

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22FA331

WRECKAGE EXAMINATION

May 18, 2023

A. ACCIDENT

Location: Shafter, California
Date: September 2, 2022
Time: 1100 Pacific daylight time
Airplane: N5943, Yakovlev Yak-11

B. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

Examination of the recovered wreckage revealed that the oil line from the outlet port of the oil tank to the inlet port on the engine was separated and exhibited impact damage. The oil tank was impact damaged and breached. The oil line from the outlet port on the engine to the inlet port of the oil tank was separated and exhibited impact damage. The two oil lines (inlet and outlet) that extended from the oil tank aft to the 2 oil coolers was impact damaged, and mostly remained intact. The line interconnects (rubber tubing) were present. A very small amount of oil was observed on the fuselage directly above the oil coolers, consistent with seeping out of the coolers during storage post-accident. No evidence of any leaks were observed throughout the airframe oil system.

Flight control continuity was established throughout to all primary flight control surfaces. Various fractures in the control cables and torque tubes were observed and found to be consistent with impact.

Cockpit Documentation:

Tachometer: Needle displaced
Acceleration: +2.6, -2.3, -3.8
Manifold pressure: Impact damaged, needle pointing at 76.5 inches
HOBBS: 32.2 hours
Batt: On
Gen: On
Avi Master: On
Cylinder Head Temperature: L - 125 degrees, R: 50 degrees
Airspeed: Displaced/impact damaged, 465 knots
The flap handle was in the "down" position.



Figure 1: Recovered engine, propeller, and forward portion of the fuselage.

2.0 Engine Examination

The engine, a Pratt & Whitney R2800 "Double Wasp" CB3 remained attached to the airframe, however, it was separated into 2 sections, consisting of the main case/front case, cylinders, and the blower/accessory section. The engine was removed from the airframe for further examination.

3.0 Propeller Examination

One of the three separated propeller blades exhibited "S" bending with chordwise striations on the cambered side of the propeller. The second propeller blade was bent and curled aft, opposite direction of rotation. The third propeller blade was relatively straight and exhibited chordwise striations on the cambered side of the blade and leading edge polishing throughout its span. The fourth propeller blade, which remained attached to the propeller hub, was slightly bent aft near the blade tip, and exhibited unidirectional striations on the cambered side of the blade.

Submitted by:

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