

**EXECUTIVE SUMMARY**  
**AIRCRAFT ACCIDENT INVESTIGATION**

**CV-22B, T/N 06-0031**  
**NEAR QALAT, AFGHANISTAN**  
**9 APRIL 2010 (L)**

On 9 April 2010, the mishap aircraft (MA), a CV-22B, T/N 06-0031, impacted the ground at 0039L, near Qalat, Afghanistan. The mishap pilot, mishap flight engineer, and two passengers died in the mishap. The mishap copilot, mishap tail scanner, and the remaining 14 passengers sustained various degrees of injuries. Based on the crash location, the deployed commanders decided the MA should be destroyed in place. The total loss for the MA, crew equipment, and ammunition totaled more than \$87 million.

The MA took off as the lead aircraft of a three-ship formation from a forward operating base on a 14 minute route to a selected landing zone (LZ). The mishap crew anticipated good weather based on a regional forecast that included their main operating base. Instead, they encountered an approximately 17 knot tailwind within 10 nautical miles (nm) of the LZ. The MP flew a nonstandard approach profile to the LZ. He started the deceleration maneuver one half mile late. While converting to the helicopter mode, the MA was flying more than twice as fast as the planned profile. In the last seconds of flight, the MA developed an unanticipated rapid rate of descent and impacted the ground at 75 knots ground speed and 0.23 nm short of the intended LZ. At impact, the MA had the landing gear down and locked and the nacelle configuration was nearly vertical. The MA rolled on its landing gear across the sand for approximately 45 feet leaving landing gear marks indicative of a nearly perfect roll-on landing. Soon after touchdown, the nose gear collapsed and the nose section impacted a two-foot deep, natural drainage ditch, causing the MA to flip tail over nose. The left wing broke off and caught on fire. The right wing and tail section also separated from the fuselage, which came to rest upside down.

The Board President was unable to determine, by clear and convincing evidence, the cause of this mishap. The Board President ruled out multiple causes to include enemy action, brownout, vortex ring state, mid-air collision, loss of hydraulic system, electrical failure, drive shaft failure, swashplate actuator mount failure, flight control failure, thrust control lever (TCL) rigging, avionics failure, and crew physiological events.

The Board President determined by a preponderance of the evidence that ten factors substantially contributed to the mishap. Substantially contributing factors play an important role, either directly or indirectly, in the sequence of events and are supported by the greater weight of credible evidence. The ten substantially contributing factors were: inadequate weather planning, a poorly executed low visibility approach, a tailwind, a challenging visual environment, the mishap crew's task saturation, the mishap copilot's distraction, the mishap copilot's negative transfer from a behavior learned in a previous aircraft, the mishap crew's pressing to succeed in the first combat mission of their deployment, an unanticipated high rate of descent and engine power loss. The Flight Incident Recorder, the Vibration Structural Life and Engine Diagnostics control unit and the right engine were never recovered for analysis.

**Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from the accident, nor may such information be considered an admission of liability of the United States or by any person referred to in those conclusions or statements.**

# **ADDENDUM EXECUTIVE SUMMARY**

## **AIRCRAFT ACCIDENT INVESTIGATION CV-22B, T/N 06-0031 NEAR QALAT, AFGHANISTAN 9 APRIL 2010 (L)**

On 9 April 2010, the mishap aircraft (MA), a CV-22B, T/N 06-0031, impacted the ground at 0039L, near Qalat, Afghanistan. The mishap pilot, mishap flight engineer, and two passengers died in the mishap. The mishap copilot, mishap tail scanner, and the remaining 14 passengers sustained various degrees of injuries.

The Board President was unable to determine, by clear and convincing evidence, the cause of this mishap. The Board President determined by a preponderance of the evidence that ten factors substantially contributed to the mishap. One of those substantially contributing factors was engine power loss.

Following submission of the Accident Investigation Board report on 25 August 2010, the Convening Authority received a structural evaluation and an independent assessment of the mishap sequence from Naval Air Systems Command. Additionally, the Convening Authority wrote a statement analyzing a video of the mishap, the data transfer module recovered from the MA, and the proprotor blade strikes on the ground. On 4 October 2010, the Convening Authority approved the AIB report with comments. The convening authority disagreed that engine power loss was supported by the greater weight of credible evidence.

On 15 November 2010, the Air Force Chief of Staff reopened the accident investigation. From 19 to 21 November 2010, the Board President considered the information prepared after submission of the original report. The Board President also consulted with the imagery analyst who performed the initial video analysis for the Accident Investigation Board. The imagery analyst used a newly available resource to assess the video and accurately measure distance and MA's air speed. The Board President determined the MA's speed on initial impact was 80 knots ground speed instead of the approximately 75 knots ground speed in the original report.

After considering the additional information, the Board President was still unable to determine a cause by clear and convincing evidence. He considered the speed at initial impact, the aircraft's deceleration rate on the ground during the mishap sequence, and the spacing of the blade strikes on the ground, and determined that the greater weight of credible evidence supports engine power loss as a substantially contributing factor. The Board President's original conclusion that ten factors substantially contributed to the mishap remained unchanged.

**Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from the accident, nor may such information be considered an admission of liability of the United States or by any person referred to in those conclusions or statements.**