

(UNCLASSIFIED)

EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION
RQ-4A GLOBAL HAWK UAV ACCIDENT
FORWARD OPERATING LOCATION

10 JULY 2002

On 10 July 2002, at 0704 Local (0404Zulu), the Mishap Aircraft (MA), RQ-4A Global Hawk Unmanned Aerial Vehicle Serial Number 98-2004, was flying an operational mission in support of Operation ENDURING FREEDOM when it experienced catastrophic engine failure and impacted the ground. The MA came to rest in an uninhabited friendly area in the Central Command AOR. No damage to government or private property, other than the air vehicle, was sustained. The damage to the air vehicle, including the sensor package, is estimated at \$40.6 million.

There is clear and convincing evidence that the primary cause of this mishap was a single fuel nozzle failing in the high flow position that eventually caused internal failure of the engine. A review of the performance the engine experienced during the incident flight with the design analysis of the combustor with a single fuel nozzle stuck in the open takeoff flow metered position is consistent with the hardware distress observed.

The preflight through the first seven hours of flight was nominal. At seven hours and two minutes into the mission the air intake fan speed decreased from 90% to 74% and the first fault message was received from the on-board computers monitoring the MA. The MA began to descend. Multiple Engine Core vibration faults followed and cleared. Approximately 15 minutes later Mishap Pilot (MP) 1 directed the MA to return to base when he received a fault message indicating that the navigation systems were functioning below acceptable limits. During the return to base, MP2 received a status brief and took command from MP1. Two hours and 10 minutes (0330Z) after the initial fault message, the MA experienced a catastrophic engine failure. The MA glided for another 34 minutes. MP2 attempted to find a suitable landing area and executed an emergency landing gear extension. The MA impacted the ground during the attempted emergency landing.

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.

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RQ-4A Global Hawk, S/N 98-2004, 20020710