

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA24FA209

WRECKAGE EXAMINATION SUMMARY

June 5, 2024

TABLE OF CONTENTS

A. ACCIDENT	3
B. WRECKAGE EXAMINATION SUMMARY	3
C. SUMMARY	3
1.0 Accident Site.....	3
2.0 Airframe Examination.....	4
3.0 Engine Examination.....	5

A. ACCIDENT

Location: Palmyra, VA
Date: May 5, 2022
Time: 0854 EDT
<Enter HHMM coordinated universal time (UTC)>
Airplane: Rockwell International, Commander 690A

B. WRECKAGE EXAMINATION SUMMARY

IIC	Daniel Boggs National Transportation Safety Board Daytona Beach, FL
Investigator	Clint Crookshanks NTSB Leani Benitez Cardona NTSB
Party Member	Camp Morton Honeywell Engines Jay Eller Honeywell Engines

C. SUMMARY

On May 5, 2024, about 0854 eastern daylight time, a Rockwell International 690A, N690BM, was destroyed when it was involved in an accident near Palmyra, Virginia. The pilot and passenger were fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

D. DETAILS OF THE INVESTIGATION

1.0 Accident Site

The accident site was in a wooded area and the wreckage path was over 3 ½ miles long. The airplane was heavily fragmented and scattered along the debris path on a course of 180° magnetic. The left wing, left engine, left propeller and empennage were heavily burnt and located at the main wreckage site. It came to

rest inverted and on a heading of 310°. The right wing was separated at the wing root was located ¼ mile north of the main wreckage. The right wing was fire damaged. The right engine and right propeller were not located. The vertical, and horizontal stabilizers were located about ¾ mile north of the main wreckage.

2.0 Airframe Examination

The Airframe was examined at the Recovery companies' hangar facilities. The autopilot system, De-Ice boots, overhead switch for the De-Ice system, and timer were all destroyed by fire and could not be examined.

The right wing was found separated from the main wreckage laying upside down on the ground. The entire lower skin showed evidence of heat damage with areas of skin penetration. The lower surface inboard of the engine was burnt through the skin into the frame structure which was burnt and melted. The areas of the upper skin that were observed exhibited minor heat damage to the paint. The right wing structure was deformed in a downward direction between the fracture at the root and the nacelle. The fractured surfaces were visually inspected, and they had a dull, grainy appearance consistent with overstress fractures.

The leading edge of the right wing had a cut approximately 50 inches from the outboard edge of the nacelle. The cut was through the leading edge and extended approximately 2 inches aft on the lower skin and 4 inches aft on the upper skin. The leading edge skin was deformed upward on the upper and lower surfaces.

The left wing and engine remained attached to the fuselage laying upside down on the ground. The left aileron was separated from the wing and was not recovered. The left wing was cut from the fuselage and sectioned in two parts during recovery.

The entire lower skin showed evidence of heat damage with areas of skin penetration. The lower surface of the left wing inboard of the engine was burnt though and the frame structure melted. The areas of the upper skin that could be observed exhibited minor heat damage to the paint. The left wing had a deformation in the downward direction near the wing root.

3.0 Engine Examination

The right engine is missing and was not recovered from the accident scene.

The left engine data plate identified the following:

- o Model: TPE331-5-251K

- o SN: P-06070C
 - o PN: 895720-1
- All four threaded inserts had been pulled from the Gearbox at the Right Gearbox Mount location
- The Aft Mount was separated from the aircraft at the aircraft interface
- The Starter was separated from its mount feature (fractured 360 degrees) at the gearbox mount location
- The Fuel Control Unit aft mount bracket was buckled
- The Fuel Control Unit/Fuel Pump was separated from the Fuel Pump mount location on the Gearbox, with a fracture at 12 o'clock through the cast Fuel Pump mount flange
- The Fuel Control Unit casting was fractured aft of the flange interface with the Fuel Pump
- One ear of the Oil Filter bolt flange (at 5 o'clock) was fractured
- The manual fuel shutoff lever was in the "AUTO" position as noted by the end shaft "tick mark" being in-line with the valve body.
- The Oil Bypass Indicator was damaged, and its position could not be determined
- Rotation of the Third Stage Turbine rotor by hand resulted in corresponding rotation of the First Stage Compressor
- Continuity was not demonstrated when the propeller was restrained by hand and the engine power section (at turbine) was rotated.
- Earthen debris was noted in the engine inlet.
- Fire damage and soot was evident on external surfaces and lines/hoses
- The high pressure combustor plenum bleed port was broken and tube was not present
- The Torque Limiter support bracket was separated from its mount location on the Gearbox
- Two of the blades (11 o'clock position and 7 o'clock position as found) exhibited leading edge damage.
- The Beta Tube was removed after 16 ¾ turns
- No oil was present in the prop. hub

The decision was made to send the engine to Honeywell for further investigation. The engine was packaged in a standard shipping container, banded, and prepared for delivery.

Submitted by:

Daniel Boggs
Air Safety Investigator