EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION

MQ-1B, "PREDATOR," S/N 05-03155

AT A DEPLOYED LOCATION ON 17 DECEMBER 2007

On 17 December 2007, at approximately 1035 zulu (z), an MQ-1B, Predator, S/N 05-03155, crashed at a forward operating location. The MQ-1B Predator aircraft, S/N 05-03155, assigned to the 3rd Special Operations Squadron (3 SOS), 27th Special Operations Wing, Cannon AFB, NM, impacted the terrain in a forward location in support of Operation Iraqi Freedom (OIF). There were no reported injuries, fatalities, damage to private property, or media interest. The aircraft was damaged beyond economic repair and the loss is valued at $3,849,481.

The mishap aircraft (MA) was flying an operational mission in support of OIF. Approximately 6.5 hours into the scheduled 9.5 hour flight, the Ku band command and receive link between the aircraft and the ground control station (GCS) was unexpectedly severed. The MA's transponder switched to its emergency mission code, indicating that it was accomplishing its lost link profile. The aircraft departed controlled flight and crashed at approximately 1035z.

The aircraft Ku-Band SATCOM datalink was lost prior to any indication of malfunction of the aircraft. The proximity of the wreckage to the last known aircraft down linked location and the extent of the debris field suggests that the aircraft most likely broke apart in the air near the lost link location. Examination of the air traffic control radar reports and recovered hardware indicate the aircraft broke apart from excessive aerodynamic loading.

There is clear and convincing evidence that the cause of this mishap was a short circuit of the alternator or one of the alternator power cables. A major power system failure in the alternators accounts for the loss of SATCOM links, failure to follow the lost link emergency mission, failure of the aircraft tails to command a full nose up configuration, and a loss of control of sufficient duration to achieve critical airspeed resulting in the observed in-flight breakup.

None of the recovered components showed evidence of damage due to shrapnel or projectiles and the military ground unit in the vicinity of the lost link event did not see or hear any enemy fires directed at the MA. A lost link event, standing alone, would have resulted in the aircraft performing its lost link mission, being recovered and landing safely. An aircraft control system failure would have resulted in the aircraft tails moving to a full nose-up position and a porpoise-like stall impact. The launch and recovery ground control stations were not configured to allow an unintentional ground control station uplink.