



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Western Pacific Region

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ENGINE EXAMINATION

WPR19LA137

This document contains 4 embedded photos.

(7 Pages)

WPR19LA137

Sutter, California

May 5, 2019

1006 PDT

Schweizer Aircraft Corporation G-164B – N3630D

EXAMINATION PARTICIPANTS

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HISTORY OF FLIGHT

On May 5, 2019, at 1006 Pacific daylight time, a Schweizer Aircraft Corporation G-164B airplane, N3630D, was substantially damaged during a forced landing in Sutter, California. The commercial pilot was not injured. The airplane was registered to and operated by Anderson's Flying Service under the provisions of Title 14 *Code of Federal Regulations* Part 137 as an agricultural application flight. Visual meteorological conditions prevailed and a flight plan was not filed for the local flight, which departed a private airstrip in Robbins, California at 1005.

According to the pilot, after completing 17 takeoffs that day, he departed the gravel runway to the south with about 45 gallons of JET-A fuel onboard and about 2,500 lbs of fertilizer. He climbed to a cruise altitude of about 500 ft above ground level and set the power to 36 lbs of torque and the propeller to 2,000 rpm. Fifteen seconds after he established cruise flight, the engine rolled back to idle power and the airplane immediately began to descend. After an

unsuccessful attempt to add power by advancing the throttle, he jettisoned the load of fertilizer, and initiated a forced landing to a nearby road. The airplane landed short of the road and impacted a group of prune trees before it came to rest.

A review of photographs furnished by the operator revealed substantial damage to the wings and fuselage.

Examination

Engine Manufacturer: Pratt & Whitney Canada

Engine Model: PT6A-34AG

Engine Serial Number: 56107

Hobbs: 1,407.1 hrs

The airplane was recovered to a facility in Pleasant Grove, California where it was examined on June 18, 2019 by a representative of the engine manufacturer with oversight from the National Transportation Safety Board Investigator-in-Charge.

The lower cowl was crushed as was the propeller spinner. The lower and upper cowl was removed to facilitate the inspection. Both the top and bottom portions of the exhaust case displayed buckling and the second bulkhead forward of the engine firewall was torn forward. A rope was wrapped around the propeller driveshaft. The engine was otherwise unremarkable.

Continuity was confirmed from the power lever to the fuel control unit (FCU) and from the propeller lever to the propeller governor. The fuel cutoff lever was continuous from the cockpit to the FCU and could be moved from fuel cutoff to the high-idle setting. Additionally, continuity was confirmed for the beta control linkage from the cam assembly to the beta valve lever.

The compressor section screen was unremarkable and the compressor blades rotated normally and no erosion was observed. Additionally, the exhaust section was undamaged with the exception of the case.

The propeller control cam manages propeller movement when the engine is in beta, or ground operation. Examination of the assembly showed that the propeller control cam had fractured at the root.

Most of the FCU linkages were unremarkable with the exception of the interconnect rod, which joins intermediate FCU linkage to the FCU through a flange and is secured with a bolt, spacer, castellated nut and cotter pin. In this application, the interconnect rod was undamaged, but had separated at the rod end attach point. The interconnect rod attachment flange top bolt hole was consistently faded around its circumference and nicks were observed at the edge of the bolt hole at the 4 o'clock and 7 o'clock positions (see photograph 4).

Accessories

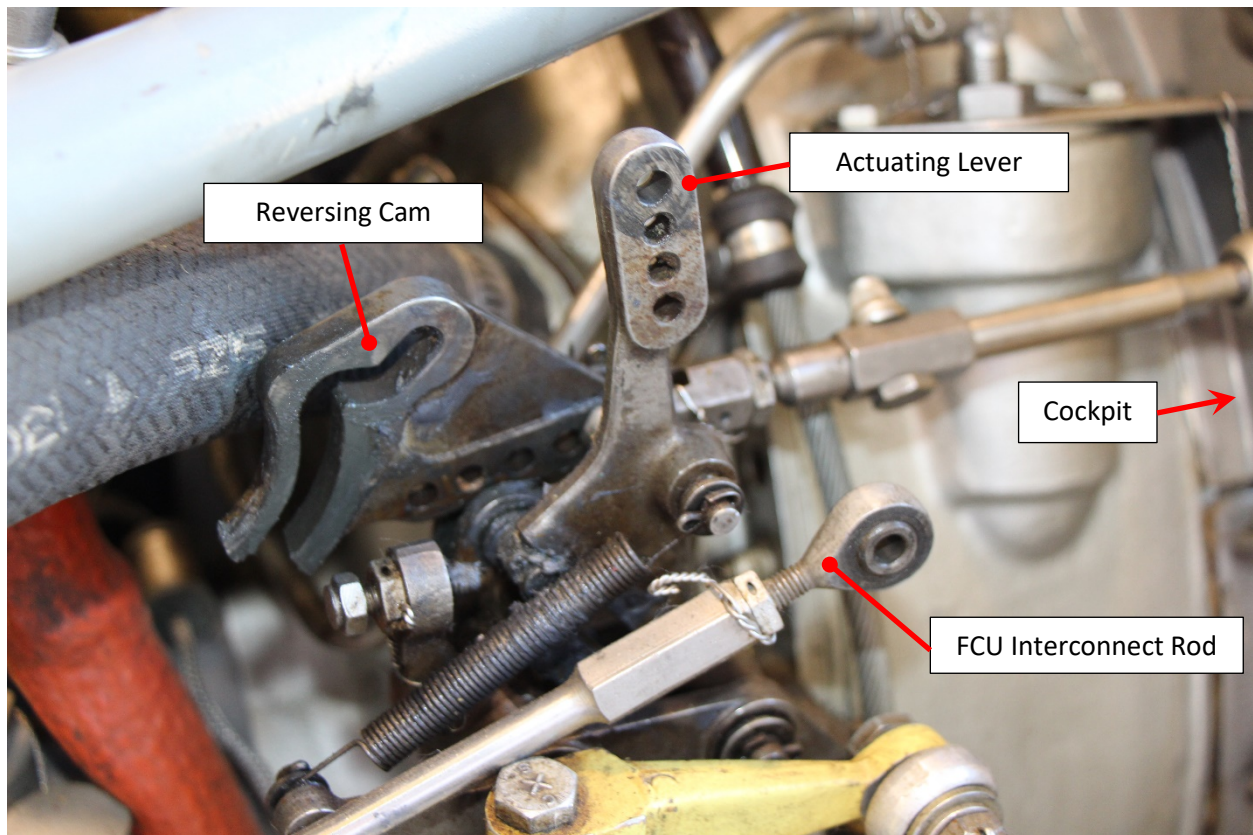
The low-pressure fuel pump filter and high pressure fuel pump filter were both clean and unobstructed. The oil filter screen was also clear. The P3 filter case was free of debris, but the filter was not present. The chip detector was free of debris.



Photograph 1: Accident Airplane



Photograph 2: Engine Data Plate



Photograph 3: Cam Box Assembly and Throttle to FCU Interconnect Rod



Photograph 4: Interconnect Rod End Attachment Point