

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION

QF-4E, S/N 71-1083 (AF-257)
TYNDALL AIR FORCE BASE, FLORIDA
25 APRIL 2006

On 25 April 2006, at 0916 local time (L), a QF-4E unmanned drone, serial number (S/N) 71-1083 (AF-257), pitched up without any warning and departed controlled flight resulting in a command destruct. The mishap drone (MD) was assigned to the 82d Aerial Targets Squadron, 53d Weapons Evaluation Group, 53d Wing, Eglin AFB, Florida. The MD was destroyed with the loss valued at approximately \$2.45 million. No personnel injuries or damage to private property resulted from the accident.

The MD was launched as part of a two-ship unmanned drone formation supporting an F-15C missile test and evaluation program. Approximately three minutes after the missile completely missed the MD; the drone violently pitched up without input from the controller and became unresponsive. The drone rapidly lost airspeed and departed controlled flight three seconds later while at an approximate altitude of 15,000 feet. Attempts to recover the MD to normal flight were unsuccessful. As the MD passed below 6,000 feet altitude, the drone mission commander started the sequence to command the MD to self destruct. As the MD passed below 2,000 feet, the MD was destroyed in the air and impacted the ocean in a remote area of the W-151 Gulf Range Complex, approximately 88 miles south of Tyndall AFB. At the time the MD self destructed, the nearest surface vessel on the water was over 9 nautical miles away.

There is clear and convincing evidence the mishap was caused by a malfunction in the Automatic Flight Control System (AFCS) Electro-Hydraulic Stab path of the MD. Analysis of the telemetry of flight control positions shows that the stab, sometime after takeoff, began to respond abnormally to autopilot Electro-Hydraulic (EH) commands. The pitch divergence gradually worsened finally resulting in an un-commanded full nose up stab, a corresponding rapid loss of airspeed, departure from controlled flight and entry into an unrecoverable flat spin. Out-of-Control procedures were appropriately executed by the MC, and there is no evidence that any alternate course of action might have affected a recovery. An appropriate decision was made to command destruction the MD before water impact. The Board found no evidence that the mishap drone controller or any other person in operations or maintenance contributed in any way to the loss of this drone.

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.