

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION

**F-16C, T/N 87-0296
Dannelly Field, Alabama
28 July 2011**

On 28 July 2011, at approximately 1120 hours local time (L), an F-16C, tail number 87-0296, assigned to the 100th Fighter Squadron, 187th Fighter Wing, Dannelly Field, Alabama departed the prepared runway surface of Wittman Regional Airport (KOSH) causing \$5.4 million damage to the mishap aircraft (MA). The mishap pilot (MP) egressed the aircraft unharmed; there was only minor damage to Wittman Regional Airport.

The MP was number two of a two-ship formation on a continuation training (CT) mission to the AirVenture 2011 air show at KOSH. After an uneventful flight from Alabama to KOSH, the flight entered the airport landing pattern. During the MP's landing roll, the MA's environmental control system (ECS) caused extreme fogging that completely obscured the MP's visual cues and severely affected the correct execution of his normal landing procedures. The MP correctly applied the defog procedure without effect, resulting in the MA running off the end of the airport's 8002 ft runway.

The weather at the field was 1400 broken, 6 miles visibility, and calm winds. The weather forced the mishap flight (MF) to fly a lower than normal overhead pattern resulting in a flat final turn. The MA landed above computed touchdown speed with the speedbrakes closed. The MP attempted to aerobrake, but could not gauge the angle of attack (AOA) because of ECS fog. The MA never achieved the desired aerodynamic braking resulting in the jet exiting the prepared surface coming to rest approximately 300 ft into the grass infield. The MP egressed and emergency vehicles responded.

The board president found by clear and convincing evidence that the cause of the mishap was extreme fogging in the MA cockpit, caused by the MA ECS, that completely obscured the MP's vision. The board president found by a preponderance of the evidence that substantially contributing factors were an inadequate aerobrake, a fast touchdown speed, and closed speedbrakes. Aerodynamic braking provides the most effective braking in the F-16 during landing. The ECS fog denied the MP the ability to establish a proper aerobrake increasing his landing distance. The fast touchdown speed increased the landing distance, but would have been negated by a proper aerobrake. Speedbrakes would add some minor aerodynamic drag during the landing roll, but would not have prevented the MA's runway departure. The speedbrakes' primary purpose is to increase drag which at landing airspeeds provides for a higher power setting allowing for faster engine spool up in the event of go around. If not for the lack of visual and instrument references, the MP could have executed a proper aerobrake, come to a complete stop on the runway, and still had approximately 1000 ft of runway remaining.

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, if any, 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.