

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION MQ-1B, T/N 00-3072, CREECH AIR FORCE BASE, NEVADA 19 SEPTEMBER 2010

On 19 September 2010, at 2018 Zulu (Z) time, the mishap remotely piloted aircraft (MRPA), a MQ-1B Predator, tail number 00-3072, crashed in uninhabited mountainous terrain approximately 20 miles south of Kabul, Afghanistan, approximately three hours after takeoff. Destruction of the MRPA, one hellfire missile, and two missile rails were assessed to be a financial loss of \$3,800,278.00. No injuries, damage to other government, or damage to private property occurred as a result of the mishap.

After normal maintenance and pre-flight checks, the MRPA taxied and departed a Forward Operating Base (FOB) in Afghanistan at 1708Z. Approximately 8 minutes into the flight, the MRPA's turbo oil temperature rose above 285 degrees Fahrenheit (°F) and into the caution range. After accomplishing the applicable checklist procedures requiring activation of the cooling fan, the turbo oil temperature dropped below 285 °F and within normal operating limits. At 1755Z and nearing cruising altitude, the first Mission Control Element (MCE) crew turned off the cooling fan which resulted in the turbo oil temperature rising back into the caution range. At the same time, the oil quantity began a steady decrease until stabilizing at 65% one hour and 20 minutes into the flight. This frequently occurs in MQ-1Bs due to the design of the oil system and a condition called "oil foaming." After again turning on power to the cooling fan, the first MCE crew initiated the process of returning the MRPA to home station based on the high turbo oil temperature. Almost immediately following this decision, the crew reversed their course of action at 1820Z, when the turbo oil temperature dropped within normal limits, allowing them to continue the mission.

At 1900Z, the second MCE crew or mishap crew (MC) took control of the MRPA from the first crew and were briefed to monitor oil level indications. The MRPA operated at normal operating limits until 1953Z when the oil quantity rapidly declined until reaching 0% volume at 1956Z, causing an engine failure. As the oil quantity decreased below 60%, the MC immediately pointed the MRPA toward its home station. Soon after, the oil level reached 0% volume at 1956Z, causing an engine failure. At 2001Z, the engine momentarily restarted for two minutes prior to again failing and seizing for the remainder of the flight. The MRPA was beyond glide distance to a safe landing location and was subsequently crashed in a remote location. Within hours, U.S. military personnel made contact with the crash site, gathered sensitive equipment, and destroyed the remaining wreckage.

The Accident Investigation Board (AIB) President determined by clear and convincing evidence that the cause of the mishap was an oil system malfunction which caused a catastrophic oil leak and subsequent engine failure. The AIB President was not able to determine the cause of the oil system malfunction since the MRPA's engine was unsalvageable from the crash site.

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.