

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION, F/A-22 S/N 00-4014

422nd TEST AND EVALUATION SQUADRON

NELLIS AIR FORCE BASE (AFB), NEVADA

20 DECEMBER 2004

On 20 December 2004, at 2340Z/1540 local time, the Mishap Aircraft (MA), F/A-22, Serial Number 00-4014, crashed on initial takeoff from Nellis AFB. The Mishap Pilot (MP), assigned to the 422nd Test and Evaluation Squadron, Nellis AFB, ejected safely and sustained only minor injuries. There were no other casualties. The MA impacted the Nellis AFB airfield and was destroyed. The only other damage was also to government property including an arresting cable, a runway sign, a runway light, and the runway surface.

Immediately upon leaving the ground, the MA began a series of un-commanded and progressively more violent yaw, roll, and pitch transients. Unable to control the aircraft, the MP ejected seconds before the MA impacted the ground.

The Accident Investigation Board President determined the cause of the mishap, supported by clear and convincing evidence, was an inoperative Flight Control System, resulting from a power interruption, which made the MA uncontrollable. The MP was unaware of this condition because he did not perform an Initiate Built in Test (IBIT), the only means of detecting the problem. Failure to perform the IBIT was the result of ambiguous Technical Orders and a mistaken belief in continuous RSA power availability.

During the mishap sequence, the MP started engines, performed an IBIT, and had a fully functioning Flight Control System. Subsequently, the MP shut down engines to allow maintenance personnel to service the Stored Energy System. During engine shut down, the MA's Auxiliary Power System (APU) was running. The MP believed the APU provided continuous power to the Flight Control System, and therefore another IBIT after engine restart was unnecessary. This belief was based on academic training, technical data system description, and was shared by most F/A-22 personnel interviewed during the investigation.

In fact, the MA's Flight Control System did experience a brief power interruption during the engine shut down sequence. The interruption produced an unforeseen catastrophic Flight Control System failure that rendered the MA un-flyable.

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 these conclusions or statements.