



Against All Odds

In March and April 1966, a small team of dedicated pilots and engineers set out to definitively prove the performance of the YOH-6A — and walked away with 23 world records.

By Don Porter



On June 19, 1966, following a series of 23 record-setting flights, one of five prototype Hughes YOHO-6As is displayed at Le Bourget Airport during the Paris Air Show. **American Aviation Historical Society Photo**

Almost exactly 50 years ago, a remarkable four-week period in aviation history saw one helicopter, a U.S. Army Hughes YOHO-6A (ship number 24213), set 23 world distance, speed, climb, and altitude records. Fourteen of those records remain unbeaten today. This is the story of what led to that unique set of flights, and how without it, the MD 500 — considered by many to be one of the greatest helicopters ever developed — may never have existed.

Although the OH-6A — the MD 500's progenitor — established a legendary record for performance during the Vietnam War, its assembly line at the Aircraft Division of Hughes Tool Co. in Culver City, California, came perilously close to being shut down by the U.S. Congress before the first aircraft had even been delivered. The OH-6A had been developed in response to the U.S. Army's need for a turbine-powered light observation helicopter, and on May 26, 1965, Hughes was awarded a contract to manufacture 714 of the machines, beating competition from Bell Helicopter and Hiller Aircraft.

Hughes won by submitting a bid that was one-third less than the cost of each aircraft's bill of material, hoping to make up for the

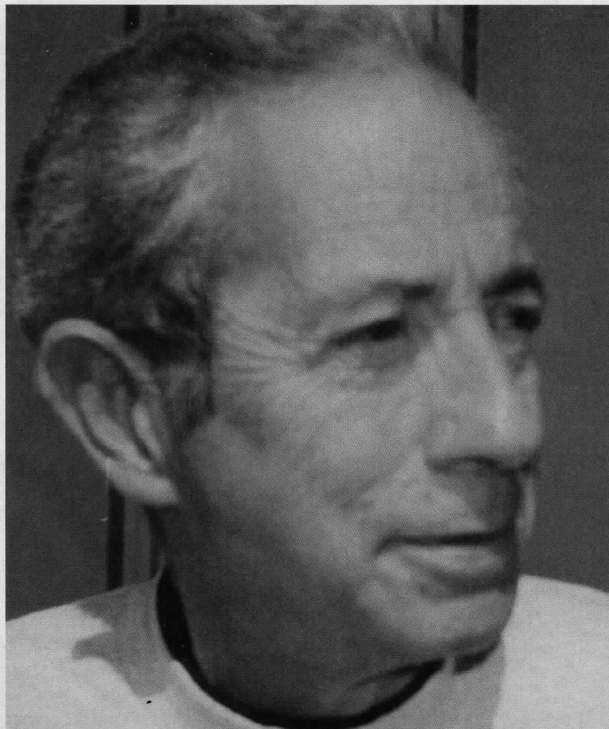


The YOHO-6A is weighed before its record-setting transcontinental flight. Pilot Bob Ferry (left) poses with project engineer Phil Cammack. **Phil Cammack Photo**

shortfall on future contracts. In early 1966, the Army wanted to buy 121 more helicopters, even though no OH-6As had yet been delivered because of production bottlenecks. For the second procurement, Hughes proposed a price 182 percent higher than it had been just months earlier. Shocked at the increase, the Army pulled back the request in April 1966. It didn't take long for staffers at a subcommittee of the House Armed Services Committee to gain wind of the derailed deal and schedule investigative hearings for the spring of 1967. Without sufficient helicopters to support operations in Vietnam, the hearings were expected to morph into a public relations nightmare for both the contractor and the military.

Hughes and the Army were sold on the merits of the machine, but they needed to soften the mood of the program's detractors before the hearings got under way. Demonstrating the OH-6A's capabilities by setting flight records would hopefully do just that.

The initiative to set records began when a letter from the Army arrived at the Hughes plant. "My boss said, 'The Army wants to set eight records. Will you take care of it?'" recalled Phil Cammack, who became a project engineer for the flights. "After reading the



Phil Cammack, the engineer who planned and coordinated the record-setting program. **Phil Cammack Photo**



Record-setting ship 24213 now resides at the U. S. Army Aviation Museum in Fort Rucker, Alabama. **U.S. Army Aviation Museum Photo**

letter, I suggested we attempt to set a bunch more records, including time-to-climb. But some of them would require flying at altitude."

Army helicopter pilots weren't trained to fly at altitudes above 10,000 feet — but Hughes test pilots were. Cammack asked his Army counterparts whether he could supply the pilots, and to his surprise, they said yes. In fact, eager for positive publicity, the Army was more than agreeable. Five Army pilots, two Hughes pilots, and a pilot from engine maker Allison would handle the flying. Previously, only military pilots on active duty had flown record attempts in new military aircraft. In addition to Cammack and the pilots, two Hughes employees rounded out the team: crew chief Dick Lofland and mechanic Ted DeSantis.

The Army lent a prototype YOJ-6A to Hughes gratis, but the company had to cover most other costs related to the record attempts. The flights would be conducted over the Southern California desert at Edwards Air Force Base, with the exception of a cross-country flight originating from the Hughes plant in Culver City.

PREPARING FOR A WORLD RECORD

The YOJ-6A was stripped of unnecessary equipment in order to maximize its speed and range. Before each flight, the helicopter was positioned on scales in a hangar while fuel was uploaded to reach a calculated takeoff weight. About an hour before takeoff, it was weighed again — with the pilot aboard. If necessary, a few pounds of fuel were added to reach the required weight for whatever record was being challenged. After the weighing process, the helicopter was hoisted by a crane and positioned on the ramp outside the hangar. From there, it was flown a short distance to the starting point of the record course.

Three courses already existed at Edwards and had been certified for previous record-setting flights. For the speed attempts, three- and 15-kilometer courses were configured along a single straight line. The closed-circuit speed and distance flights were set up along a 100-kilometer course consisting of 12 pylons placed in a circle at equidistant points. Official timers from the National Aeronautic

Association were ready to observe the helicopter's progress, with ground radar tracking it from takeoff. Use of radar enabled the pilots to fly at any altitude without requiring them to rely on visually spotting the pylons on each course.

First up on March 12 was the Army's Col. David Kyle. During the early morning hours, he set three speed records in the 2,205- to 3,858-pound (1,000- to 1,750-kilogram) takeoff weight class: 136 knots (252 km/h) along a 100-kilometer course; 135 knots (250 km/h) over a 500-kilometer course, and 133 knots (246 km/h) on a 1,000-kilometer course. As of 2016, the 500- and 1,000-kilometer records are unbroken.

"We smoothed out the aircraft's access doors and latches with duct tape," Cammack told a colonel who was watching Kyle's flight. "When Kyle went smokin' by, a piece of tape came off and fluttered to the ground," he said. The colonel thought the helicopter was disintegrating. "I told him, 'Relax, it's just a piece of duct tape.'"

The next day, Maj. A. J. Darling flew the same profile that Kyle had, but at a takeoff gross weight less than 2,205 lb. (1,000 kg). He set three speed records in the 1,102- to 2,205-lb. (500- to 1,000-kg) class. These records also remain unbroken.

In the first two days, the YOJ-6A set six world records. The momentum was building.

On March 19, Chief Warrant Officer Dick "Ski" Szczepanski attempted a speed record along a 1,243-mile (2,000-kilometer) closed-circuit route in the 2,205- to 3,858-lb. class. "I stuffed Ski in, along with three-fourths of a ton of fuel in a helicopter the size of a Volkswagen, and off he went," Cammack recalled. Szczepanski zipped around the course for nine hours without landing. At 123 knots (228 km/h), the YOJ-6A became the fastest helicopter in the world to fly this distance — the equivalent of flying from Miami to Boston. The record still stands in its weight class.

Hughes test pilot Jack Zimmerman followed Ski and set a record for distance over a closed course without landing in the 1,102- to 2,205-lb. class. Takeoff time was 7:45 a.m., with landing shortly before sunset at 4:50 p.m. Each lap was 62 miles long. The

distance flown nonstop during this nine-hour and five-minute "journey to nowhere" totaled 1,056 miles (1,700 kilometers).

"Jack indicated 'empty' on his fuel gauge as he began the last lap but insisted on continuing," crew chief Lofland recalled. On landing, what fuel remained in the tank was drained — half-filling a one-pound coffee can.

On March 23, in the 2,205- to 3,858-lb. class, Col. Joseph Gude set records by taking the YOH-6A to 150 knots (277 km/h) over the three-kilometer course and 147 knots (272 km/h) over the 15-kilometer course.

For the helicopter's sixth flight on March 24, in the 1,102- to 2,205-lb. class, Lt. Col. Richard Heard turned in a speed of 148 knots (275 km/h) over three kilometers; his 15-kilometer attempt set a record at 149 knots (277 km/h). Both records remain unbroken.

TESTS OF ENDURANCE

Next came one of the most incredible helicopter flights in history.

Jack Schweibold, the pilot for Allison, took off in the dark on March 26 at 1:02 a.m. to attempt a distance record on a closed course. He barely got off the ground. "With all this fuel, we were set to be a fiery napalm bomb if we hit anything," he recalled. "If something happened to the engine at this weight, there was no recovery."

Schweibold discovered that the winds aloft weren't ideal, but he was able to nurse the helicopter up to 17,000 feet, circling the course nonstop throughout the night and into the day. The challenges were enormous: flying in darkness without ground landmarks for six hours and making precision turns around the pylons every 2.5 minutes. The winds reduced his groundspeed, causing the Allison T-63-A-5A engine to consume more fuel than expected.

A landing was timed for daylight hours in case Schweibold began to doze off. As a precaution, he swallowed stay-awake tablets over the course of the flight, which turned into a cliffhanger. "We lost radio communication with him on the last lap," Cammack said. "The weather was closing in, but he made the last two turns okay and returned to the hangar."

The engineer watched him land. "He ballooned up about thirty or forty feet, and I thought, 'He's just tired.' But then he made a good landing." When asked what happened, Schweibold responded: "The oxygen hose was caught under the collective [lever]."

Schweibold landed at 4:31 p.m. on the same ramp at Edwards where he began the flight 15.5 hours earlier, setting the record for distance flown by any size helicopter in a closed course: 1,740 miles (2,800 kilometers). About 49 pounds of fuel remained; only another lap or two might have been possible had the weather permitted.

The next day, Zimmerman took the helicopter up for two flights totaling 1.2 hours. He set two records during the first flight in the 2,205- to 3,858-lb. class: a time-to-climb to 9,843 feet (3,000 meters) and a sustained altitude of 18,054 feet (5,503 meters). On the second flight, in the 1,002- to 2,205-lb. class, Zimmerman set time-to-climb records to 9,843 feet and 19,685 feet (6,000 meters),

along with a sustained altitude record of 26,447 feet (8,061 meters). "At the peak of the altitude attempt, Jack started coming down," recalled Cammack. "If he could climb a little more, we could get another record, so I said, 'Jack, you're not climbing — what's going on?' Zimmerman radioed, 'The damn motor quit.' He was at 28,000 feet. I said, 'Why don't you try to get it started again?' He said, 'I tried four times. Hot starts; battery shot now.' " After climbing for 11.3 minutes, followed by the failed engine restart, Zimmerman made an autorotation letdown. It was probably a record in itself — a long, slow glide back to earth.

"From the radar plot, we claimed a 'sustained altitude' record, even though the power was off," Cammack said. "On a power-on flight of about eleven minutes and a power-off flight of 12.6 minutes, Jack set four world records." There was no category for a "duration of power-off" flight record.

On April 6 and 7 came the most mammoth of all the record attempts: Hughes test pilot Bob Ferry flew the same YOH-6A nonstop, often at 10,000 feet, and as high as 24,000 feet as fuel burned off, from the Hughes plant in Culver City to Ormond Beach, Florida. (*See Coast to Coast...In That?*, p.114, *Vertical*, December 2014/January 2015.)

He touched down on the beach 15 hours and eight minutes after departing, having flown 3,562 kilometers (2,213 miles). As Ferry climbed from the cockpit, a boy asked him where he had come from. He replied, "From California." The boy responded, "In that?" Ferry's record for a coast-to-coast unrefueled helicopter flight has never been beaten.


After lowballing the price for the original OH-6A production contract and not winning the 121-helicopter supplemental

order, Howard Hughes bid against Bell for a 2,200-ship follow-on contract in 1967. The Army was in dire need of machines, as the air cavalry units in Vietnam were consuming an inordinate number of scout helicopters. The Hughes bid was \$2,350 per helicopter higher than Bell, and OH-58As soon replaced OH-6As. The Hughes machine gradually faded into history but, during the decades to come, the iconic design evolved into many successful variants, ranging from military Little Bird gunships to the commercial MD 500 series.

The fact that 14 of the flight records remain unbroken after 50 years is a tribute to the helicopter, the three Hughes employees on the ground, and the eight pilots who provided the Army with evidence to defend its scout helicopter program before Congress. "It worked because we didn't have committees," Cammack said of the dedicated crew. As for the record-breaking star of the show — ship 24213 — since its restoration, the helicopter resides in a warehouse at the U.S. Army Aviation Museum in Fort Rucker, Alabama.



Pilot Jack Schweibold poses next to ship 24213 during the record setting program at Edwards Air Force Base.
Jack Schweibold Photo



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