

EXECUTIVE SUMMARY  
AIRCRAFT ACCIDENT INVESTIGATION  
MQ-1L PREDATOR S/N 03-3124  
DEPLOYED LOCATION  
23 FEBRUARY 2007

On 23 February 2007, at 0804 local time, an MQ-1B PREDATOR, S/N 03-3124, 15<sup>th</sup> Reconnaissance Squadron, Creech Air Force Base, Nevada, crashed during a reconnaissance mission while operating from a deployed location in the CENTCOM AOR. Upon ground impact, the unmanned aerial vehicle (UAV) was destroyed with losses valued at \$3,742,655. No one was injured in the accident. Other than the mishap aircraft, there was no damage to government or private property. Media interest was minimal.

Approximately 2.4 hours into a 20 hour sortie, the MA experienced a fuel transfer problem and an unrelated failure of the Variable Pitch Propeller (VPP) servo. The fuel transfer problem ultimately led to the discovery of the VPP failure. Approximately 7.8 hours into the sortie, while attempting to troubleshoot the VPP problem, the mishap aircraft (MA) experienced a partial loss of engine power and began a slow descent. The cause of the power loss could not be corrected and the MA crashed at an isolated mountainside location. The wreckage was not recovered due to the remote location of the crash site. Classified imagery from another Predator confirmed the destruction of the MA.

There is clear and convincing evidence the mishap was caused by a failure of the VPP servo motor. Since the wreckage was not retrievable, the investigation centered on analysis of recorded flight and system data and witness testimony, which plainly revealed an open circuit within the VPP servo motor causing it to fail. The failed VPP servo motor drives a mechanical assembly to adjust the pitch of the propeller. Likely causes of the open circuit failure include a broken wire, a brush not making contact, or the supply voltage not getting to the VPP servo motor. However, feedback from the VPP servo motor continued after initial failure indications suggesting power was still being supplied to the motor. The MA's engine continued to produce sufficient power for an extended period after the initial failure with the propeller fixed at a pitch angle suitable for existing flight conditions. However, while troubleshooting the VPP servo failure, the propeller was driven to an excessively coarse pitch angle for current flight conditions. This excessive propeller pitch angle then slowed the MA's engine and resulted in insufficient power for level flight. As supported by clear and convincing evidence, the mishap crew was unable to obtain power sufficient for level flight. The MA was crashed in an isolated mountainside location and was destroyed.

*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 an aircraft accident, nor may such information be considered an admission of liability by the United States or by any person referred to in those conclusions or statements.*