



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

October 25, 2017

ENGINE/AIRFRAME EXAMINATION SUMMARY

WPR17LA163

This document contains 2 embedded images.

A. ACCIDENT

Location: Las Vegas, Nevada
Date: July 24, 2017
Aircraft: N605GV; BAC STKMSTR MK80
NTSB Investigator-in-Charge: Albert Nixon

On July 24, 2017, about 1156 Pacific daylight time, an experimental British Aircraft Corp. BAC STKMSTR MK80, N605GV, was destroyed when it collided with the ground shortly after takeoff at the Henderson Executive Airport (HND) Las Vegas, Nevada. The commercial pilot, sole occupant of the airplane, sustained minor injuries. The airplane was registered to Attack Aviation Foundation Inc., and operated by Blue Air Training LLC, for the U.S. Department of Defense as a public aircraft in support of the U.S. Air Force. Visual meteorological conditions prevailed, and no flight plan was filed for the cross-country ferry flight. The flight originated about 1155 with a destination of Reno/Tahoe International Airport, Reno, Nevada.

According to the pilot, shortly after takeoff, the airplane failed to accelerate, and he was unable to initiate a normal climb. The airplane subsequently struck terrain and was consumed by fire.

Examination of the accident site by a Federal Aviation Administration inspector revealed that the airplane came to rest upright, about 1/4 mile south of the departure end of runway 17R. All major components of the airplane were located in the wreckage.

The airplane wreckage was recovered to a secure location for further examination.

B. PARTICIPANTS

Albert Nixon - NTSB IIC
Jack Vanover - NTSB
John Conley – Airframe and Powerplant Mechanic
Jack Johnson - Rolls-Royce
John Waugh - FAA

C. SUMMARY

Examination of the recovered wreckage was conducted on October 25, 2017, at the facilities of Air Transport, Phoenix, Arizona, by the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) and parties to the investigation.

D. ENGINE EXAM

The front housing of the compressor and accessory gearbox was partially consumed by the post-crash fire. The turbine section and tailpipe did not exhibit any evidence of abnormal combustion.



Figure 1: Airplane wreckage prepared for the examination as viewed from the left side.

A borescope was inserted to the 7th stage of the compressor, allowing inspection of all compressor stages. No damage or evidence of failure was noted.

All blades and vanes were examined, and no evidence of damage or failure was noted.

About half a tank of oil was present.

The pressure oil screen that was in oil was removed. No metallic debris was found.

No evidence of mechanical failure that would have precluded normal operation of the engine was noted during the examination.

E. AIRFRAME EXAM

Flight control continuity was established with primary flight controls. The ailerons, elevators, and rudder moved freely with exception of the left horizontal stabilizer that had been cut during recovery.



Figure 2: Right wing prepared for examination as viewed from the rear.

The left wing was separated from the fuselage and displayed extensive post-impact thermal damage. The aileron remained partially attached and displayed thermal damage. The flap was fully extended and remained attached to the wing and exhibited extensive post-impact thermal damage. Soot observed on the leading edge of the flap was consistent with it being in the fully extended position. The upper skin of the spoiler was destroyed by the post-impact fire. The spoiler actuator was also destroyed, and its torque tube unmovable. The lower spoiler was unable to move due to thermal damage.

The left flap was found in full deployed position. The flap symmetry cable separated off the flap drive quadrant. The flap drive rod that connects to the flap drive quadrant was separated and was not found during the examination. The flap hydraulic actuator was found seized in the flap fully extended position, which was measured at 1 ¼ inch on the actuator. Landing gear was retracted and locked in the fuselage.

The right wing was separated from the fuselage and displayed some post-impact thermal damage at the leading-edge root. The aileron remained attached and some thermal damage was noted. The flap remained attached to the wing and exhibited some post-impact thermal damage. The flap was fully extended and remained attached to the wing and exhibited thermal damage. Soot observed on the leading edge of the flap was consistent with it being in the fully extended position. The spoiler remained attached to the wing and was in the non-deployed position and displayed soot. The soot was constant across the spoiler.

When the right flap was manually actuated, a red fluid was observed coming from the (hydraulic line) flap drive actuator, leaking to the ground where it had been cut during the recovery. Full actuation and flap panel movement was noted. The flap range was operated from the fully extended to the fully retracted position. The flap range of motion was from 1 ¼ (fully extended)

to 3 ½ (fully retracted) when measured at the flap actuator. The landing gear was retracted and locked in the fuselage. The spoiler was manually actuated, and no anomalies were noted.

The hydraulic reservoir was mostly intact and about $\frac{3}{4}$ full.

Submitted by: Jack Vanover