

EXECUTIVE SUMMARY

At 08:18:44 CDT, 25 October 2001, aircraft S/N 67-0337 impacted approximately 4,000 feet west of the drone runway 18/36 on Tyndall AFB, Florida. The mishap drone was a QF-4E owned by the 82nd Aerial Targets Squadron, Tyndall AFB. Impact occurred in a heavily wooded, unpopulated area totally within the confines of Tyndall AFB. Due to impact with multiple trees and subsequently the ground, the aircraft sustained catastrophic damage to the airframe and all of its components. There were no injuries or deaths and no claims against the government for damage to private property.

The mishap flight was an unmanned mission. The aircraft was being launched as a target for a Multi-System Improvement Program (MSIP) mission to assist in operational testing of various aircraft systems and munitions. Using an uplink/downlink telemetry system, the drone was initially launched in Automatic Takeoff (ATO) mode. Once this mode is selected, takeoff occurs automatically without controller inputs. The ATO failed to progress normally, so the primary drone controller attempted to take control of the drone manually and fly it off the runway.

The primary cause of this accident, supported by a detailed analysis of downloaded telemetry data, was a failure within the primary attitude reference system, the AN/AJB-7. Among other things, the AN/AJB-7 provides primary attitude references to the controller's computer screen. This allows the controller to monitor the drone's performance and, when needed, fly the drone manually. At rotation speed of 160 knots, the attitude displayed on the primary drone controller's monitor indicated a normal takeoff attitude of twelve degrees nose high. Post-mishap analysis of the telemetry data revealed that the actual attitude of the drone was four degrees less than that indicated by the AN/AJB-7. Because of this discrepancy, the controller thought the takeoff was progressing normally when in reality the mishap drone did not rotate enough to lift off the runway. By the time the mishap drone controller recognized the failure to rotate, the aircraft was travelling at a speed of over 250 knots. In an effort to get the drone airborne, the controller went to manual control and, due to the high airspeed, commanded an excessive nose up pitch rate. Several human factors, including the lack of "seat of the pants" feedback to the drone controller and the arrangement of console monitors and controls, substantially contributed to the excessive nose up command.

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.