

## EXECUTIVE SUMMARY

### AIRCRAFT ACCIDENT INVESTIGATION

MQ-1L, T/N 04-003127  
BALAD AIR BASE, IRAQ  
31 JULY 2007

On 31 July 2007, at 1557 Zulu (Z), or Greenwich Mean Time, an MQ-1L Predator Remotely Piloted Aircraft (RPA), tail number 04-003127, impacted an uninhabited area approximately 30 miles west of Balad Air Base (AB), Iraq. The mishap RPA (MRPA) was forward deployed to Balad AB from the 15th Reconnaissance Squadron (15 RS), 432d Wing, Creech Air Force Base, Nevada, and launched by a crew from the 46th Expeditionary Reconnaissance Squadron. Crews from the 196 RS then controlled the MRPA via satellite links from a Ground Control Station at March Air Reserve Base, California. The 196 RS is assigned to the 163d Reconnaissance Wing, California Air National Guard. The MRPA was on a mission in support of Operation IRAQI FREEDOM.

All maintenance and preflight activities were normal. Approximately 10 hours after an uneventful launch, the Mishap Crew (MC), consisting of the Mishap Pilot (MP), Mishap Instructor Pilot (MIP) and Mishap Sensor Operator (MSO), assumed control of the MRPA after a changeover briefing. The MC was current and qualified to conduct the mission.

Forty-five minutes after assuming control, the MC detected low exhaust temperature readings during a routine operations check. They quickly determined engine operations had degraded and level flight was no longer sustainable. The MC applied the engine failure emergency procedures to restart the engine without success. After deciding the MRPA did not have sufficient glide capability to land, the MC was directed to crash the aircraft and maximize its destruction. Fighter aircraft destroyed the wreckage for security purposes. Damage to the MRPA totaled \$3,828,000. There were no deaths, injuries or property damage associated with the mishap.

The Accident Investigation Board President determined, by clear and convincing evidence, the primary cause of this mishap was a partial failure of the manifold air pressure (MAP) sensor selected to control the engine. The sensor's erroneous output decreased fuel flow to the engine, terminating normal engine operations. The wreckage was destroyed in place and none was salvaged; therefore, no determination could be made regarding the specific nature of the failure.

The Board President found sufficient evidence to conclude the "Engine Failure" checklist and the lack of a partial MAP sensor failure warning were substantially contributing factors in this mishap. The checklist did not suggest MAP sensor failure as a possible cause of engine failure nor did it cross-reference an alternate checklist identifying this possibility. Additionally, the aircraft did not have the capability to provide visual or aural notification to the crew in the event of partial MAP sensor failure.

**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.**