

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION MQ-1B, T/N 01-3074, JALALABAD, AFGHANISTAN 1 MAY 2011

On 1 May 2011, at approximately 1650 zulu (Z) time, the mishap remotely piloted aircraft (MRPA), a MQ-1B Predator, tail number 01-3074, operated by the 18th Reconnaissance Squadron (RS) from Creech AFB, crashed 2 kilometers (KM) (direction unknown) outside a Forward Operating Base (FOB) after completing 18 hours of a tasked surveillance mission. The crash site was remote desert terrain close to the FOB, so US Army Soldiers were able to retrieve the salvageable MRPA. The MRPA was intact, but the wings were cut off by the Soldiers retrieving it in order to fit it on their vehicles and return it to their FOB. There were no injuries and there was no damage to other government or private property.

After normal maintenance and pre-flight checks, the MRPA taxied and departed from Jalalabad Air Base at approximately 2250Z on 30 Apr 2011. At 1500Z on 1 May 11, the mishap crew (MC) was working with ground forces in Afghanistan when they encountered weather that prevented them staying on station. The MC coordinated with air traffic control to work another operating area and encountered deteriorating weather conditions and severe clear icing on the MRPA. The MC altered course to get out of the weather and icing conditions. During this transit time the MC received numerous indications of maintenance anomalies (high turbo oil temperature, oil pressure and manifold pressure) for the MRPA. The MC attempted to alleviate the high turbo oil temperature by running the appropriate emergency checklists. The MC utilized the necessary emergency checklists but the high turbo oil temperature indications continued and the MRPA started an insidious descent rate of 200 to 400 feet per minute. The MRPA never maintained level flight again and crashed in a remote area of Afghanistan at approximately 1650Z.

The Accident Investigation Board (AIB) President determined by clear and convincing evidence that the cause of the mishap was due to prop thrust bearing failure. The failure of the prop thrust bearing contaminated the oil system with metal shavings and particulate that clogged the oil filter, resulting in a lack of adequate oil to the turbocharger and engine. Due to the lack of oil flowing through the system, the MRPA turbocharger eventually failed as well. The MRPA engine was unable to produce adequate thrust with a failed turbocharger and began to descend at a rate of 200 to 400 feet per minute. The MRPA engine developed oil pressure and manifold pressure (MAP) indications that were abnormal due to the oil system contamination. Eventually the MRPA engine experienced excessive heat damage and deterioration which caused a cylinder skirt to crack and destroyed connecting rod #2 further limiting the ability of the MRPA to maintain level flight. The MC realized the MRPA could not return to base or fly to an emergency divert, so the MC controlled the MRPA away from known populated areas. The MRPA crashed when it impacted the terrain. The estimated loss is valued at \$2.02M.

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.