During a training exercise in West Germany, a CH-53C from the U.S. Air Force's 601st TASS, picks up a load.

How The 601st Plays The Radar Shell Game

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Reporting from Sembach Air Base, West Germany

Now you see the radar unit, now you don't. A U.S. Air Force squadron in West Germany plays a deceptive game meant to keep Soviet forces guessing.

THERE IS, IN WEST GERMANY, a kind of shell game going on—and helicopters are used to move the shells. Actually, what's being moved are short-range radar units used to detect low-flying, attacking aircraft that may come blitzing from the east. Nevertheless, like the deceptive shell game, these units are continually moved around, making them less of sitting ducks to enemy attack.

Controlling the shell game is the U.S. Air Force's 601st Tactical Control Wing, based at Sembach Air Base. Its mission: provide tactical air control for the commander-in-chief, U.S. Air Forces Europe (USAFE), and the commander, Allied Air Forces Central Europe. In short, it plans, directs, and controls offensive and defensive air operations in central Europe.

Such a mission requires an extensive network of both fixed and mobile ground-based radar units scattered throughout the German countryside, from the North Sea to southern Bavaria. For the constantly moving mobile units, the 601st employs the Tactical Air Support Squadron (TASS), which operates seven heavy-lift Sikorsky CH-53Cs.

Hard-to-see 53s

The Air Force chose helicopters for this mission because they can move quickly and do not rely on a road network that might be damaged or congested in case of war. (Ground vehicles are used to transport radar sets over only short distances.) And the CH-53 was chosen because it is the only type that can lift any piece of radar equipment in the Air Force's inventory.

It might seem that, should an attack occur, these large Sikorskys would make easy targets for enemy aircraft. But during training exercises with friendly fighters, the jet pilots could rarely see the contour-flying helicopters below. The CH-53s are therefore only equipped with standard radar-warning receivers (which are of doubtful efficiency) and their pilots learn no specific defensive measures during training.

The 601st TASS, also based at Sembach, comprises 63 personnel, including 26 pilots. Accompanying the pilots on radar-transport missions are engineers, also called mission specialists, who are responsible for every aspect of the lift operation. Standard crew on a CH-53C is two pilots and two engineers.

The 601st averages 2,000 flight hours annually. Each pilot generally flies 180 to 200 hours per year, although young pilots tend to fly more to improve the unit's overall experience. To maintain mission qualification, a pilot in the 601st must participate in at least 18 missions every six months.

Not all the 601st's missions involve transporting radar sets (see sidebar). Other tasks involve deployment, logistical support, and general-utility work.

The CH-53's muscle is also occasionally applied to retrieving aircraft remains at crash sites. A problem peculiar to this mission is bringing large aircraft pieces back to base, as the pieces tend to break up when lifted.

Lift procedures

Although there really is no "standard" airlift mission for the 601st, the squadron does apply standard procedures. Mission speeds vary from 50 to 120 knots and altitudes average less than 200 feet, reserving the thinner air for the jet jockeys.

With jettisonable, auxiliary fuel tanks on its sponsons, the CH-53C can fly without a load for up to 4.5 hours. When it ferries a load, however, the endurance often drops to three hours.

Before a CH-53C makes a radar-set pickup, the load must be prepared for transport by the GSU (geographically separated unit). Then the engineers on board the helicopter choose between two types of slings. They may choose to lift the load with a low hookup 10 to 12 feet (3 to 4 m) long; or a high hookup, with 40 feet (12 m) of line between cargo and aircraft.

Pickup operations must be quick; so to save time, ground personnel prepare wire loops on top of the cargo pallets and, as the helicopter swoops down, an engineer hitches the loops to the aircraft's cargo hook, using a hooklike "shepherd's stick." If properly prepared, a pickup can take only seconds.

A major hazard to ground personnel is the aircraft's static electricity, which is strong enough to knock an unwary soldier out cold. So, prior to touching the sling, care is taken to ground the aircraft.

Night flying

Most of the 601st's flights are carried out in a "communications blackout" mode and night flights are made in literal blackout. Night-vision goggles (NVGs) are being introduced to the squadron for use by both pilots and engineers.

According to squadron commander Lt. Col. Edward Gmyrek, TASS crews are "slowly being qualified on NVGs." Qualification requires at least six night flights for a total of about 20 hours. No fewer than two of the 18 missions necessary to retain operational qualification must be flown at night, using

Fjords, bullet-riddled airplanes, and the president

Although the 601st Tactical Air Support Squadron (TASS) normally flies in West Germany, it has flown on missions in places as diverse as northern Norway and southern Spain. It has even flown in support of a presidential visit to Europe.

In Norway two years ago, the unit was assigned to establish and support a radar station on a mountaintop above the Arctic Circle. The deployment lasted six weeks and required almost daily flights between the radar site and nearest airbase, an hour's flying time.

Hazards peculiar to the job included severe cold and frequent whiteout conditions, especially during takeoffs, landings, hookups, and hookdowns. Causing further danger were the unmarked towers and wires strung across Norway's fjords. Strong winds (50-plus mph) and snowstorms would often force the helicopters to fly at extremely low altitudes. In fact, they commonly followed fjords just a few feet above the sea.

In Spain, flying conditions were quite different but a little less hazardous. The 601st's mission there was to move nine old Lockheed T-33 hulks used as targets on an aerial gunnery range some 50 miles (80 km) north of Zaragoza Air Base, in northern Spain.

On approaches, the CH-53s' downwashes not only created local sandstorms but also pushed the T-33 hulks around. Consequently, the helicopters sometimes had to literally chase the T-33s.

Once airborne, the T-33s tended to fly while hooked to the helicopter, even though they were riddled with holes. If attention wasn't given to the fixed-wing's attitude, the aircraft would actually overtake the helicopter.

Flights were made at dawn, since the hot, midday temperatures ate into the CH-53's lift capability. This was especially true when, at a Spanish commander's request, the squadron lifted several F-86 airframes, each weighing about 14,000 pounds (6,350 kg). Hovering with the F-86 hooked up used 100% of the CH-53's power—and only 103% was available because of the high temperatures. Tricky flying indeed.

More agreeable missions were in support of President Reagan's visits to Ireland and Germany in 1984 and 1985. The unit used five helicopters a total of five weeks (three weeks one year and two weeks the next) and never had to abort a mission.

NVGs, and the unit's objective is to have each pilot fly at least two night missions per quarter.

Until pilots reach the minimum level of NVG proficiency, however, most night missions are flown IFR. The 601st's CH-53Cs are outfitted with TACAN, VOR, and ADF in addition to a full IFR suite. And the squadron hopes to also add an inertial navigation system.

All but six 601st pilots are qualified to aircraft-commander standard and two of the six were upgrading to commander status during R&WI's visit. Pilot experience varies considerably, thus the unit has two major pilot categories. The first category comprises pilots who have seven to eight years' experience, mostly on helicopters, with perhaps as many as 1,000 flight hours, mainly in CH-53s. The second category comprises junior officers (lieutenants) recently graduated from flight school.

When entering the unit, all pilots undergo a "European checkout" and an operational checkout. This 90-day initiation is essential, as there is a vast difference between flying the often-CAVU skies over expansive Kirtland AFB, N.M., (where pilots train) and over Germany, where weather can get nasty and airspace congested.

The engineers

More experienced than many of the pilots are the 601st's engineers. "They know what to rig and how to rig it," said one pilot. "We rely on them to keep us out of trouble."

Most engineers have years of experience and several have more than 1,000 hours of helicopter time. And they like their job. Said one engineer, "As far as enlisted helicopter flying, this is the best assignment in the Air Force." Another noted that before working for the 601st, he had "never moved loads as heavy, as expensive, and as nonaerodynamic. It's quite challenging."

To help meet their challenge, crewmen with the 601st train extensively. They also exchange notes with U.S. Army and German army heavy-lift units (the latter also fly CH-53s).

The squadron's training commonly takes place south of Kaiserslautern, at a jet-aircraft training area. There, the population is sparse and the terrain is both flat and hilly, making it ideal for practicing low-altitude sling flights.

Probably more experienced than the 601st's crewmen are the aircraft they fly. Almost all of the squadron's aging CH-53Cs have seen combat in Vietnam.

Still, they faithfully remain on duty, thanks to the 601st Composite Aircraft Maintenance Squadron (CAMS), also deployed at Sembach. With no maintenance capability of its own, the 601st TASS relies on CAMS for all repair. When aircraft and crews leave Sembach for temporary duty, they're accompanied by a CAMS detachment, including specialists, crew chiefs, and spare parts.

Despite this seemingly complicated arrangement, the TASS unit is pleased with the quality of its support. And aircraft availability last year was such that not one scheduled mission was aborted because of technical reasons.

Nevertheless, the 601st TASS hopes to eventually acquire its own, in-house maintenance capability. CAMS currently supports both fixed-wing and rotary-wing aircraft, and TASS personnel believe separating the two tasks would make more sense. So, CAMS helicopter specialists may someday join the TASS, making the unit more self-contained and flexible.

This bird's eye view shows a TASS CH-53C hooked up and ready to sling cargo from a deployed unit.

Additional aircraft?

Some have wondered if more aircraft should join the 601st as well. They note the various missions and large area to support, and propose that Bell UH-1 Hueys or Sikorsky UH-60 Black Hawks could fly on the "mail runs." And why use the giant CH-53 to merely refuel or resupply a radar site?

But TASS personnel don't share these views and argue that the CH-53's capability allows the 601st to carry out several missions on a single sortie. In addition, the big Sikorskys can be redirected to primary transport missions if necessary, thereby increasing the unit's responsiveness and flexibility. And for a tactical air support squadron operating within shooting range of the East-West border, those two qualities are essential. ■