



SUPER STALLION HELICOPTER CRASH BLAMED ON ENGINE WITH HISTORY OF PROBLEMS

News / Airlines



A **helicopter** loaded with 17 Marines and eight Norfolk-based sailors approached the amphibious ship Mesa Verde in the Gulf of Aden a year ago.

A few of the sailors were brand new to the service, eagerly watching out hatches as they came in for their first landing aboard their first ship in the Navy.

The afternoon flight from a base in nearby Djibouti was more routine for the Marines on board; several of them were part of a maintenance crew sent ashore days earlier to replace a broken engine on the aircraft they were now flying in.

Nothing seemed unusual as the CH-53E **Super Stallion** descended to within 50 feet of the edge of the ship's flight deck.

Then, bang.

Smoke and red sparks shot inside the cabin. Glowing warning messages lit up the cockpit display. A member of the flight crew shouted "Power, power, power!" as the aircraft suddenly lost altitude and began to turn nose-down.

The two Marine pilots identified the source of the problem almost immediately: "No. 2 again!" one of them yelled, just before the aircraft's rotor blades clipped the flight deck and sent the massive helicopter tumbling into the sea.

The pilot was referring to one of the Super Stallion's three engines, the same turbo-shaft engine that had failed in flight days earlier, apparently after ingesting a foreign object. The military has spent millions of dollars trying to fix design problems with that particular engine after repeated mechanical failures over the past 30 years, some resulting in deadly crashes.

This time, the Marines and sailors were more fortunate. All 25 survived, and most sustained only minor injuries -- though some were knocked out when the helicopter flipped and slammed into the water. Some regained consciousness underwater; others awoke to find themselves trapped beneath baggage that hadn't been properly secured.

"What I do remember is finding myself pinned between the ramp and the airframe of the helicopter, and that is when I thought to myself that I am going to sink with the helicopter and that I was going to die, so I screamed out for help," one Marine later told investigators. "At the same time, I frantically wiggled myself free and fell into the cabin."

At least one sailor suffered a serious head injury and was sent to Germany for treatment, then home for additional care at Portsmouth Naval Medical Center.

Neither the pilots nor the maintenance crew who installed the replacement engine days before the crash were to blame, according to a Marine Corps investigation that was first reported in The Washington Post and obtained Thursday by The Virginian-Pilot and Investigative Reporting Program.

The report detailed the dramatic scene as sailors aboard the Mesa Verde scrambled to launch small boats to rescue the crew. But the investigation findings, released more than a year after the Sept. 1, 2014, crash, could not answer a key question: What caused the catastrophic failure of the Super Stallion's No. 2 engine?

"The mechanical cause will never be known because the aircraft was lost at sea," said Capt. Kendra Motz, a spokeswoman at Camp Lejeune, N.C., where the helicopter crew was based as part of the 22nd Marine Expeditionary Unit.

The crash investigation comes at a time of increased scrutiny of Super Stallion and MH-53E Sea Dragon helicopters, a nearly identical Navy variant that flies out of Norfolk Naval Station. Earlier this year, after a report by The Pilot, IRP and NBC News, officials ordered intensive inspections to find and replace chafing fuel lines and wires in every Super Stallion and Sea Dragon, the same mechanical defect that led to a deadly crash off the coast of Virginia last year.

The inspections have taken months, with a few dozen of the 177 helicopters still awaiting repairs. The wiring problems prevented a Marine squadron from deploying to Nepal earlier this year, leaving earthquake relief efforts to aircraft with smaller payloads, including UH-1Y Hueys.

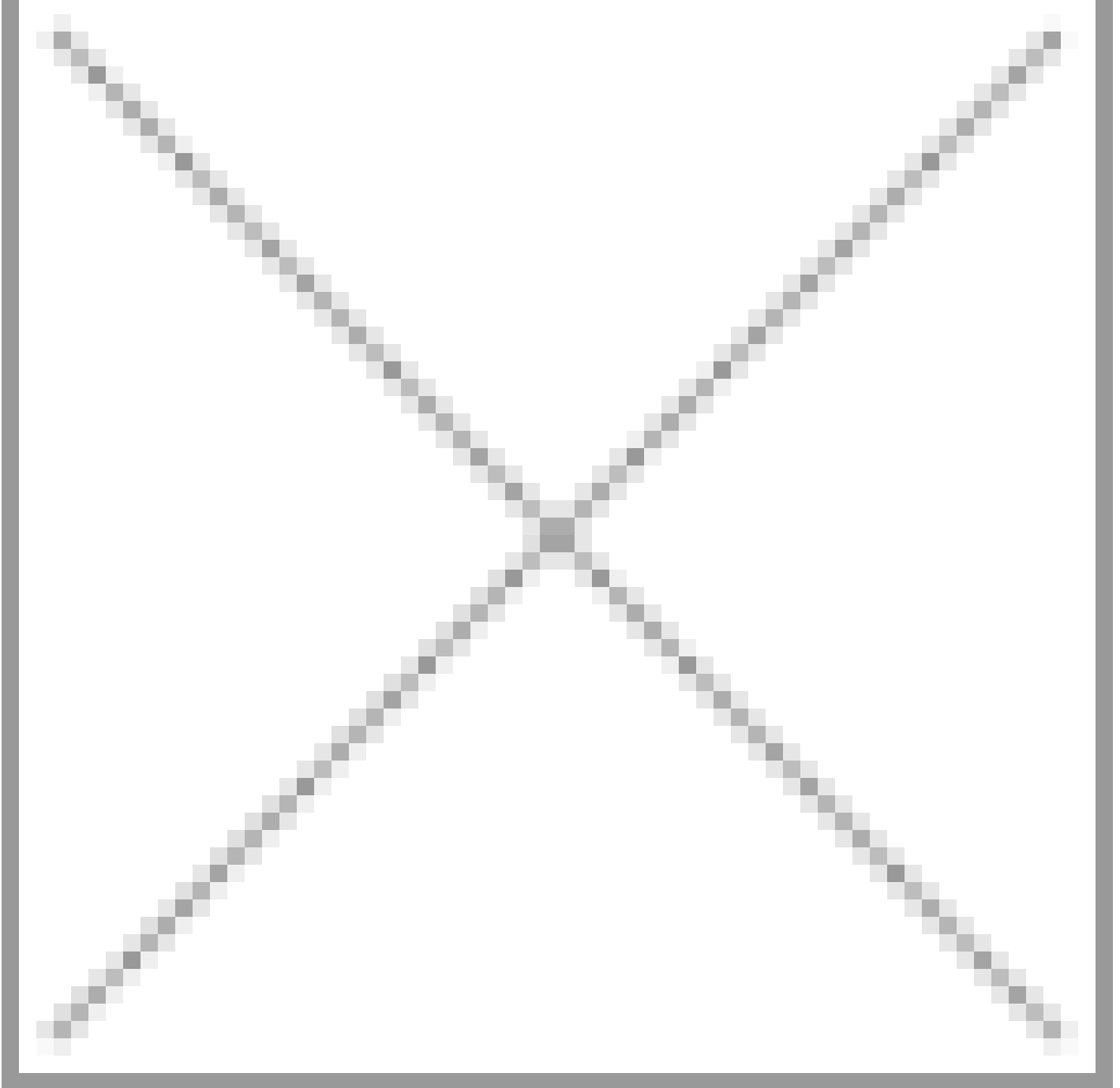
And a month ago, a Marine based in Hampton Roads, 31-year-old Staff Sgt. Jonathan Lewis, was killed, and nearly a dozen others were injured when a Super Stallion experienced what officials called a "hard landing" during a nighttime training mission at Camp Lejeune. The tail section of the aircraft broke off, either before or after impact, according to sources. That incident remains under investigation.

Motz, the Marines Corps spokeswoman, called the crash in the Gulf of Aden a "near-tragedy" and praised the crew for acting quickly to survive the ordeal.

"Due to the high-quality survival training of our personnel, their physical fitness and their ability to think quickly in stressful situations, there was no loss of life," Motz wrote in an email. "By its very nature, there will always be inherent risk in aviation. However, the Marine Corps utilizes highly reliable aircraft, extensively trains pilots and aircrew, conducts exhaustive maintenance, and consistently aims to place safeguards and precautions to ensure a high degree of aviation safety."

The Marine Corps investigation found that some maintenance decisions before the mishap "deviated from established standards," Motz said, but the repair work was ultimately not to blame for the engine failure, and nobody was disciplined in the aftermath.

The Super Stallion and Sea Dragon -- the military's most powerful heavy-lift helicopters -- are among the most maintenance-intensive aircraft in the fleet, requiring more than 35 hours of work on the ground for every hour in the sky. Having entered service in the early 1980s, they're also among the oldest.



Over the years, No. 2 engine failures have been a persistent problem. In response, the military has hired the aircraft's manufacturer, Sikorsky Aircraft Corp., a half dozen times since the early 1990s to study problems with its design.

A primary problem has involved overheating and increased risk of fire in the engine compartment due to exhaust backflow. Because the Super Stallion in this incident was never recovered -- it sank more than 4,000 feet in the Gulf of Aden, and the cost to retrieve it would have been about \$8 million -- it's not known whether the engine failure was related to past problems.

The majority of Super Stallion and Sea Dragon engine failures are due to foreign-object damage, said Kelly Burdick, a spokeswoman for Naval Air Systems Command, the Maryland-based office that oversees Navy and Marine Corps aircraft programs.

In this case, the engine failed "at the worst time in the flight profile, just prior to landing on the

ship," Burdick said. "Any engine failure in this regime would have led to similar results."

In response to past engine failures, the military several years ago equipped the helicopters with sensors to warn pilots when the No. 2 engine is overheating, in theory giving them time to shut it down and land.

A spokesman for Sikorsky declined to comment for this story, deferring questions to the military.

Frank Fleming, a New York aviation lawyer and former Marine helicopter pilot, represented families after a No. 2 engine failure led to a deadly crash in Italy in 2002. Fleming flew an older version of the CH-53 in Vietnam. He said he's been unimpressed with the military's efforts in recent years to ensure the safety of the aging Super Stallions and Sea Dragons.

"When I was a flight student down at Pensacola many years ago, we were told that the Department of the Navy had done everything humanly possible to provide us with the safest aircraft known to man," Fleming said Thursday. "Maybe they can't afford that standard any longer."

The Super Stallion is primarily used to move cargo and Marines. The Sea Dragon is used to sweep for underwater mines. Both are slated to remain in service through at least 2025.

This story was reported in partnership with the Investigative Reporting Program at the University of California, Berkeley, as part of an ongoing collaboration. Paladino in Berkeley, and Hixenbaugh in Norfolk, are journalism fellows with IRP.

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