

EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION
F-22A, T/N 91-4008
EDWARDS AIR FORCE BASE, CALIFORNIA
25 MARCH 2009

On 25 Mar 2009, at 0927 local Pacific Standard Time, an F-22A aircraft, tail number 91-4008, assigned to the 411th Flight Test Squadron, 412th Test Wing, Edwards Air Force Base (AFB), California, departed Edwards AFB to conduct a weapons integration flight test mission. The mishap mission involved an F-22A mishap test aircraft (MTA) and an F-16D safety chase aircraft operating within restricted airspace 2508 located northeast of Edwards AFB. The MTA was instrumented to transmit flight telemetry data to a team of engineers who monitored MTA performance from the Ridley Mission Control Center.

The mishap test pilot (MTP) performed three similar high-speed, high-performance test maneuvers within specific parameters in order to evaluate how the weapons integration affects aircraft performance. The test parameters for all three maneuvers were Mach 1.60 +/- .02, target g-load, and altitude of 20,800 +/-2000 feet (ft) Mean Sea Level (MSL). To execute the tests, the MTP rolled the MTA inverted, performed half of a split-S maneuver, achieved the specific test point, and recovered by rolling the MTA right side up and pulling out of the dive. The first two test maneuvers were performed without incident. During the third maneuver, the MTA achieved the test point parameters at 22,800 ft MSL; however, the MTP continued a max g pull to an 83 degree nose low dive angle. When the MTA reached 14,880 ft MSL, the MTP made a full roll stick input to orient the MTA wings level and continued a full aft stick input to decrease the dive angle to approximately 50-degrees nose low. At 7,486 ft MSL, the MTP initiated ejection and immediately sustained fatal injuries. The MTA was destroyed upon ground impact, 35 miles northeast of Edwards AFB. There was minimal damage to private property and no civilian casualties.

This mishap was caused by the MTP's adverse physiological reaction to high acceleration forces and subsequent loss of situational awareness (SA) during recovery from the third test maneuver. The MTP channelized his attention to fight off the effects of high g-forces, characterized by grayout, light loss, and/or tunnel vision; meanwhile, the MTA entered an extreme nose down, high-speed attitude from which safe recovery was not possible. The MTP regained some SA but determined he was too low and descending too fast for a safe recovery. He ejected from the MTA outside the ejection seat design envelope and sustained fatal injury.

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 an person referred to in those conclusions or statements.