

EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION, F-16C, S/N 87-0327
57 FW / USAFADS, NELLIS AIR FORCE BASE, NEVADA
14 SEP 2003

On 14 September 2003, at 1516 hours local time, F16C S/N 87-0327 crashed between the runway and the control tower at Mountain Home Air Force Base, Idaho, while performing an aerial demonstration. The mishap pilot (MP), "Thunderbird 6," successfully ejected prior to the impact and sustained only minor injuries. The mishap aircraft (MA) was destroyed with the loss valued at \$20,415,911.93. The aircraft and the pilot were assigned to the USAF Aerial Demonstration Squadron (ADS), 57th Fighter Wing, Nellis Air Force Base, Nevada, and were operating as number 6 of the USAF Thunderbirds. There were no civilian or military casualties. No property, other than the MA, was damaged. Environmental impact was limited to soil contaminated by JP-8 where the fuselage came to rest, thus the costs for the clean up of the mishap were nominal.

The crash occurred 25 seconds into Thunderbird 6's flight. The pilot was performing the "Maximum Climb and Split S on Takeoff" maneuver when the mishap occurred. Mountain Home airfield elevation is 2,996 feet above Mean Sea Level (MSL). The Thunderbirds used a 3000 foot altimeter setting for the demonstration.

The mishap pilot took off at the proper time, 25 seconds after Thunderbird 5. The MP rotated at 200 knots, retracted the landing gear, and performed the maximum climb. The MP climbed at 55 degrees. At 4,670 feet MSL (1,670 feet above ground level (AGL)), the pilot initiated an unloaded roll to inverted. The target altitude to initiate the roll was 5500 feet MSL, (2500 feet AGL). The mishap pilot's planned apex (the highest point of the maneuver) was 6500 feet MSL (3500 feet AGL). The mishap pilot's actual apex altitude was 5760 feet MSL (2760 feet AGL). The MP called "three five" (meaning 3500 feet AGL) after reading 5500 feet on the heads up display (HUD) altimeter. The safety observer upon hearing "three five" allowed the maneuver to continue. The MP pulled back to complete the Split S. Upon reaching 90 degrees nose low, the MP recognized that "something was wrong." He had in fact put the aircraft in a position from which it could not be recovered. The MP commanded maximum back stick pressure in an attempt to recover and rolled slightly left to ensure the aircraft would impact away from the crowd should he have to eject. Upon realizing that he could not avoid ground impact, the MP ejected from the aircraft at 3140 feet MSL (140 feet AGL), 0.8 seconds prior to aircraft impact. The mishap pilot's ejection was successful and the aircraft impacted the ground on the opposite side of the show line from the crowd.

There is clear and convincing evidence that pilot error caused the mishap. The pilot misinterpreted his altitude above the ground causing him to roll and apex approximately 1000 feet below the target altitudes. He mistakenly interpreted 4500 feet MSL as the planned 2500 feet AGL roll altitude and 5500 feet MSL as the target 3500 foot AGL apex altitude. Thus, upon reading 5500 feet MSL on the altimeter, he called "three five" and initiated a Split S that the aircraft was incapable of successfully completing prior to ground impact.

Three factors substantially contributed to creating the prospect for such a critical error. The requirement for demonstration pilots to real time convert MSL to AGL numbers, a maneuver with a limited margin of error, and a preconscous level of awareness created a situation more susceptible to pilot error.

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.