

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION

F-22A, S/N 91-4008

Dobbins ARB, Georgia

22 April 2002

On 22 April 2002, at 1335 EDT, F-22 91-4008, assigned to 411 FLTS, 412 TW, AFFTC, Edwards AFB, CA, executing a planned ferry mission to Edwards AFB, CA took off from Dobbins ARB, GA as Raptor 03, in conjunction with 2 F-15 chase aircraft, Raptor 11/05, and 1 KC-135R, Arris 38. Raptor 03 struck and ingested into the right engine, F119-PW-100 P720032, a common loon weighing approximately 8.5 pounds, during rendezvous maneuvering shortly after takeoff. Although damage to the engine was extensive, the engine continued to operate nominally; all readings available to either the pilot or to the mission control team showed normal operation. In fact, if not for other coincident but unrelated malfunctions of the aircraft, the mission might have been continued due to the lack of any discernable malfunction of either F119 engine after the birdstrike.

Preflight, start, taxi and takeoff were unremarkable and in compliance with all applicable standards and procedures. The departure was accomplished as a dual pickup and was likewise unremarkable, until the F-22 struck the bird. Action following the birdstrike was appropriate and entirely within the bounds of normal operational procedures.

There were no injuries or deaths and, with the exception of some minor damage to the engine inlet, damage to the aircraft was confined to the structure of the right engine installed in the aircraft. The engine damage consisted of Foreign Object Damage (FOD) and Domestic Object Damage (DOD) caused by ingestion of the bird. All compressor stages of the engine were damaged beyond current repair capability. Many blades on each rotating and stationary stage of the engine were damaged beyond technically approved limits for repair. Also, each rotating stage is built using a process that combines the rotating wheel with all the blades (airfoils) for that stage in such a fashion that the stage is an integral unit called an Integrally Bladed Rotor (IBR). Consequently, irreparable damage to any one blade causes the entire stage to be irreparable. An IBR, thus damaged, must be replaced. Cost of repair/replacement of the engine was estimated to exceed two million dollars. Damage to the aircraft was caused solely by collision with a bird. No reasonable process could have avoided the collision.

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.