

# **EXECUTIVE SUMMARY**

## **AIRCRAFT ACCIDENT INVESTIGATION**

### **MQ-9, T/N 07-4032, CREECH AIR FORCE BASE, NEVADA**

**20 MARCH 2009**

On 20 March 2009, at approximately 1605 Mountain Daylight Time (MDT), the mishap remotely-piloted aircraft (MRPA), a MQ-9, T/N 07-4032, assigned to the 42d Attack Squadron, 432d Wing, Creech Air Force Base (AFB), Nevada, made a forced landing in the National Training Center (NTC) range complex north of Fort Irwin, California. The MRPA sustained significant damage upon touch-down and roll-out. Repair cost is estimated to be \$3,929,647.30. The accident caused no ground injuries or damage to private property.

The mishap flight was a routine training mission that launched from Creech AFB. Shortly after takeoff, a training crew in a ground control station at Holloman AFB took control of the MRPA and directed it to the NTC and Restricted Area R-2502, the airspace scheduled for the day's training activities.

The first five hours of the sortie were uneventful. At approximately 1536 MDT, mishap pilot 1, a student pilot, began receiving engine malfunction warnings on his system displays. Six minutes after the first warning, the MRPA lost engine power and torque. Mishap pilot 2 (MP2), a MQ-9 instructor pilot experienced in launch and recovery, took over the pilot controls to execute an emergency landing via satellite data-link. The MRPA was beyond glide range for Creech AFB, its initially planned landing location. MP2 selected a simulated airfield used for air-to-ground targeting training near Leach Lake in R-2502 as the emergency landing site. The airfield did not provide conditions for smoothly landing the MRPA, but it satisfied the primary requirement of avoiding collateral damage. MP2 flew the approach using above ground level (AGL) information derived by the MRPA's processor based on a preset elevation at Creech AFB. The elevation at the Leach Lake simulated airfield was approximately 1,000 feet lower. This resulted in MP2 flying the approach above his planned glide path. The MRPA touched down on uneven desert terrain west of the airfield target complex. Its structure was heavily damaged as it travelled across the rough terrain in the area.

The Accident Investigation Board (AIB) President determined by clear and convincing evidence that the cause of the mishap was an improperly assembled oil system temperature control valve. The incorrect assembly caused the valve to fail in such a way that there was a severe oil flow imbalance which resulted in engine failure. The engine failure necessitated the emergency landing procedure. Also, the AIB President determined that the Leach Lake airfield met requirements in the MQ-9 flight manual for an appropriate emergency landing location with the engine out and with control via satellite data-link. Finally, the AIB President determined if the MRPA had landed on the simulated airfield, the MRPA would most likely have sustained a similar degree of damage.

**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.**