

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ANC24LA064

WRECKAGE EXAMINATION

July 20, 2024

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A. ACCIDENT

Location: Petersville, AK
Date: July 12, 2024
Time: 1700L
Airplane: N535KT DeHavilland DHC-2T

B. WRECKAGE EXAMINATION

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NTSB
Anchorage, AK

C. SUMMARY

On July 12, 2024, about 1700 Alaska daylight time, a turbine-powered DeHavilland DHC-2T (Beaver) airplane, N535KT sustained substantial damage when it was involved in an accident near Petersville, Alaska. The pilot and 8 passengers were not injured. The airplane was operated by the pilot as a Title 14 Code of Federal Regulations Part 135 air tour flight.

The accident airplane, owned by Rust Properties LLC and operated by K2 Aviation, was conducting an air tour flight within the Denali National Park and Preserve. The airplane departed from the Talkeetna Airport (TKA), about 1614, for a flight over the Tokositna Glacier before returning to TKA. The pilot reported that, while operating over the upper elevations of the Tokositna Glacier, he initially noticed a propeller rpm fluctuation. In an attempt to correct the rpm fluctuation, he moved the propeller pitch control, but it had no effect on the fluctuating propeller pitch. As the pilot started an emergency descent, the propeller went into a near feathered position, but the engine continued to produce power with a high engine torque indication. He reported that he was unable to move the propeller out of the near feathered position, and that he was unable to maintain altitude. The pilot then selected an area of hilly, alder tree-covered terrain as a forced landing site, resulting in substantial damage to the fuselage and wings.

The airplane was equipped with a Pratt and Whitney PT6A-60A series turbine engine.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

The pilot reported no mechanical issues with the airplane other than the loss of propeller pitch control. Flight controls operated normally.

1.1 Fuselage



Figure 1 View of accident airplane before examination

2.0 Propeller Examination

Confirmed propeller control continuity from the cockpit controls to the propeller governor. There was no oil on the engine dip stick. Chip detector was checked and no chips were observed. Reduction gear box filter screen was clean, and the oil looked clean. Governor screen was clean.

With the governor removed the propeller blades were released from the start locked position. When the blades were released, high pressure oil was discharged from where the governor was removed. Hobbs show 542.9.

Beta ring micro switch position component was jammed.

Results of electrical wiring tests.

From Jeff Brown an electrical technician:

Jeff checked the wiring continuity of all systems associated with the beta backup system: relays, circuit breakers, switches, lights, position stops and sensors. He compared wiring to the provided wiring diagram and performed ring tests. All systems are wired per diagram and working normally. Operation of the power lever and prop feather systems causes all relays and switches to activate and deactivate as expected. Inspection of the circuit breaker system shows that circuit breakers work properly and are wired to the correct bus. I have also spoken to Dallas about this, and he has confirmed that his people performed tests and came to the same conclusion.

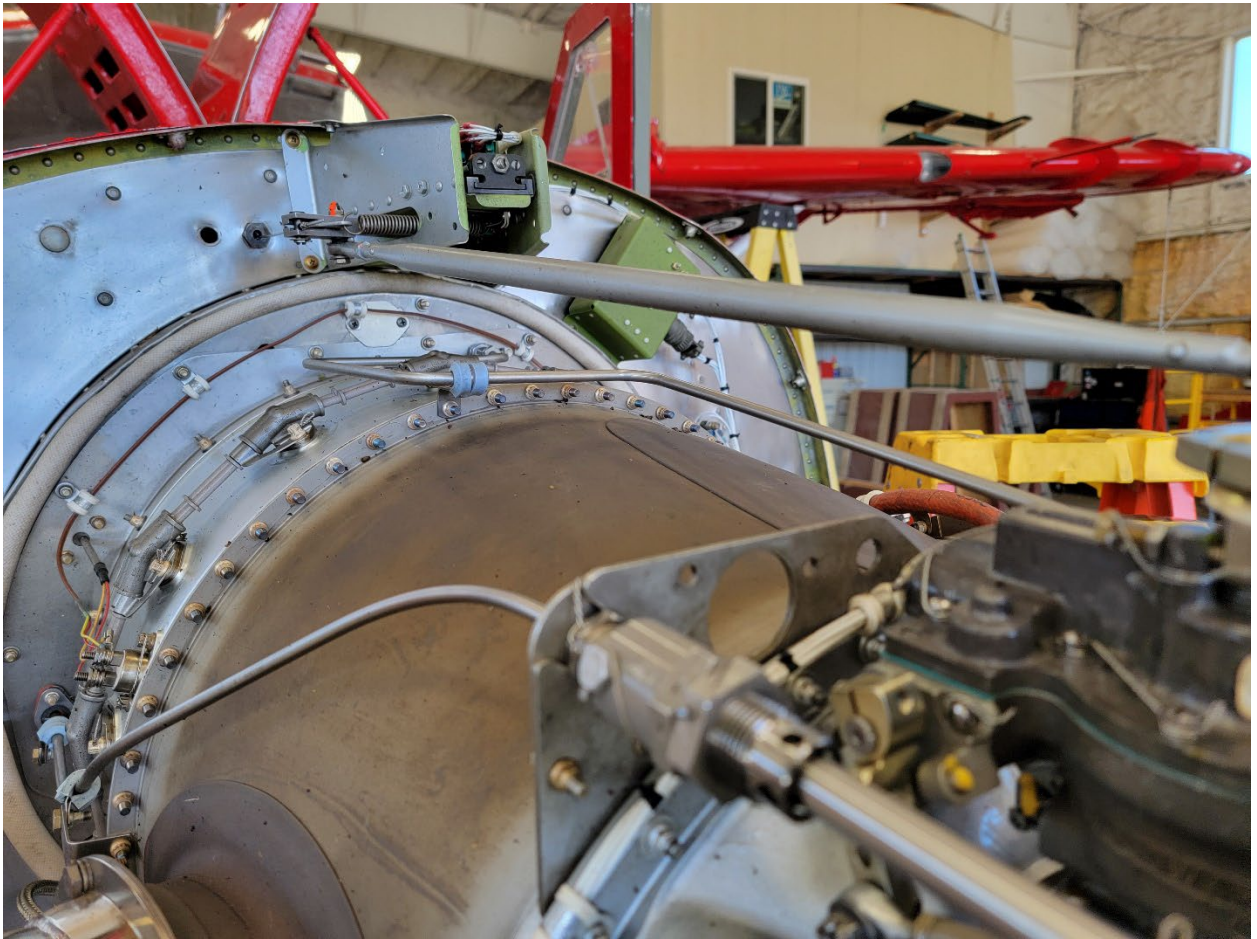


Figure 2 view of control to propeller governor

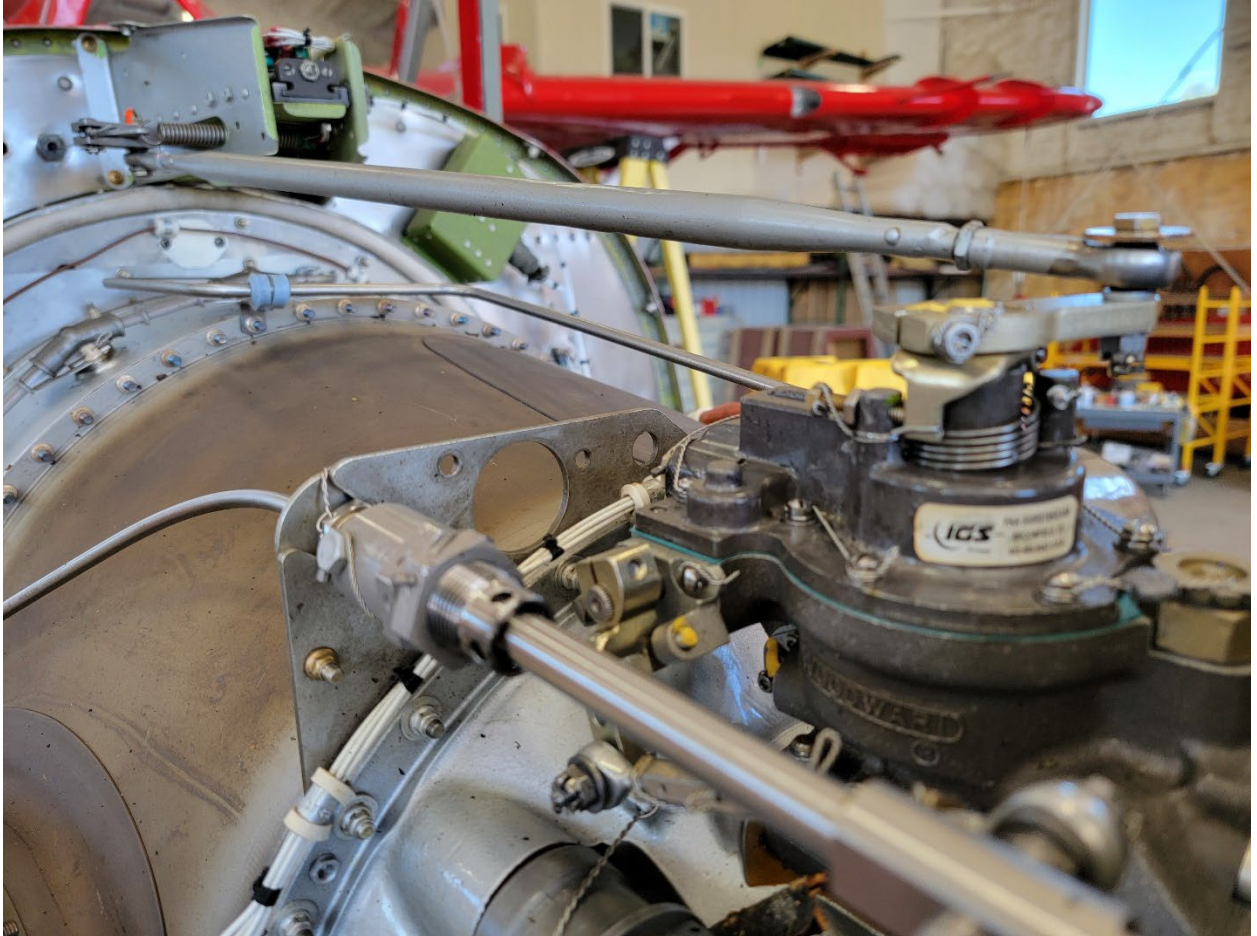


Figure 3 View of propeller governor

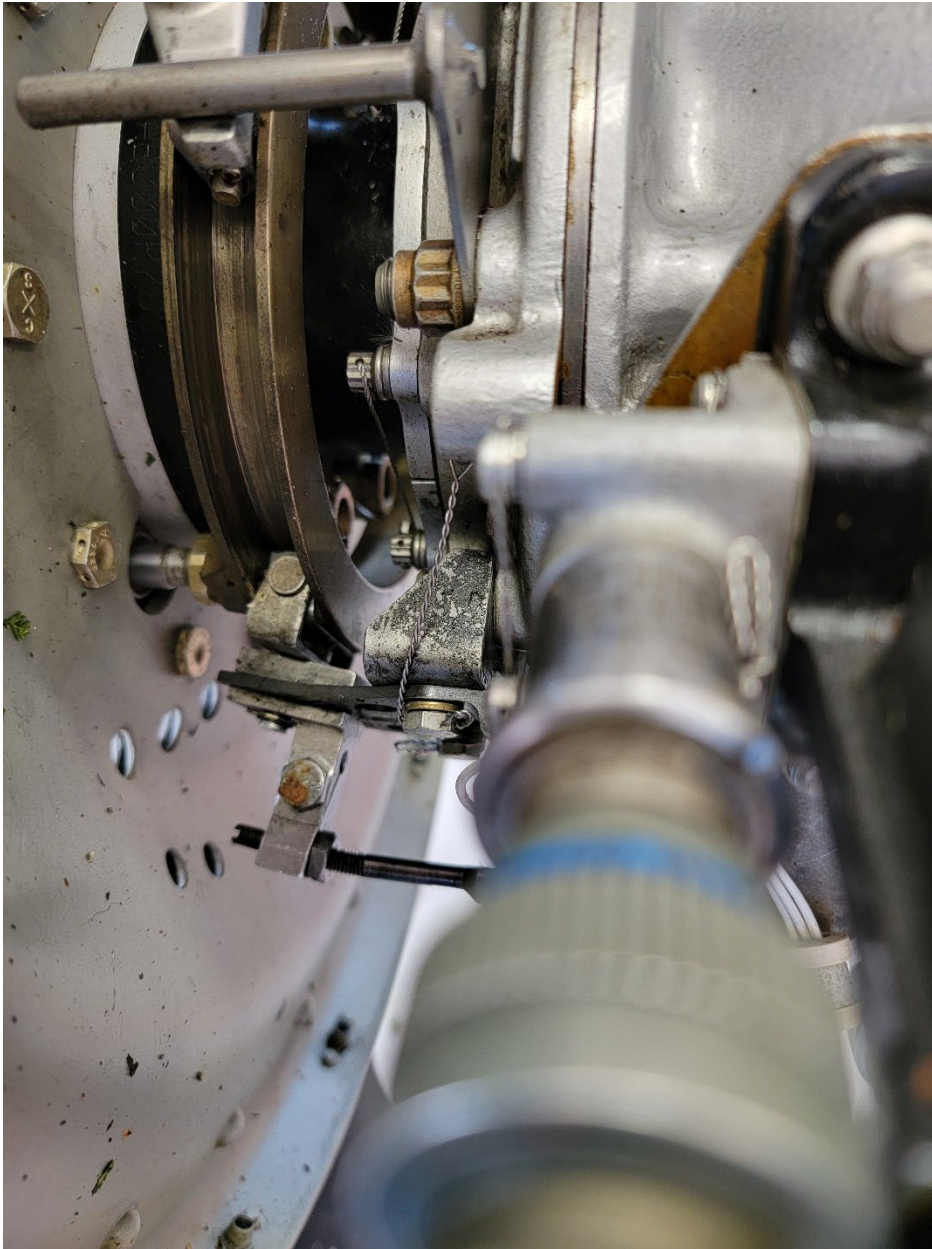


Figure 4 View of bent cam rod installed on airplane

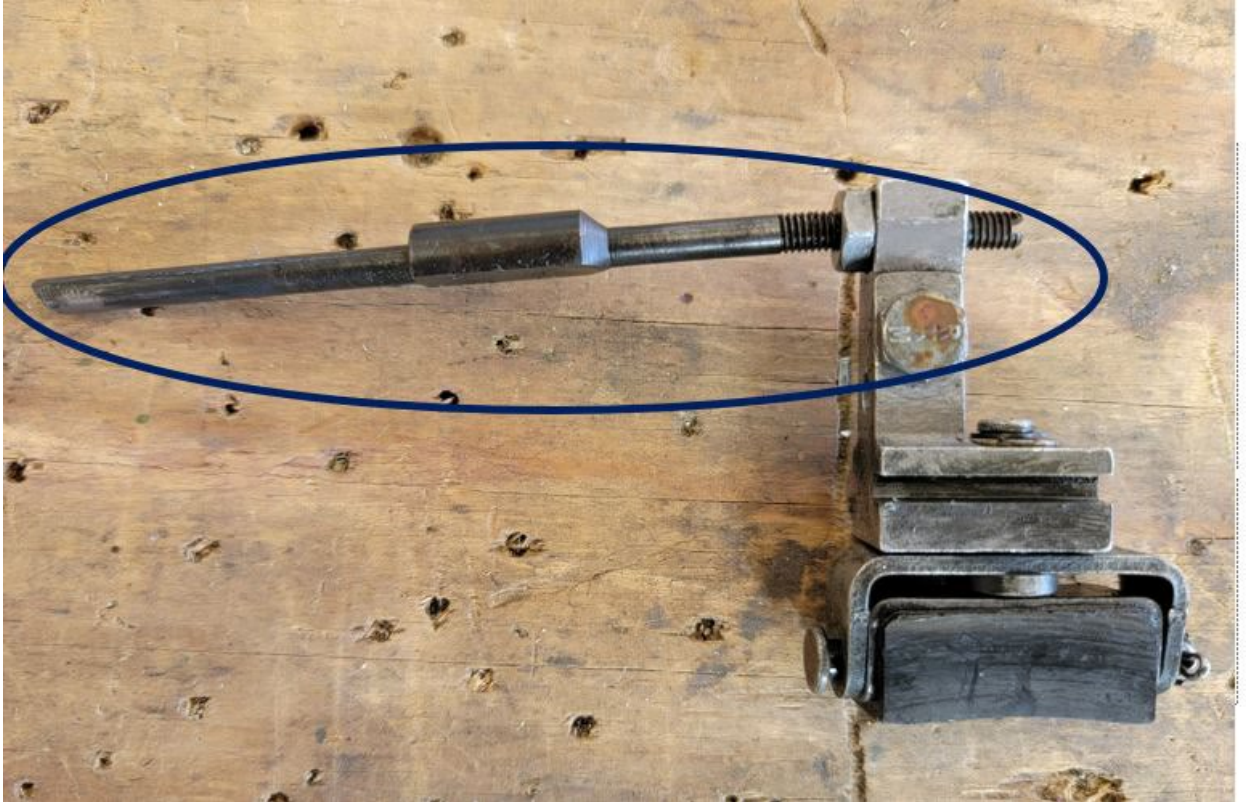


Figure 5 View of cam rod



Figure 6 View of bent cam compared to an undamaged cam rod.

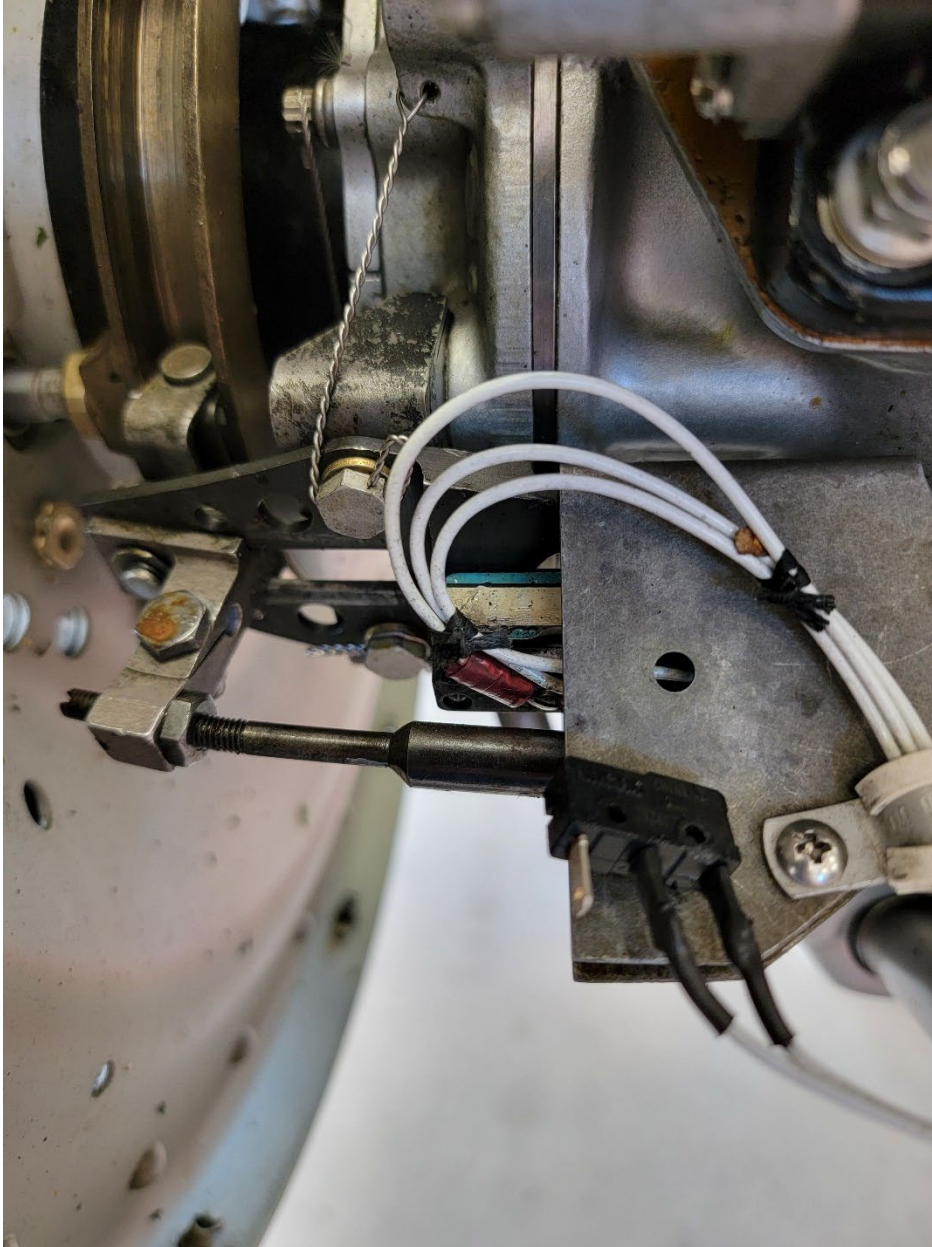


Figure 7 View of bent cam rod.

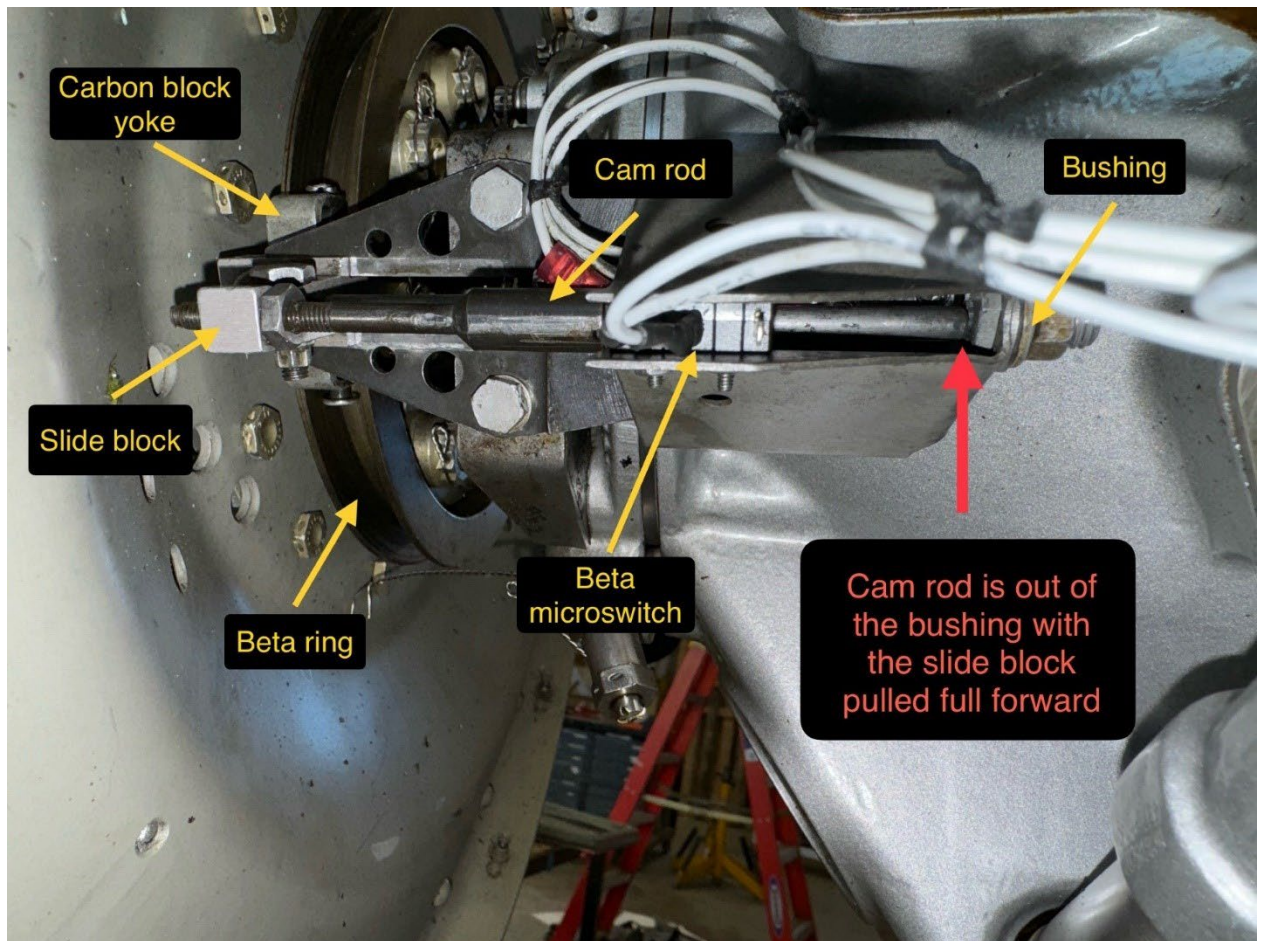


Figure 8 Exemplar of the Beta ring

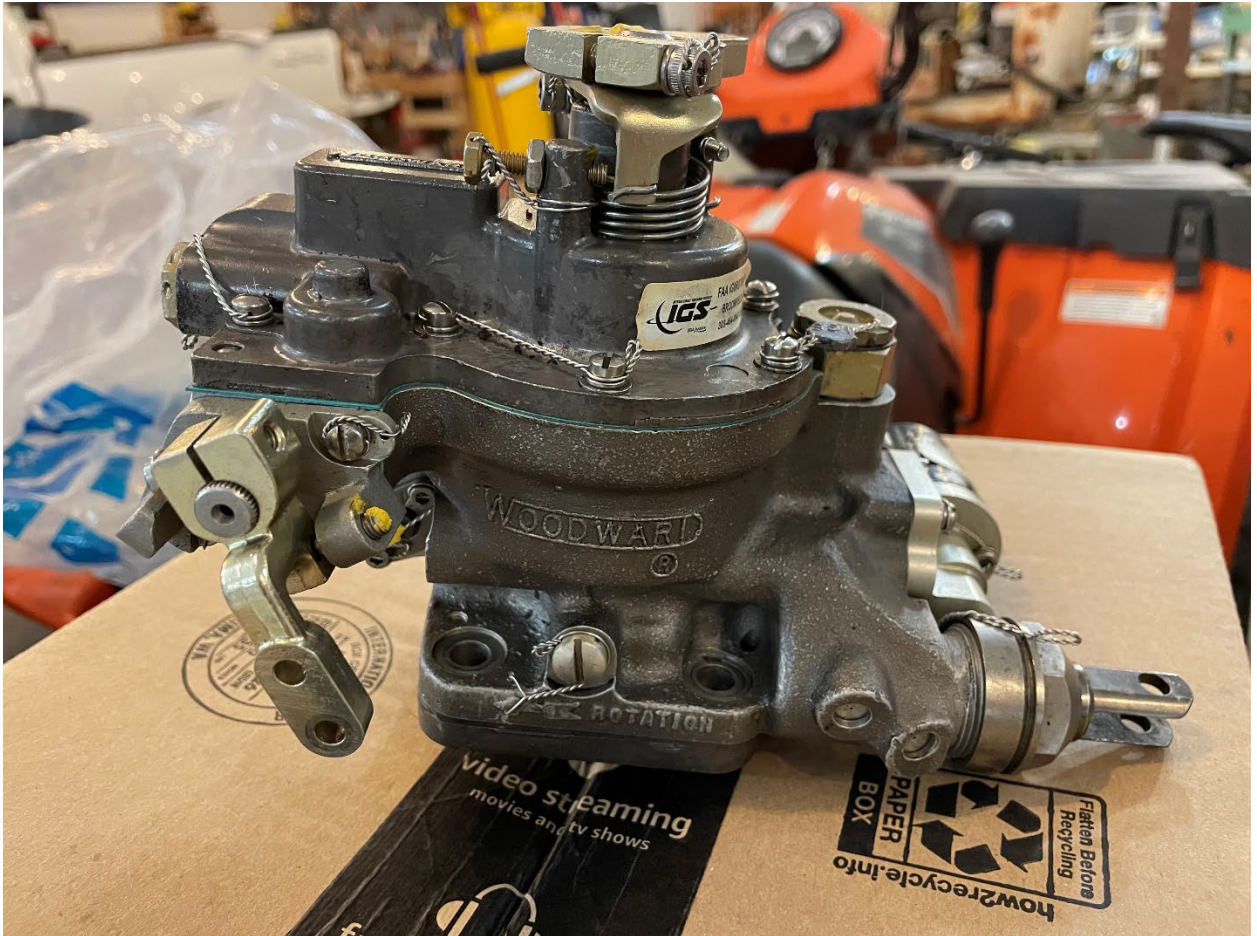


Figure 9 Governor removed for testing

3.0 Pilot statement

Before the wreckage examination I talked to the pilot, Grant. Grant reported that he had made several flights in the accident airplane the day of the accident. The first flight tour started at 830am, a second flight to Mountain House, another flight down to Merrill Field and back. This flight was a lower glacier tour with no landing and was a one-hour tour.

During the flight the rpm was set at 30 and the propeller was 82%. The propeller indications fell from 80% down to 40% and the propellers were no longer producing any thrust. He reached out to other pilots flying to help in troubleshooting the problem. He cycled the propeller, and the propeller indication went from 40% down to 30%. The propeller never went into the full feather position. The airplane impacted terrain at about 2200ft elevation into 8ft to 12ft trees. They hit a rock on landing. He did not remember looking at what the oil pressure was. He shut down the engine and shut off the fuel about 20ft to 30ft above the ground.

Submitted by:

M. Ward

AAI