

## EXECUTIVE SUMMARY

### ABBREVIATED AIRCRAFT ACCIDENT INVESTIGATION MQ-1B T/N 08-3228, Republic of Djibouti 14 JANUARY 2011

On 14 January 2011, at 1617 Zulu (Z) time, the mishap remotely piloted aircraft (MRPA), a MQ-1B Predator, tail number (T/N) 08-3228, crashed in the Gulf of Aden while returning to an undisclosed base approximately nine and a half hours after takeoff. Destruction of the MRPA with two missiles was assessed to be a financial loss of \$4,120,000. No injuries, damage to other government property, or damage to private property occurred as a result of the mishap.

The aircraft belonged to the 432d Wing at Creech Air Force Base (AFB), Nevada, but was deployed at the time in support of Operation HORN OF AFRICA. The crew flying the aircraft at the time of the mishap was from the 3rd Special Operations Squadron at Cannon AFB. Maintenance support was provided by the 49th Aircraft Maintenance Squadron, Holloman AFB.

After normal pre-flight checks, the MRPA taxied and departed a Forward Operating Base (FOB) at 0702Z. Handover procedures from the Launch and Recovery Element to the first Mission Control Element (MCE) were uneventful. At 1330Z the MRPA oil pressure became erratic with momentary deviations below 30 pounds per square inch with no other engine abnormalities. The MCE ran appropriate procedures and elected to return to the FOB. On the return leg no further abnormal engine indications were observed and the MCE crew swapped out with the mishap crew (MC). The MC began a descent from the cruise altitude into the approach control structure approximately 144 miles from the FOB. During an intermediate level off the MC noticed erratic and low oil pressure indications which prompted the MC to run the low oil pressure procedures. The MC then descended the MRPA to 12,500 feet, leveled off for approximately 25 minutes until a piston, piston ring, valve, valve spring, push-rod, or rocker-arm in cylinder #3 experienced a catastrophic failure. The cylinder head and piston were likely heavily damaged and pumped engine oil out of the cylinder. The wind-milling engine continued driving the oil pump, which pumped the remaining oil out of the tank until the oil tank was empty and the engine seized. The MRPA glided approximately 30 miles before making a forced water-landing three miles off-shore. The MRPA was a total loss and not recovered.

The Accident Investigation Board President determined by clear and convincing evidence that the cause of the mishap was engine failure. Specifically, the catastrophic failure of the #3 cylinder resulted in the depletion of the oil system and subsequent engine seizure. The Board President was not able to determine the cause of the cylinder failure since the MRPA's engine was not recovered.

*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.*