

EXECUTIVE SUMMARY

On 13 December 2005, T-38C, tail # 65-0333, assigned to the 87th Flying Training Squadron (FTS), 47th Flying Training Wing (FTW), Laughlin Air Force Base (LAFB) TX, crashed after impacting a Black Vulture. The crash occurred at 1537 CST on ranch land 5 miles East of Brackettville, TX. The mishap aircraft (MA) was destroyed and the Mishap Student Pilot (MSP) suffered no injuries. The Mishap Instructor Pilot (MIP) suffered major injuries consisting of fractured thoracic and lumbar vertebrae, foot, and rib and burns involving 17 percent of his body.

The mishap occurred during a Specialized Undergraduate Pilot Training low-level navigation sortie for the MSP who occupied the front cockpit. Approximately 14 minutes into the low-level route (1534 CST), the aircraft struck a vulture causing near total loss of the front cockpit canopy transparency, inducing severe aerodynamic drag forces on the airframe. The MIP assumed control of the aircraft, began a climb and initiated a turn towards LAFB. Because of the sudden increase in drag, the MIP perceived either dual engine failure or compressor stalls in both engines and began analyzing the engines. The MIP intended to adjust throttle position and analyze engine response in terms of RPM, engine temperature and fuel flow after each adjustment. Technical analysis confirmed there was no damage to either engine from organic or inorganic objects (bird remains or canopy fragments). Both engines continued to operate normally until impact with the ground. The MA entered a stall 1:57 minutes after the bird strike. The stall resulted from decreasing airspeed – the result of adjusting the throttles while attempting to assess the perceived engine malfunctions. Technical analysis determined the drag produced by the missing canopy was so great, both engines needed to remain near military power (95 percent RPM or above) to maintain level flight. The aircraft remained in a stalled condition for 30 seconds until the MSP initiated ejection followed by the MIP.

In the Board President's opinion three causes led to the mishap: (1) damage caused by the bird strike induced severe drag forces on the aircraft; (2) incorrect diagnosis of engine problems and extensive troubleshooting; and (3) the MIP failed to recognize the mishap aircraft entered a stall at 1688 feet above the ground (AGL). Temporal distortion caused the MIP to rapidly reposition the throttles without allowing adequate time for the engines to settle at selected power settings. Had the engines stabilized, the MIP could have ascertained normally functioning engines and potentially recovered the MA. The chaotic environment (ruptured canopy, perceived aircraft performance, low altitude) degraded the MIP's ability to calmly and accurately complete his analysis. Channelized attention, task saturation and other human factors led the MIP to focus solely on engine analysis to the exclusion of the MA's airspeed, altitude, and eventual stall characteristics, committing the mishap crew to a low altitude ejection at 523 feet AGL.

The Board President noted two additional areas of concern. The T-38 lacks a crash-survivable data recorder in the aircraft or ejection seat. The new T-38 Martin-Baker seat to be installed also lacks a data memory device. The T-38C simulator lacks software capability to both simulate the drag increase from a lost canopy and input drag coefficients into a flying simulation.

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 of the United States or by any person referred to in those conclusions or statements.
