and -38, as well as the JSOW and JASSM.”

Shaw’s 55th FS participation in Combat Hammer marked the first time that several of these weapons as well as some targeting systems were used on an F-16 in an operational evaluation. Some of these firsts included using targeting pods to direct LGBs against moving targets (a first for a Block 50 squadron), employing the AGM-154 JSOW, delivering the CBU-105 sensor-fuzed weapon from the new BRU-57 bomb rack, and using the Joint Helmet-Mounted Cueing System in an operational evaluation.

“Improvements on the F-16 are software-driven,” explains Lujan.
Pilots can discriminate threats, friendly forces, and unknowns at a glance. The interrogator/transponder also improves the pilot’s situational awareness, especially when employing beyond visual range missiles, namely the AIM-120 AMRAAM. The targeting pod adds a precision strike capability to Block 50/52 F-16s. The BRU-57 allows the F-16 to carry four (instead of two) inertially aided munitions, including the JDAM, JSOW (Joint Standoff Weapon), and WCMD (Wind-Corrected Munitions Dispenser).

The upgrades radically alter the character of the Block 50/52 F-16, which usually operates as a HARM shooter in the suppression of enemy air defense mission, called SEAD. USAF Block 50/52 F-16s could not carry targeting pods before CCIP. Targeting pods—normally associated with Block 40/42 and, more recently, with Block 30 F-16s—transform USAF Block 50/52 F-16s’ SEAD capability into a destruction of enemy air defense capability. Soon, all Block 50/52 pilots will be able to locate radar-guided surface-to-air missile sites with their HARM Targeting System, suppress the site with a HARM shot, target the site with the targeting pod, and then use the targeting pod to direct a laser-guided bomb to destroy the site. The targeting pods also improve the flexibility of because we drop CBU-103 and JDAM all the time. Even though we get several of those munitions periodically at home, we focused on them more for about a month before coming here. We had Mavericks delivered to Shaw before we came here, for example. We even requested a representative from Raytheon brief us on the Maverick.”

Pilots from the 55th made the most of their deployment by loading their jets with inert JDAMs at Shaw and dropping the bombs at a range near Nellis AFB on their way to Hill. The deployment was supported by two KC-10s from the 60th Air Mobility Wing at Travis AFB, California.

“We loaded the tankers with our gear and our people, and everything and everyone took off cross-country to Hill,” says Seymour. “The plan worked like a champ.”

Weeks before the group deployed, Shaw sent six technicians to Hill to assemble the bombs. “We built

“Most of what we learn here gets pushed into our actual employment planning. We get to see how our decisions affect what actually happens in a target area.”

**Preparation And Execution**

Personnel from Shaw began preparing for Combat Hammer about a month before trekking to Hill. “The commander chose ten pilots he wanted to spin up on the targeting pod,” explains Lt. Col. Scott Manning, director of operations for the 55th FS. “Before coming to Utah, they flew training missions with the pods at Shaw to prepare to drop real laser-guided bombs here in Utah. We didn’t have to train on GPS-guided weapons because we drop CBU-103 and JDAM all the time. Even though we get several of those munitions periodically at home, we focused on them more for about a month before coming here. We had Mavericks delivered to Shaw before we came here, for example. We even requested a representative from Raytheon brief us on the Maverick.”

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GPS-guided munitions, such as JDAM and WCMD.

CCIP also includes an advanced datalink capability called Link-16, a helmet-mounted cueing system, and an electronic horizontal situation indicator. Link-16 improves situational awareness by allowing the F-16 to exchange data with other air and ground assets. Link-16—a jam-resistant, secure, high-capacity communication system—has been designated by the Department of Defense as its primary tactical datalink and will be common across many military platforms.

The helmet-mounted cueing system directs weapons and sensors to the pilot’s line of sight. The system can be used to mark aerial targets for off-boresight missiles, like the AIM-9X, or to locate and identify ground targets visually from transmitted or stored GPS/inertial coordinates. The electronic horizontal situation indicator replaces the current electromechanical HSI. The electronic display, which is more reliable, offers more operating modes. It is also compatible with night vision goggles.

The Sniper XR (XR for extended range) pod is built by Lockheed Martin in Orlando, Florida. The pod, with its faceted nose, incorporates a third-generation targeting FLIR that allows pilots to identify tactical targets at greatly improved standoff ranges over current targeting systems. The modular, two-level maintenance design simplifies upkeep and lowers operating costs.

“I was impressed with the air-to-ground threat,” says Capt. Travis Peterson from Shaw. “Range personnel fired rockets called Smoky SAMs to simulate surface-to-air missile shots. Those rockets leave a telltale corkscrew that we had to defend against while lasing a bomb into a target. They also have threat radar emitters out there to distract us. The Utah Test and Training Range itself is great. It’s huge with a lot of geographical features, and we don’t have to burn a lot of gas to get there. And, most importantly, we can drop live weapons.”

“Most of what we learn here gets pushed into our plans for employing these weapons,” says Maj. Ian Phillips, who dropped a CBU-105 from a BRU-57 rack (one of the firsts for Shaw). “We get to see how our decisions affect what actually happens in a target area. The CBU-105, for
example, is affected by surface winds because the bomblets float down on small parachutes. So we need to factor in the strength and the direction of the prevailing winds before we drop. We have to balance a number of such factors to optimize the performance of every weapon. We would rather discover these effects at a WSEP than in combat.”

Just experiencing the sensations of a weapon coming off the airplane can be important. “A HARM shot and a Maverick shot are the two most sensational experiences an F-16 pilot can savor at a Combat Hammer,” Phillips continues. “They feel like a freight train leaving the airplane. We see smoke, fire, and a big missile shooting out in front of us. It’s impressive. We would rather experience those sensations for the first time in a training environment rather than in actual combat. The experience and the data collected here allow us to make smarter decisions.”

Eric Hehs is the editor of Code One.

MSgt. William Teneyek was in charge of the technicians sent from Shaw to assemble bombs.
The last two C-141 StarLifters assigned to the 305th Air Mobility Wing at McGuire AFB, New Jersey, were retired in ceremonies 16 September, closing the aircraft’s thirty-nine-year career with the active duty US Air Force. The C-141, the world’s first jet transport, served as the backbone of strategic airlift for the Air Force since entering service.

The StarLifter began its operational career in August 1965 with missions to Vietnam. It could carry either 138 troops or approximately 62,000 pounds of cargo. And it cut the travel time from Travis AFB, California, to Tan Son Nhut AB, South Vietnam, in half compared with its predecessor, the piston-powered C-124. On return trips, the C-141A could carry up to eighty litters plus attendants on medevac flights. Some 6,000 medevac flights were flown on StarLifters from 1965 until 1972.

The Air Force, recognizing the C-141 often filled up well before reaching max cargo capacity, increased usable volume almost seventy-five percent in 270 C-141 aircraft by adding two plugs in the fuselage. The first modified aircraft, designated C-141B, was flown in 1977. It could carry 200 troops, 155 paratroops, 103 litters and fourteen attendants, or 68,725 pounds of total cargo.
StarLifters were recently used to fly suspected terrorists to the detainment facility at Guantanamo Bay, Cuba, and have borne the brunt of aeromedical evacuation flights from the Middle East, and later Iraq, since Operation Iraqi Freedom began in 2003.

More than thirty squadrons with ten active duty Air Force, Air National Guard, and Air Force Reserve Command units flew the aircraft. The C-141 fleet has accumulated more than 10.6 million flight hours.

First flight of the first C-141A occurred at Lockheed Georgia Company in Marietta on 17 December 1963—the sixtieth anniversary of the Wright Brothers’ first powered flight. The first C-141A for McGuire AFB, nicknamed Garden State Airlifter, was delivered 8 August 1967. That aircraft, now a C-141B, will remain at the base as a static display. Before ceasing operations at McGuire, the StarLifters were flown by active duty crews from the 6th Airlift Squadron and Air Force Reserve Command crews from the 514th AMW, the Reserve Associate unit. Both will convert to the C-17 airlifter.

The C-141 will remain active at two Air Force Reserve Command units, the 452nd AMW at March ARB, California, and the 445th Airlift Wing at Wright-Patterson AFB, Ohio, until summer 2006. Of the total 285 StarLifters built between 1963 and 1968, twenty aircraft remain in service.

Jeff Rhodes is the associate editor of Code One.
Practical Aircrew Apparel Has Come A Long Way

Orville Wright wore a suit and tie and a white shirt with starched collar when he made man's first powered flight in 1903. Capt. Frank Luke, famed World War I ace of the 27th Aero Squadron, wore a leather coat and helmet over his service dress uniform when he went hunting German observation balloons. The dashing white silk scarf completed the uniform, but it wasn't just for show—it was for wiping oil spatter off his goggles.

During World War II, as aircraft were able to reach much higher altitudes, B-24 waist gunners wore leather coats, pants, and boots that were heated electrically and lined with sheepskin to withstand the intense cold while shooting .50-caliber machine guns at incoming Me-109s, FW-190s, and Zeros.

As jet fighters became more sophisticated through the 1950s and 1960s, pilots added “speed jeans,” chaps filled with rubber bladders that inflated to force oxygenated blood from the legs to the heart, brain, and eyes to keep from blacking out during high-g maneuvering. The L-1 Straining Maneuver, also known as grunting, provided pilots with additional seconds before the onset of g-induced loss of consciousness, or G-LOC.

Unfortunately, human physiology has not progressed markedly in 100 years. Even though the F/A-22 is designed to withstand nine times the force of gravity during maneuvering, Raptor pilots are still the same basic Mk. 1 human, able to withstand only about seven g’s before the onset of G-LOC. Consequently, Raptor pilots have their own ensemble, which is both practical and comfortable and ensures they can stay in the fight.

Col. Tim Merrell, operations group commander at the F/A-22 training unit, the 325th Fighter Wing at Tyndall AFB, Florida, models what the well-dressed Raptor pilot is wearing these days.

Combat Edge

Arriving at the jet—in this case, Raptor 26, a brand-new aircraft Merrell ferried from Lockheed Martin in Marietta, Georgia, to Tyndall in early October—the pilot is wearing the standard CWU-27/P flight suit, or what pilots refer to as the “green bag” and FWU-8/P flyer boots. His GS/FRP-2 gloves are in his pocket. The suit, gloves, and optional CWU-36/P flight jacket are made of a flame-resistant fabric that dissipates static and repels chemicals.

Over his standard flight suit, Merrell first dons the CSU-17/P Combined Advanced Technology Enhanced Design G-Ensemble, or Combat Edge, a vest developed by the Air Force Human Systems Program Office at Brooks AFB, Texas, in the late 1980s to counter the effects of high-g maneuvering on pilots and crew. An air hose on the right breast of the vest connects to the aircraft on the left side of the cockpit.

The components of Combat Edge—oxygen mask, mask tensioning bladder in the helmet, counter-pressure vest, oxygen regulator,
g-valve, integrated terminal block, and pressure sensor line—act in unison to sense and respond to high-g conditions. To pilots, that means Combat Edge keeps pressure in the chest cavity to help the heart pump blood to the eyes and brain while inhibiting the downward flow of blood inherent to these maneuvers. While Combat Edge doesn’t replace the straining maneuver of tensing the upper body muscles and abdomen, it significantly reduces the effort required to execute it. At the same time, it increases g-endurance and reduces fatigue.

**ATAGS**

Next Merrell dons the CSU-23/P Advanced Technology Anti-G Suit, or ATAGS. Like the Combat Edge vest, ATAGS (currently only worn by F/A-22 pilots) provides increased protection from the effects of prolonged high-g environments. As a stand-alone garment, ATAGS provides a sixty percent increase in aircrew endurance. Combined with Combat Edge, it increases aircrew endurance by 350 percent over the current g-suit.

“ATAGS completely envelopes the legs and rear end, which is different from other g-suits,” notes Merrell. “It takes a little getting used to when we first put it on. It rides lower on the torso so that, when we’re pulling g’s, it doesn’t push against the chest. It is very effective.”

The ATAGS air hose connection to the aircraft is on the right side of the cockpit, while the g-suit connection is on the left side of the cockpit in other fighter aircraft. Three small clamps bring the front and rear halves of the suit together around the legs; the two halves are then zipped together. A snap at the bottom of each leg further secures the two halves. Zippers on the torso section allow the suit to expand for a more comfortable fit. ATAGS also features external pockets because pilots are not able to reach the pockets on the flight suit after they don this new g-suit.

**Harness And Helmet**

In future combat situations, pilots from the 27th Fighter Squadron, the first squadron to fly the F/A-22 operationally, will then don the SRU-21/P survival vest. What goes in the multitude of pockets and pouches on this vest depends on the unit’s preferences and conditions, but generally includes a weapon, such as a Baretta M9 9mm pistol; survival radio; and flares. An attached survival pack includes a first aid kit, fish hooks and line, mirror, and a myriad of other gear.

Next comes the PCU-15/P parachute harness with the detachable LPU-9/P life preserver. “This harness and life preserver combination is designed for higher ejection speeds than those used in other aircraft,” Merrill notes. “It fits a little tighter around the neck, but it uses the same connections as those on an F-16.”

To top off the ensemble, pilots will pull on the HGU-55/P helmet. This helmet is not the “brain bucket” of twenty years ago. The HGU-55/P, as an integral part of Combat Edge, includes a bladder in the helmet that inflates and pushes the pilot’s face against the oxygen mask to get a good seal and prevent leaks.

The helmet is lightweight and has a larger cutout area for better peripheral vision. It also has several visors—tinted, gradient, and amber for various situations. “Some helmets also have night vision goggle mounts,” notes Merrell. “Since we are the training unit, we don’t wear NVGs with the F/A-22.”

The MBU-20/P breathing mask and regulator on the aircraft operate in normal mode, providing air when the pilot inhales. Together with the regulator on the aircraft, the mask also has a positive pressure breathing mode in which oxygen is continuously forced into the pilot’s lungs. In this mode, exhaling is actually harder than inhaling—additional protection against G-LOC.

The pilot is now ready to fly. A final piece of equipment taken to the jet is the small black bag seen in the photo at the pilot’s feet. The bag carries the data transfer cartridge, which contains the mission information and landing approach plates. If the pilot prefers, the bag also makes a convenient place for a water bottle.

Jeff Rhodes is the associate editor of Code One.
“The TriStar is not thought of badly,” says Wing Cmdr. R.A.D. Greene. “It’s just not thought of at all.” Greene commands 216 Squadron of the United Kingdom Royal Air Force, the only group in the world flying the Lockheed L-1011 airliners converted to cargo/tanker aircraft. “We are just expected to be wherever we are needed whenever we are needed.” Operations with the TriStar tankers began in 1984. Since then, 216 Squadron has frequently been sent from its base at RAF Brize Norton, near Oxford, England, to at least three of the four corners of the world, most recently to Kosovo, Afghanistan, and Iraq.

“We have no typical mission,” says Master Engineer Phil Chappell, a TriStar flight engineer. “In one five-day period, I have flown to Germany and to Canada, flown a local mission, and then flown to the Middle East. That pattern is not unusual.”

The squadron’s nine TriStars are rarely gathered together at Brize Norton, the RAF’s largest base. The unit flies daily passenger and cargo missions to Kuwait and Qatar. “Over the last two decades, we have made at least two or three trips to the Falklands,” Greene adds.

**Need Born In War**

The RAF traces its TriStar need to the Falklands War in 1982. This war between Britain and Argentina, with more than 7,000 miles between them, pointedly demonstrated the need for a long-range, large capacity tanker. “The RAF needed nine Victor tankers spaced out across the Atlantic to get one Vulcan bomber or one C-130 Hercules all the way down to the Falklands and back,” notes Greene. The requirement to resupply the British garrison on the islands after the war showed that the replacement for the Victor, a converted bomber, needed to carry cargo as well.

In late 1982, the RAF considered buying either new KC-10 tankers, as the US Air Force had done, or used commercial DC-10s. Instead, the RAF chose the Lockheed L-1011. The high cost of new-build tankers versus the immediate availability of L-1011 airliners and the lower cost of converting them tipped the scale.

Marshall of Cambridge (now Marshall Aerospace) won the contract to modify the L-1011s. Work began in February 1983. Six British Airways L-1011-500 aircraft,
including the first -500 aircraft to come off the assembly line of Lockheed California Company in Palmdale, California, were chosen for conversion.

The L-1011-500, which is about thirteen feet shorter than the other TriStar models, has longer wings, carries additional fuel in the wing center section, and has a higher gross takeoff weight, characteristics that make it an ideal cargo and tanker aircraft.

“The TriStar can carry twenty pallets and up to 266 passengers,” notes Greene. It can sustain speeds Mach .85, and it has a 5,000-mile range. “All of which are greater, faster, or longer than any other aircraft in the RAF.”

Marshall designed, manufactured, and installed seven additional fixed fuel tanks that fill the TriStar’s underfloor cargo bays and give it 100,000 pounds, or almost 17,000 gallons, of extra transferable fuel. Flight Refueling, Ltd., developed the twin-hose drum units, or HDUs, that reel the refueling hose and drogue in and out. The HDUs work independently, so the failure of one hose doesn’t end a mission.

Three additional L-1011-500s, purchased from Pan American World Airways in 1984, essentially unmodified, are used to carry passengers with baggage and cargo in the underfloor bays like a normal airliner.

“WE TELL THE PILOTS NOT TO LOOK AT THE DROGUE, BUT TO CONCENTRATE INSTEAD ON THE FLUORESCENT MARKINGS ON THE BOTTOM OF THE AIRCRAFT. THE PROBE WILL GO RIGHT IN THE BASKET. ONCE THEY LOOK AT THE BASKET, THEY TEND TO GET TOO CLOSE, WHICH CAUSES A PRESSURE WAVE THAT MAKES THE BASKET BOUNCE AROUND. WHEN THAT HAPPENS, I HAVE TO TURN ON THE ‘GET BACK’ LIGHT, MAKING THEM LAG BACK AND TRY AGAIN.”
Meet The Fleet

The squadron’s Latin motto, *CCXVI dona ferens*, translates to “216 bearing gifts,” quite fitting as the squadron has delivered bombs, depth charges, cargo, and kerosene from its earliest days of operation. When formed from the combination of two Royal Naval Air Service squadrons in 1918, 216 Squadron—which is always pronounced as two-sixteen in recognition of its history—flew Handley Page O/400 biplane bombers. During World War II, its crews flew Lockheed Hudsons and then switched to carrying cargo on Dakotas and Comets. A brief return to bombs came when the unit flew Buccaneers. Then came the TriStar.

Today, the 216 Squadron has two TriStar C. Mk. 2 aircraft that are former Pan Am airliners. The single C. Mk. 2A is a passenger aircraft that has military avionics, such as a TACAN and UHF radios needed to fly into less benign airports at forward locations. These aircraft also carry a permanently fitted aeromedical kit to move casualties.

Two TriStar K. Mk. 1 and four KC. Mk. 1 aircraft comprise the tanker fleet. The KC.1s are fitted with an upward opening cargo door that gives the aircraft the versatility of allowing large pallets to be loaded and carried. Omnidirectional rollers at the door allow the pallets to be turned once inside the fuselage. A TriStar can carry fifty-five tons of cargo, depending on the mission and the aircraft configuration.

The aircraft floor can be configured to carry all passengers or all cargo. To carry all passengers, additional palletized galleys and baggage storage bins are required. The normal configuration, a combination of passengers and cargo, consists of palletized passenger seats placed on the right side of the fuselage with rollers on the left and in the back. A reinforced net hangs just forward of the door to keep the cargo and crew separated.

Off To Work

“We are the largest squadron in the RAF,” Greene observes. “And we average more hours than any other squadron. It is a lot of flying, but we are an enthusiastic bunch.”

Because 216 Squadron is both a tanker squadron and essentially an airline, it also has sixty-four air stewards assigned in groups of two or three on the personnel flights. Their primary duty is passenger safety, but they also provide passenger comforts, such as cooking meals on long flights.

Commercial airliners typically have about five crews per aircraft. The ratio is about two crews for every aircraft for 216 Squadron. Each crew consists of two pilots, one flight engineer, and one loadmaster. The squadron currently has enough qualified aircrew members to form sixteen mix-and-match crews.

The unit’s motion-based simulator at Brize Norton is used about twelve hours a day. The simulator cab was a gift from King Hussein of Jordan, who not only used a TriStar as his executive transport but also often flew it himself. The Jordanian Royal Flight crews trained with 216 Squadron. “The simulator can do everything the aircraft does, including aerial refueling,” notes Tony Hoyle, the simulator manager. “The crews come back every two months for refresher training. Each simulator ride lasts about four hours. Every two months, they practice emergency procedures. We want them to feel like they are learning, not like they are being tested.”

In the aircraft, the pilots start out in the basic air transport role. After about six months, they learn to do basic aerial refueling. The pilots are trail qualified—able to escort fighter or another aircraft on a deployment—about a year after that. A copilot can move to the pilot’s seat after about two and one-half years of flying.
The squadron averages about 10,000 flight hours a year, roughly 540 hours per month, hauling passengers and cargo and 240 hours per month in air refueling, the unit’s key tasking. “Fighters, AWACS, transports—all need us to get where they are going and to do their jobs,” says Flt. Lt. Rick Skene, one of the squadron’s pilots. “If the process is completely effortless for the receiver, we have done our job.”

All Major Credit Cards Accepted

Mission planning for an aerial refueling sortie, whether at home station or during operations, should be done in pencil. Once word gets out that a tanker will be airborne, receivers (particularly fighters because their missions are so fluid) change times, change the number of aircraft, change the refueling order, change whatever. The tanker crews often get changes once airborne. “Flexibility is the key to airpower,” quips Skene.

A number of standard aerial refueling tracks can be found all around England, most off the coastlines. These areas of reserved airspace range in length from thirty-six to 100 miles for large aircraft or for pilots just learning the art of taking on fuel while airborne.

The tanker crew works as a team. The pilot flies the TriStar and has overall command of refueling. The copilot works the radios and generally plays traffic cop, keeping track of the receivers and other traffic through a large Joint Tactical Information Distribution System display. A loadmaster goes on all flights, but has few tasks once airborne. “I usually go sit up front with the crew and listen for updated weather reports,” says Sgt. Sam Main. “I also provide another set of eyes when we are refueling.” The flight engineer controls actual fuel transfer.

Unlike US tankers, no one actually sits in the rear of the aircraft. Refueling is controlled by an aft-facing, closed-circuit television camera on the underside of the aircraft. The camera has a field of view of 300 degrees with a filter for sunny days. The flight engineer’s refueling panel and a television screen for monitoring the tail view of the aircraft have taken up what had been a coat closet for the flight deck crew in the TriStar’s airliner days.

Once in the refueling track, the engineer unreels one of the eighty-foot-long hoses and the three-foot-diameter drogue basket reels. The hoses are alternated so they will wear evenly. “We have a guillotine to cut the hose if it gets fouled,” says Chappell. “But obviously, we have to consider where we are going to jettison a hose.”
The process starts by the receiver entering the refueling track and then flying a reciprocal heading toward the tanker. The crew can use either an air-to-air tactical aid to navigation or traffic collision and avoidance system to get lined up. “About seventeen miles out, we turn in front of the receivers,” Greene explains. “The receivers make up the distance. We can do all of this under radio silence, if necessary, to avoid giving away our position.”

Refueling takes place at about 280 knots indicated speed, or roughly 320 miles per hour. The TriStar has to speed up to refuel a Jaguar attack aircraft because of the aerodynamic interaction between the two aircraft and the location of the Jaguar’s refueling probe. The TriStar’s center engine is throttled back when refueling a Sentry Mk. 1, an E-3 Airborne Warning and Control System aircraft, because of the Sentry’s large fuselage-mounted radome.

Receivers line up on the right side of the tanker. The copilot acknowledges the receivers, then signals the first receiver to drop back and take up a position 1,000 feet astern. The receiver advances in 100-foot increments until the refueling probe makes contact. When the drogue is pushed forward seven feet, a microswitch opens and fuel begins flowing.

“We tell the pilots not to look at the drogue, but to concentrate instead on the fluorescent markings on the bottom of the aircraft,” notes Chappell. “The probe will go right in the basket. If they look at the basket, they tend to get too close, which causes a pressure wave that makes the basket bounce around. When that happens, I have to turn on the ‘get back’ light, making them lag back and try again.”

Fuel can be fed to the HDUs from any tank, but the engineer usually feeds from the fuselage tanks. Fuel is kept in the wing tanks to minimize wing flexing. The fuel flow pressure can be varied depending on the receiver. A Tornado attack aircraft can take on about 1,100 pounds of fuel per minute. A US Navy F-14 can take on about 4,000 pounds a minute, or about 700 gallons.

Once the refueling is complete, the receiver takes up position on the left side of the TriStar and the tanker pilot makes visual contact. The receiver stays there until the second or subsequent receivers have tanked up. When all aircraft have refueled, the TriStar pilot dismisses the receivers to break off and continue their mission.

“We have a sign that says, ‘All major credit cards accepted,’” says Greene. “The receivers get a big chuckle out of that. They never offer to pay up, though.”

Fuel On The Front Lines

216 Squadron has evolved into a tactical role. “In Yugoslavia, we were based in Italy to pick up the fighters coming from Germany,” recalls Greene. “After the fighters flew their missions, we would pick them
up again coming out. In Afghanistan, we worked the northern extremes of that country, which is a long way from anywhere.’

In Operation Telic, the British counterpart to Operation Iraqi Freedom, 216 Squadron operated over Iraq. “By the third day of the war, we were operating sixty miles out of Baghdad,” continues Greene. “The limiting factor in the air campaign was the number of tankers—people were always needing fuel. We needed to be where the receivers were. Forty percent of our receivers were US Navy aircraft.”

“We had several ‘we-need-gas-right-now’ situations,” recalls Skene. “One guy was so desperate for fuel, he jet-tisoned his weapons. We had to leave the refueling track and go find him. Another time, we were over the western desert in Iraq when we encountered a receiver who had blown his seals. Fuel was streaming out of his aircraft. He stayed on the hose for more than an hour before we could get him back to safety.”

Squadron 216 deployed four aircraft to Operation Telic. The crews flew 301 sorties for a total of 1,500 flight hours and transferred 16.5 million pounds of fuel (roughly 2.75 million gallons). “To operate that close to the front lines requires sensible planning,” Greene explains. “We would fly above the height of the antiaircraft fire. We always had fighters around us. We are, however, looking at installing some form of countermeasures into our aircraft.”

In a world of gray military aircraft, 216 Squadron’s TriStars stand out—literally. “Our TriStars have lots of lights and are painted white,” says Greene. “We want people to see us. We generally operate out of international airports during contingencies, so the aircraft are technically camouflaged. I wouldn’t mind seeing the Royal Air Force lettering taken off so that we would be even more invisible on the ground.”

Keep Them Flying

Even when the TriStars are not in the Middle East for operations, they are flown to Abu Dhabi in the United Arab Emirates where the Gulf Air Maintenance Company, or GAMCO, performs depot-level maintenance.

Despite the fact squadron aircraft are all between twenty and twenty-five years old, the airframes have experienced no major maintenance issues. “The L-1011s are holding up well,” says Squadron Leader Dawn Elson, 216 Squadron’s chief of maintenance. “These aircraft were meant to be flown hard, but we generally don’t do that except in operations out of the local area. We are balancing usage pretty well. Our 240 engineers do an outstanding job.”

The big issue, however, is spare parts. TriStars have been out of production for twenty years. The airlines that had large fleets are no longer flying them. “We were going to the desert to get parts off the parked aircraft, but the reliability of those parts is a little different,” Elson notes. “Some have been out there so long that they don’t work as well. Availability is an issue and getting parts will be more expensive, either to find them or to resort to fabricating them.”

A solution is needed as the TriStars are not scheduled for retirement for almost ten years. A replacement aircraft was selected last year under the RAF’s Future Strategic Tanker Aircraft, or FSTA, program, but it isn’t scheduled to enter service until 2009. That service date may be delayed. The aircraft, which will be a combination of new and used Airbus A330-200s, will replace both the 1960s-era VC-10 tankers and the TriStars in RAF service.

Until then, 216 Squadron will keep its TriStars flying. “We have become an indispensable asset to the RAF’s concept of operations,” says Greene. “We have a global fighting force, and the TriStars are a large part of what gets us there.”

Jeff Rhodes is the associate editor of Code One.
Hawkins Passes Away

Lockheed Martin aerospace engineer and designer Willis M. Hawkins died at his home in Woodland Hills, California, on 28 September. He was ninety. Hawkins worked for Lockheed Corporation for almost fifty years, during which time he led the team that designed the C-130 Hercules airlifter in 1951. He considered the Hercules one of his greatest successes. Among his many career highlights, Hawkins oversaw development of the Polaris, the US Navy's first sea-launched ballistic missile, and headed the then-classified Corona reconnaissance satellite program. He left Lockheed briefly in 1963 to serve as assistant secretary of the Army, and he started development of what became today's M1 Abrams main battle tank. Hawkins's career was detailed in the third quarter 2004 issue of Code One.

Miss Piggy Active, Too

The National Oceanic and Atmospheric Administration chased hurricane data this past season in a highly modified P-3 Orion nicknamed Miss Piggy. Data is collected from drop sondes, small instrumented tubes parachuted from the aircraft. On their way down, the drop sondes send back wind, speed, temperature, humidity, and pressure information used by hurricane forecasters to decide if the storm is getting weaker or stronger. Data gathered contributes to weather prediction and scientific study. NOAA has operated the WP-3D Orion since 1977.

HurricaneWarnings

The Air Force Reserve Command’s 53rd Weather Reconnaissance Squadron at Keesler AFB, Mississippi, spent a busy late summer and early fall battling Charley, Frances, Ivan, and Jeanne, hurricanes that pounded Florida and the Southeastern United States. The Hurricane Hunters, as the 53rd WRS is known, fly WC-130Hs through the center of hurricanes, parachuting drop sondes (small instrumented tubes) to collect weather data between 10,000 feet and land and then transmitting the collected data via satellite to forecasters at the National Hurricane Center in Miami. The data is used to improve the accuracy of predicting hurricane patterns.

Raptors Weather The Storm

The 325th Fighter Wing at Tyndall AFB near Panama City, Florida, deployed six F/A-22 Raptors to Nellis AFB, Nevada, before Hurricane Ivan hit the Florida coast. This precautionary measure was the first large deployment of F/A-22s.
New Hurricane Hunter
The recent hurricanes hammering the Southeast Coast brought damage—and the opportunity to test the improved low-power color weather radar in the new WC-130J Weatherbird. A team from the Air Force Flight Test Center at Edwards AFB, California, joined Air Force Reserve Command’s 53rd Weather Reconnaissance Squadron at Keesler AFB, Mississippi, to battle 155-mph winds and penetrate hurricanes Ivan and Jeanne fifteen times on six flights to collect performance data on the radar. The WC-130J not only will provide 53rd WRS crews a more reliable aircraft, but will also increase mission effectiveness. The WC-130Js are expected to be in service during the 2005 hurricane season.

Hercules Unchained
A surprise funnel cloud touched down at New Castle County Airport, Delaware, last September and damaged several C-130s of the 166th Airlift Wing. The C-130s, chained to the tarmac, were lined up about fifty feet apart until high winds blew one C-130 loose and sent it skimming wing down 150 yards across the ramp. Another C-130 sat tail down on top of the forward fuselage of yet another C-130. Two other C-130s spun nose up, tail down before crashing. Four people were injured in the tornado.

Cocaine Seized
Two US Navy P-3 Orion crews assigned to US Immigration and Customs Enforcement missions helped apprehend two fishing vessels in September that were carrying roughly twenty-seven tons of cocaine. One P-3 spotted the Lina Maria traveling off the coast of Ecuador. The other P-3 spotted the San Jose traveling 1,500 miles southwest of Manta, Ecuador. The vessels were later intercepted by the US Coast Guard. In this year alone, the Coast Guard has seized a record 240,519 pounds of cocaine. The Orions are part of a joint agency task force.

Out Of Antarctica
The Air Force Reserve Command C-141C aircrews will discontinue flying Operation Deep Freeze to Antarctica when the flying season ends in February 2005. When the season resumes next August, airlift mission responsibility will revert back to the 62nd Airlift Wing at McChord AFB, Washington. The Reserve took on the mission four years ago while McChord transitioned to the C-17. Reservists from the 445th Airlift Wing (Wright-Patterson AFB, Ohio), the 452nd Air Mobility Wing (March ARB, California), and Headquarters AFRC (Robins AFB, Georgia) will continue to form mixed crews to move National Science Foundation researchers and equipment from Christchurch, New Zealand, to McMurdo Station on the Ross Ice Shelf until the current flying season ends.

Honored Wing Awarded
Katsuhiko Tokunaga, noted aviation photojournalist and frequent contributor to Code One, was awarded the Republic of Korea Air Force Honored Wing during recent ceremonies at Wonju AB for his continued support of the ROKAF. Gen. Han Sung-Joo, 8th Fighter Wing commander, presented the award. The Honored Wing is bestowed on native or foreign civilians who render remarkable services or support to the ROKAF. Tokunaga is the seventh person to receive this award.

PHOTO BY SRA. MELISSA CHATHAM
PHOTO BY OS2 ERIC WEBER
PHOTO BY SSGT. JOE ZUCCARO
PHOTO BY SSGT. JOE ZUCCARO
PHOTO BY SSGT. JOE ZUCCARO
PHOTO BY SSGT. JOE ZUCCARO
Guard F-16s Drop GBU-38s In Combat

Two F-16 pilots from the Alabama Air National Guard each released a GBU-38 simultaneously on the same target in central Iraq in late September, marking the first successful drop of the guided 500-pound munitions in combat. The bombs hit precisely on a two-story building with minimal collateral damage. The target was a confirmed Abu Musab al-Zarqawi terrorist meeting. The GBU-38 gives coalition leaders a smaller precision weapon that further decreases the likelihood of collateral damage in Iraq. The GBU-38 consists of a Mk-82 iron bomb with the joint direct attack munitions guidance system.

Australian C-130Js To Iraq

Forty aircrew, maintenance, and support personnel from 37 Squadron of the Royal Australian Air Force received an official send-off by Australian Prime Minister John Howard, Defense Minister Robert Hill, and Chief of Air Force Angus Houston before being deployed to Iraq last September. The ceremony, held at RAAF Richmond near Sydney, was also attended by RAAF families. The 37 Squadron along with two C-130J Hercules aircraft replaced 36 Squadron, which has been deployed to the Middle East since February 2003 as part of Operation Catalyst (Australia’s contribution to the rehabilitation and reconstruction of Iraq). This deployment marked the first service to Iraq for the RAAF C-130Js, which were fitted with a self-protection suite before being deployed.

F-35 Robotic Coatings Facility Opened

The F-35 Joint Strike Fighter program at Lockheed Martin Aeronautics Company in Fort Worth, Texas, opened a new 82,000-square-foot coatings facility in September that will employ advanced robots to apply precisely measured coatings to components of the F-35. The facility also sets new standards for environmental friendliness. The facility, located on the factory floor near the F-35 assembly area, contains five multipurpose finish rooms and two robotic finish rooms in addition to control and support areas. Both robotic and human workers will use the facility to apply a variety of coatings to a wide array of F-35 parts. The facility will also conserve energy and control emissions during the coatings operation.

Engineering Weight Loss

Lockheed Martin engineers have stripped more than 2,700 pounds of unwanted estimated weight from the F-35B short-takeoff/vertical-landing version of the F-35 Joint Strike Fighter. This leaner load increases propulsion efficiency and reduces drag. The F-35B, intended first for the US Marine Corps and Royal Air Force and Royal Navy, is now expected to meet or exceed all performance requirements. Because of the design similarities among the three F-35 variants, many of the STOVL-version refinements will translate to the F-35A conventional-takeoff-and-landing and F-35C carrier versions. Nine countries are developing the aircraft, which they expect to receive early next decade.
F-35 Wing, Aft Fuselage Begin

Wing assembly for the first F-35 Joint Strike Fighter began last August when workers at the Lockheed Martin facility in Fort Worth, Texas, loaded an aluminum bulkhead and a front spar onto an assembly fixture. A few days later, team partner BAE Systems began producing the aircraft aft fuselage in Samlesbury, England. When the structural assembly of the thirty-five-foot wing is complete, technicians will add the internal systems. All four major subassemblies of the F-35 are now in production. The first F-35, an F-35A conventional-takeoff-and-landing model, is scheduled to be completed in 2005. First flight is scheduled for August 2006.

Peace Vector VI Base Opened

Hundreds of Egyptian and US government personnel turned out last May for the grand opening of Fayid Air Base, a state-of-the-art base built to accommodate the most recent sale of F-16 aircraft to Egypt. Renovations at Fayid AB, located on the western shore of the Gulf of Suez, included rehabilitating thirty-two aircraft shelters. Air Marshal Magdy Shaarawy, responsible for all Egyptian Air Force operations, hosted the ceremony. He acknowledged the twenty-year relationship between the Egyptian and US governments. "This project is a celebration of the efforts of many people, and it shows the cooperation between the United States and Egypt," he said. "I have very high appreciation for everyone who has kept the wheels running on this project. From the bottom of my heart, I want to thank you."

Hercules Anniversary Celebrated

Lockheed Martin commemorated the 1954 first flight of the YC-130 prototype in ceremonies at Marietta, Georgia, in August with a proclamation from the Georgia General Assembly honoring the Hercules. A special US Postal Service pictorial cancellation was also unveiled. Since that first flight, more than 2,260 Hercules aircraft of all types and in more than seventy different variants have been delivered to sixty countries. Sixty-seven countries, counting those that bought used aircraft, fly the Hercules today. The C-130J is the latest version to come off the longest, continuously active military aircraft production line in history.

West Coast Hercules Deliveries

New C-130Js descended on Southern California last fall when the 146th Airlift Wing at Channel Islands Air National Guard Station received its third and fourth new Super Hercules, and VMGR-352, the Marine refueling unit at MCAS Miramar, received its first KC-130J tanker. Brig. Gen. David A. Brubaker, the deputy director of the Air National Guard, flew one of the new C-130Js to its new home on 7 September. The wing will eventually receive eight C-130Js to replace the early 1960s version C-130Es it now operates. The KC-130J delivery was especially timely for VMGR-352, as it still operates many of the same KC-130Fs it flew when it converted in 1961 to what was then called the GV-1.
**RATTLRS Strike**

The Office of Naval Research awarded Lockheed Martin a phase two contract last July for the Revolutionary Approach to Time-critical Long Range Strike. RATTLRS, part of the National Aerospace Initiative, is a demonstration program to increase capabilities and performance for expendable supersonic vehicles. Lockheed Martin is teamed with Allison Advanced Development Company to develop technologies that will provide an advanced Mach 4+ integrated propulsion system in an operationally traceable airframe. The Allison YJ102R developmental engine provides more than six times the specific thrust of the engines in the SR-71 reconnaissance aircraft in a simple and inexpensive design suitable for an expendable missile.

**Last Korean F-16 Produced**

The last of 128 F-16s produced for the Republic of Korea Air Force was completed on schedule last August, ending the successful coproduction partnership between South Korea and Lockheed Martin begun in 1991. This last aircraft, a Block 52 F-16, was part of a second round of production for the Korean fighter. South Korea was the first country to produce the F-16 under license; Korea Aerospace Industries served as prime contractor. In 1994, the ROKAF became the first US ally to fly the advanced Block 52 version of the F-16.

**New York Guard A Hit In South Africa**

US military personnel and equipment from the New York Air National Guard were the stars of a two-day Aerospace Exhibition at Waterkloof AB in Pretoria, South Africa. The event, held in late September, marked the first time aircraft and guardsmen from New York participated in a South African air show. More than 200,000 visitors to the show, the largest on the African continent, got a close look at a C-5, F-16, KC-135, and HH-60 Pave Hawk helicopter. The New York Guard representation was made possible through the State Partnership Program, a National Guard initiative that aligns American states with other countries and encourages the development of economic, political, and military ties.

**Aid To Beslan Victims**

An active duty crew from the 38th Airlift Squadron along with crews from the Air Force Reserve Command deployed to Ramstein AB, Germany, in early September to deliver more than twenty-seven tons of medical supplies to victims of the terrorist attack in Vladikavkaz, Russia. The deployment was part of the humanitarian response to the siege at the elementary school in Beslan that claimed more than 300 lives, most of whom were children. C-130Es from active duty squadrons delivered an EKG unit, surgical equipment, burn dressing kits, clinical chemistry analyzers, blood gas analyzers, and portable X-ray systems, as well as antibiotics, sheets, blankets, and other medical supplies.
Four Aviators Lost In Viking Crash

Four VS-35 aviators killed in a routine training mission were remembered in a missing man formation of S-3Bs during memorial services last August over the carrier USS John C. Stennis (CVN-74). The aviators—Lt. Patrick Sean Myrick, Lt. James Joseph Pupplo, Lt. Cmdr. Scott Allen Zellem, and AT2 Joshua Brent Showalte—died when their aircraft impacted Kita Iwo Jima, an uninhabited island north of Iwo Jima. More than a thousand officers and crew assembled on the flight deck for the memorial ceremony. The training mission was part of a joint exercise between the Stennis and USS Kitty Hawk (CV-63) carrier strike groups in the western Pacific.

Land Swap For C-5s

US Air Force signed a land-exchange agreement with the Memphis-Shelby County Airport Authority in September allowing the 164th Airlift Wing of the Air National Guard more space to convert from C-141B StarLifters to C-5 Galaxys. The agreement calls for the airport authority to provide the Tennessee ANG unit with 118 acres to build three new hangars with associated support facilities. In exchange, the airport authority will allow Federal Express to lease the existing 103 acres of the 164th AW site. New hangars, support facilities, refueling systems, an aircraft apron, and a taxiway are to be completed by December 2008 for the eight C-5As to be stationed there.

Viking Testing Concludes

Carrier suitability tests for an upgraded S-3B Viking concluded in September at NAS Patuxent River, Maryland, marking the end of S-3s in developmental or operational test at the Naval Air Warfare Center. The Viking was tested with a new data handling system. The modification in all S-3B aircraft, to be completed in 2005, will help keep the Vikings viable until they are retired in 2009.

Can You Hear Me Now?

The Joint Strike Fighter program is sponsoring the development of advanced hearing protection technologies that prevent noise-induced hearing loss for maintenance personnel supporting the Navy, Marine Corps, and Air Force F-35. Earplug designer Adaptive Technologies, Inc., will produce approximately forty active noise reduction test sets, enough to qualify and demonstrate the system’s utility. The custom earplug protects users against high-intensity ambient noise while allowing them to communicate. The earplugs contain a miniature microphone and speaker that work together to cancel a portion of the attenuation and provide communications capability.
**Once More Around The World**

The 6th Airlift Squadron at McGuire AFB, New Jersey, took the long way home for its last overseas flight in the C-141—by going around the world. Twelve crewmembers with more than 59,000 StarLifter flying hours between them departed McGuire on 19 August as an extension of the normal weekly Bahrain run the 6th AS made for months. The trip included stops at NAS Norfolk, Virginia; Bahrain; Diego Garcia, where the crew evacuated a patient to Singapore; Yokota AB, Japan; Kadena AB, Japan; Hickam AFB, Hawaii; Travis AFB, California; and Dover AFB, Delaware. StarLifter and crew returned to McGuire 28 August.

**C-130 Maze**

The image of a C-130 carved into a cornfield near Lewistown, Illinois, was not some mysterious crop circle. It was the hard work of local farmer Larry Webb who devoted more than six acres of cornfield on his 1,200-acre farm to the image of a C-130 flown by neighboring 182nd Airlift Wing. The work not only provided an artistic statement to aerial passers-by but also created an intricately designed maze. "Lewistown has a lot of Guardsmen," said Webb. "I know a lot of those guys, and I love to hear them fly over." Admission to the maze raised money for programs at Lewistown High School.

**Naval Cadet Training**

VS-24, NAS Jacksonville, Florida, hosted Naval Sea Cadets from around the nation for advanced naval aviation training in August. The educational outing included aviation physiology, ejection seat procedures, tire thread safety, fueling, aviation electronics, and hydraulics. The cadets spent one morning in the Sea Control Weapons School flight simulator and experienced flying an S-3B Viking and landing it on an aircraft carrier.

**Citius, Altius, Fortius**

A C-130H crew from the Royal Australian Air Force supported the fledgling Iraqi Olympic movement by airlifting the entire Iraqi Olympic team from Baghdad last August to meet connecting flights into Athens. Iraq’s soccer team later advanced to the bronze medal competition. The RAAF C-130 Hercules detachment currently in the Middle East consists of about 150 personnel with two transport aircraft, ground crew, and other support elements. The 36 Squadron C-130 crews have flown more than 630 missions in their first eighteen months and transported almost 14,900 passengers, including almost 1,000 medical patients and more than 13.3 million pounds of cargo.
Stores Away

An F/A-22 Raptor pilot flying at 30,000 feet dropped a satellite-guided GBU-32 1,000-pound Joint Direct Attack Munition, successfully hitting its designated ground target on the ranges at the Air Force Flight Test Center at Edwards AFB, California. This developmental test, conducted in September, marked the first complete mission demonstration of the Raptor’s air-to-ground attack capability. A guided AIM-120 air-to-air missile launch against two drones was also accomplished in September. The missile, which passed within lethal range of the intended target, was credited with a kill. In early September, separation tests were successfully completed with an AIM-9 missile at 40,000 feet, a JDAM at 5,000 feet, and two external fuel tanks at 5,000 feet.

Kolligian Trophy Presented

Gen. John Jumper, US Air Force Chief of Staff, presented the Kolligian Trophy to Capt. Michael Matesick during a ceremony last July at the Pentagon. Matesick earned the award for piloting his F-16 to safety after he experienced a major engine malfunction over Iraq in June 2003. He jettisoned his external stores and established his aircraft on course for a flameout landing at Baghdad International Airport, thirty-five miles away. After discovering the runway was closed, Matesick found an available taxiway and landed there. The award is presented annually in memory of Lt. Koren Kolligian, who was declared missing when his T-33 aircraft disappeared off the California coast in 1955. The trophy, established in 1958, is the only Air Force individual safety award personally presented by the chief of staff.

More Power

The Federal Aviation Administration certified General Electric’s CF6-80C2 engine for the C-5 Reliability Enhancement and Re-Engining Program in September. The certification follows eight months of ground testing on the engine to validate the integration with the aircraft systems and the new FADEC III control system. The first engine was then delivered to Lockheed Martin in Marietta, Georgia, for installation. The RERP propulsion system includes the CF6-80C2 engine (to be designated F103-GE-100), thrust reverser, and nacelle. The CF6-80C2 turbofan has accumulated more than 100 million flight-hours logged on ten different commercial applications.

RERP Up Next

The first production Galaxy modified under the C-5 Avionics Modernization Program, which was completed in September, was delivered to Lockheed Martin in Marietta, Georgia, to begin the Reliability Enhancement and Re-Engining Program. AMP provides modern digital avionics and flight instrumentation for the C-5. The first aircraft, a C-5B, was modified by a Lockheed Martin field team at Dover AFB, Delaware. In addition to new engines, RERP includes more than seventy system and equipment improvements to enhance reliability and maintainability. First flight of a C-5M aircraft is scheduled for fall 2005.

Oldest To Fly The Newest

The 27th Fighter Squadron at Langley AFB, Virginia, became the first operational F/A-22 squadron in October, with the first assigned F/A-22 scheduled to arrive in May. An F/A-22 used for maintenance training arrived at Langley from Edwards AFB, California, in November. The 1st Fighter Wing is scheduled to get two F/A-22s from Tyndall AFB, Florida, in 2005. The 27th FS and its sister squadrons, the 94th and 71st, will eventually get twenty-four F/A-22s each. The 27th FS is scheduled to reach initial operational capability in December 2005. The 27th FS, the oldest squadron in the Air Force, dates back to World War I.
Shining DarkStar

The Museum of Flight in Seattle, Washington, put a Lockheed Martin/Boeing/DARPA RQ-3A DarkStar autonomous unmanned aerial vehicle on display in late August. The air vehicle, an FV-3, is the third of four DarkStars built. It was never flown, as the program was terminated in 1999. FV-3 is on permanent loan from the National Museum of the US Air Force at Wright-Patterson AFB, Ohio. DarkStar, along with Predator and Global Hawk, formed the first generation of US Air Force unmanned reconnaissance vehicles in the mid 1990s. It was designed to be fully autonomous: take off, achieve target area, operate sensors and transmit imagery, and return and land without human intervention.

First EC-130J Rolled Out

The 193rd Special Operations Wing at Harrisburg, Pennsylvania, rolled out its first EC-130J during formal ceremonies last September to the theme song from Star Wars. The aircraft, used to conduct psychological warfare missions and civil affairs broadcasting, is the first special operations variant of the C-130J. The Pennsylvania Air National Guard unit is scheduled to receive three Commando Solo aircraft and two Super Js, which are standard C-130J aircraft containing specialized equipment and modified for air refueling. The 193rd has conducted psyops since 1967.

169th Fighter Wing Link-ed

Block 52 F-16Cs of the 169th Fighter Wing at McEntire ANGS, South Carolina, are being outfitted with the Link-16 tactical datalink. A Link-16 installation field team will oversee the conversion to upgrade all South Carolina Guard jets with the datalink terminals by next summer. Link-16 is a secure, jam-resistant, datalink system used to share tactically useful information among fighter aircraft and other platforms. Link-16 allows the aircrew to receive up-to-date, real-time information, enhancing mission performance.

F-1 Flies Again

The Santa Barbara Radio Control Modelers flew a one-quarter scale replica of the Loughead (pronounced Lockheed) Aircraft Manufacturing Company F-1, a ten-passenger, twin-engine flying boat. The original aircraft, which was built in Santa Barbara, California, was first flown in 1918. Shortly thereafter, it completed the longest overwater flight in history—from Santa Barbara to NAS North Island, California—to be evaluated by the Navy. The model, which is being built for the Santa Barbara Maritime Museum, is nine feet long and has an upper wing-span of more than eighteen feet. It will be displayed in the museum to commemorate Santa Barbara’s role in early aviation.
NOTAMS

Model Giveaway

New and current Code One subscribers are in for a treat when their names are automatically entered to win an F-16 desk model built to 1/72nd scale and signed by the first pilot to fly the F-16 prototype, Phil Oestricher. For a chance to win without subscribing, send name, address, and telephone number to: Code One F-16 Model, PO Box 748, Mail Zone 1503, Fort Worth TX 76101. Entries must be received by 15 January 2005. One entry per address, please.

RBAF Milestone

Lt. Col. Salah E. Al-Mansoor became the first Royal Bahraini Air Force pilot to reach the 2,000 flight hour mark. Salah, assigned to the 1st Fighter Squadron at Shaikh Isa AB, Bahrain, achieved this record earlier this year. He was also the first Bahraini pilot to reach the 1,000 hour mark in the F-16 in June 1995.

Mass Tactical Exercise

C-130 crews from the 37th Airlift Squadron at Ramstein AB, Germany, drop equipment over Grafenwoehr, Germany, last August during a tactical exercise. The squadron dropped more than 430 personnel and 70,000 pounds of cargo over a two-day period.

Salitre 2004

F-16 pilots Capt. Paul Wells and Lt. Col. Francis Carillo, from the New Mexico Air National Guard, flew the first sorties of the Salitre 2004 multinational exercise at Los Condores AB, Chile, in early October. They flew against air forces from Chile, Argentina, and Brazil. The pilots, from the 150th Fighter Wing at Kirtland AFB, New Mexico, joined nearly 150 other US airmen for the exercise.

Diamond Cutters Last Slice

The S-3B Vikings of Sea Control Squadron 30, known as the Diamond Cutters, are completing their final cruise. VS-30 is to be decommissioned in December 2005 after returning from a six-month cruise aboard the USS John F. Kennedy (CV-67). VS-30 was once the fleet replacement command for all S-3 pilots and naval flight officers.

A Flare For Flight

This pair of F-16 pilots release flares during a mission over Iraq in August. The fighters, from the New Mexico Air National Guard, are assigned to the 332nd Air Expeditionary Wing at Balad AB, Iraq.

US Ambassador To Poland

Victor Ashe got the ride of his life at Lask AB last September. After a half-hour demonstration flight in an F-16, the ambassador said: “When do we do this again? I’ve found a new career.”

Remains Recovered

The remains of US Naval aviators lost after their P2V Neptune patrol aircraft crashed into Kronborg Glacier in Greenland more than forty years ago were finally recovered and returned home last August. The recovery mission, conducted by a Navy team that departed Norfolk, Virginia, was aided by the unusually warm weather in Greenland and Iceland this year. The Neptune disappeared over the North Atlantic during a routine reconnaissance mission in January 1962.

Moving The Afghani Army

A US Air Force C-130 Hercules crew accompanied by Afghan soldiers prepares to take off from Kabul International Airport, Afghanistan, last August en route to Shindand National Airport. The Afghans deployed to Shindand to retake control of Afghan government property seized as a result of factional fighting in the area.

VP-30 Milestone

VP-30, the largest aviation squadron in the Navy, recorded its 400,000th mishap-free hour last July during a flight on one of its P-3C Orions. The milestone is particularly remarkable because the Pro’s Nest, as the VP-30 is called, is the Navy’s maritime patrol fleet replacement squadron. The VP-30, based at NAS Jacksonville, Florida, also celebrated its fortieth anniversary last June.