

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION KC-10A, S/N 82-0192 TRAVIS AFB, CA 17 NOVEMBER 2003

On 17 November 2003, at 2135 PST (18/0535Z), a KC-10A, S/N 82-0192, experienced a catastrophic failure of number 2 engine at a point 80 nautical miles west of Mendocino (Sonoma County), CA (coordinates: N39°21' W124°56'). The KC-10, assigned to 660th Aircraft Maintenance Squadron, 60th Air Mobility Wing, Travis Air Force Base (AFB), CA, was flown by members of 79th Air Refueling Squadron, 349th Air Mobility Wing, Travis AFB. The damage was extensive enough to cause an estimated \$4.7 million in repair costs. There were no injuries to military or civilian personnel and no private property damage.

The KC-10 was on a night air refueling training mission at the time of the mishap. Approximately 3 hours and 40 minutes into the mission, during a practice emergency separation maneuver and after advancing the throttles toward maximum continuous thrust, the flight crew reported hearing a loud noise and feeling significant vibration throughout the aircraft. All engine instruments were indicating normal. Upon reduction of power, the flight crew observed that the thrust reverser unlock and pressure caution indicator lights for the number 2 engine were illuminated. At the same time the flight crew received reports from the receiver aircraft (C-5) and the refueling boom operator that they had seen a flash toward the tail of the aircraft. The flight crew then shut down number 2 engine. After shut down, they declared an in-flight emergency and the aircraft was returned to Travis AFB and landed uneventfully. After landing, inspection revealed that a portion of the number 2 engine first stage fan blade had liberated and been ingested into the engine causing significant damage.

The catastrophic failure of the number 2 engine was caused by failure of the number 6 blade. The blade failed as a result of an anomaly whose nature or origin could not be determined. However, based on substantial scientific evidence, the anomaly occurred some time after its last landing prior to its last overhaul but before or simultaneously with the last straightening procedure at the last overall. During this time the following agencies had responsibility for the blade; the Air Force, GEWO, Airfoil Technologies International/Aviation Product Support-Ohio (ATI), and the shipping firm. A review of procedures employed revealed that each agency followed them properly with no deviations annotated. However, ATI employed certain procedures in an improper repair sequence. This improper sequencing substantially contributed to the accident in that it resulted in masking of the anomaly and the subsequent failure to detect the anomaly.

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.