

# Marine Corps Releases Command Investigation Into the MV-22B Osprey Mishap in California on June 8, 2022



PACIFIC OCEAN (Dec. 6, 2022) – An MV-22 Osprey tiltrotor aircraft assigned to Marine Medium Tiltrotor Squadron (VMM) 364 takes off from the flight deck of amphibious assault carrier USS Tripoli (LHA 7).

Statement from the V-22 Joint Program Office (PMA-275)

On June 8, 2022, five U.S. Marines from the “Purple Foxes” of Marine Medium Tiltrotor Squadron 364 (VMM-364) lost their lives during an aviation mishap onboard an MV-22 Osprey. The investigation into the mishap’s cause is complete, and Marine Corps leaders have shared the results with the families.

The investigation revealed no error on the part of the pilots

and aircrew, and confirmed no maintenance errors led to the mishap. It was determined the pilots and aircrew were conducting routine flight operations in accordance with applicable regulations when a catastrophic, unpreventable and unanticipated mechanical failure occurred.

The investigation revealed the cause of the mishap was a dual hard clutch engagement (HCE) which created a Single Engine and Interconnect Drive System (Single Engine/ICDS) failure; the failure resulted in a catastrophic loss of thrust on the right-hand (RH) proprotor. The degraded drivetrain caused by the dual HCE event and subsequent Single Engine/ICDS failure created an unrecoverable departure from controlled flight, resulting in the tragic crash that occurred on June 8, 2022.

The V-22 Joint Program Office (PMA-275) continues to take decisive actions to address the HCE mechanical challenge. Since 2010, there have been numerous actions associated with defining, mitigating or eliminating HCEs. The results of this investigation have further driven efforts to mitigate the HCE phenomenon, identify root cause and prevent it from occurring.

“Our latest research and mitigation efforts produced several new findings that significantly increased our understanding of the HCE phenomenon,” said Col. Brian Taylor, PMA-275 program manager. “While definitive root cause for all HCE events has not yet been identified, we are using this new information to implement solutions designed to reduce the likelihood of an HCE event and increase aircrew safety.”

Through a combination of efforts, including the recent input quill assembly replacement bulletin in February 2023, the risk of a HCE event occurring was reduced by greater than 99 percent. The V-22 community executed 22,258 flight hours between February 3, 2023 and July 19, 2023, with zero HCE events.

“The completion of this investigation does not close the HCE effort within PMA-275,” Taylor added. “The implemented IQA life limit, which reduced overall V-22 HCE risk by greater than 99 percent, was not a result of this investigation but is certainly reinforced by its findings.”

“The loss of these five Marines is tragic and, while there will always be inherent risk in military aviation, we are working tirelessly to identify and mitigate risk across the V-22 platform; we are committed to the safety of the Marines, Airmen, Sailors, and the Japan Ground Self Defense Force, that fly this platform every day,” he said.

#### HQMC Statement:

The investigation into the cause of the Marine Medium Tiltrotor Squadron 364, 3rd Marine Aircraft Wing MV-22B Osprey mishap in Glamis, California, on June 8, 2022, is complete. We have provided the results of the investigation to the families of our fallen Marines and provided all available resources to them during this difficult time.

The loss of Capt. Nicholas P. Losapio, Capt. John J. Sax, Cpl. Nathan E. Carlson, Cpl. Seth D. Rasmuson, and Lance Cpl. Evan A. Strickland continues to be felt across the Marine Corps.

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It is clear from the investigation that there was no error on the part of the pilots and aircrew and nothing they could have done to anticipate or prevent this mishap. They were conducting routine flight operations in accordance with

applicable regulations when this catastrophic and unanticipated mechanical failure occurred. The investigation also found there was no maintenance error on the part of the team whose job it was to prepare the aircraft to fly on the day of the flight.

The Marine Corps has taken the following actions in coordination with the original equipment manufacturer: design and field a new Proprotor Gearbox Input Quill Assembly that mitigates unintentional clutch disengagements and hard clutch engagement events; improve MV-22B drivetrain and flight control system software, drivetrain component material strength, and inspection requirements; and integrate a crash survivable, high-temperature, fire-resistant flight data recorder into all MV-22B aircraft. All USMC MV-22B commands will also present this investigation to pilots and aircrew to discuss the hazards of hard clutch engagements and its potential to cause a Single Engine/Interconnect Drive System failure compound emergency.

On February 3, 2023, the Marine Corps, Navy, and Air Force Special Operations Command issued Dynamic Component Bulletin 63 which directed the replacement of all input quill assemblies over a predetermined flight hour threshold at the recommendation of the V-22 Joint Program Office. Replacing the input quill assembly at this threshold significantly reduces the likelihood of a Hard Clutch Engagement occurring by 99 percent, based on the data.

We will never forget Capt. Nicholas P. Losapio, Capt. John J. Sax, Cpl. Nathan E. Carlson, Cpl. Seth D. Rasmuson, and Lance Cpl. Evan A. Strickland, and their loved ones, as we continue with our quest to provide the safest, most lethal platforms to the men and women who fly them.

The redacted command investigation is available to the public via the Marine Corps Freedom of Information Act website: [hqmc.marines.mil/Agencies/USMC-FOIA/FRR/](https://hqmc.marines.mil/Agencies/USMC-FOIA/FRR/).