



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

July 3, 2019

AIRFRAME AND ENGINE EXAMINATION

WPR19LA039

This document contains 05 embedded photos.

A. ACCIDENT

Location: Los Banos, California
Date: December 6, 2018
Aircraft: Airplane Beech A36TC, Registration Number: N361TC, Serial #: EA-139
NTSB IIC: Tealeye Cornejo

B. EXAMINATION PARTICIPANTS:

Stephen Stein
Air Safety Investigator
National Transportation Safety Board
[REDACTED]
Federal Way, WA 98001

C. SUMMARY

On December 6, 2018, at 1230 Pacific standard time, a Beech A36TC, N361TC airplane was substantially damaged when it was involved in an accident at Los Banos Municipal Airport (LSN), Los Banos, California. The private pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

D. DETAILS OF THE INVESTIGATION

Continental Motors, Inc.
Engine Model: IO 520 BA (2) - turbo normalized conversion
Engine Serial No: 122378.R

Initial Observations:

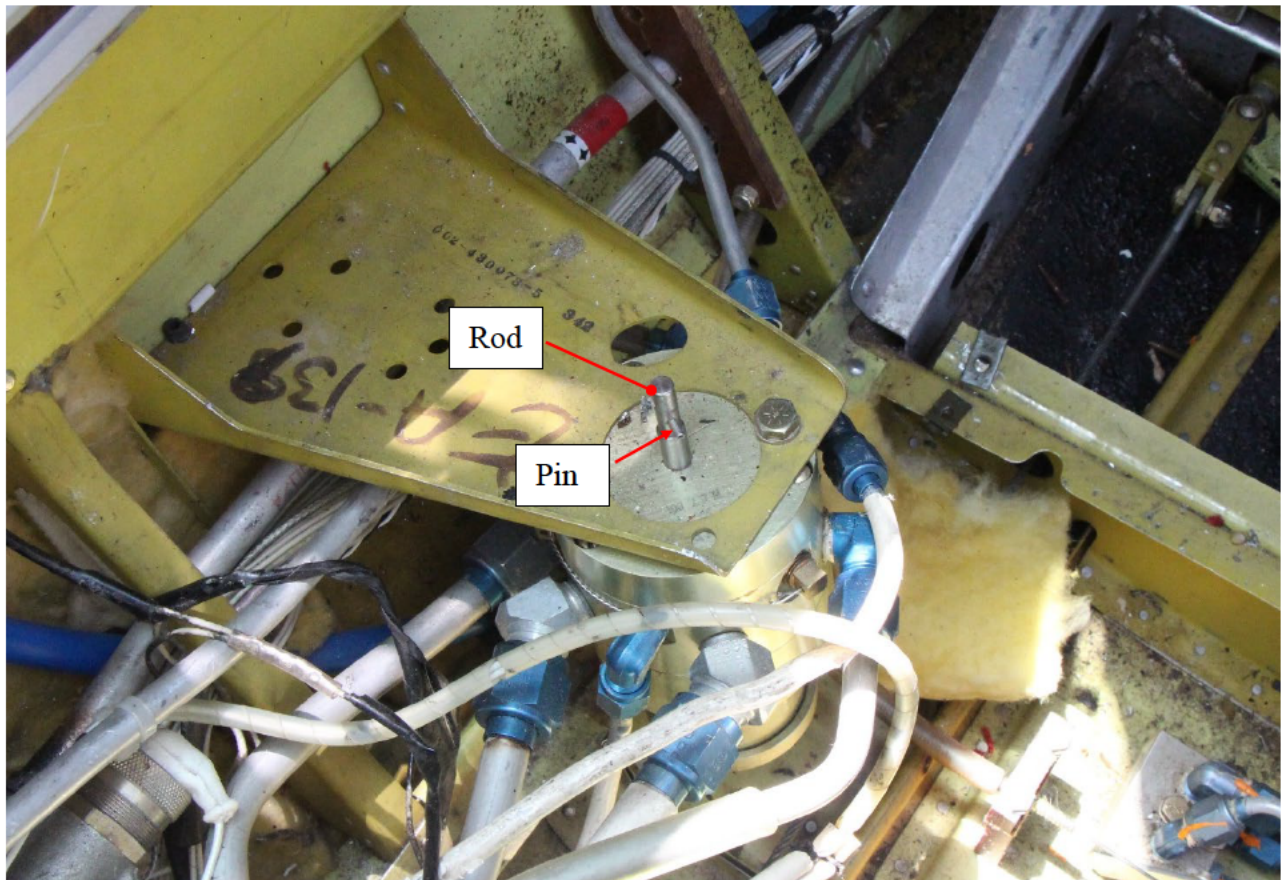
- Engine lower cowl some vertical crush damage
- Propeller blades
 - 2 blades bent aft with nicks and gouges at blade tip

- 1 blade bent opposite direction of rotation and presumed damage within blade hub as blade rotated freely

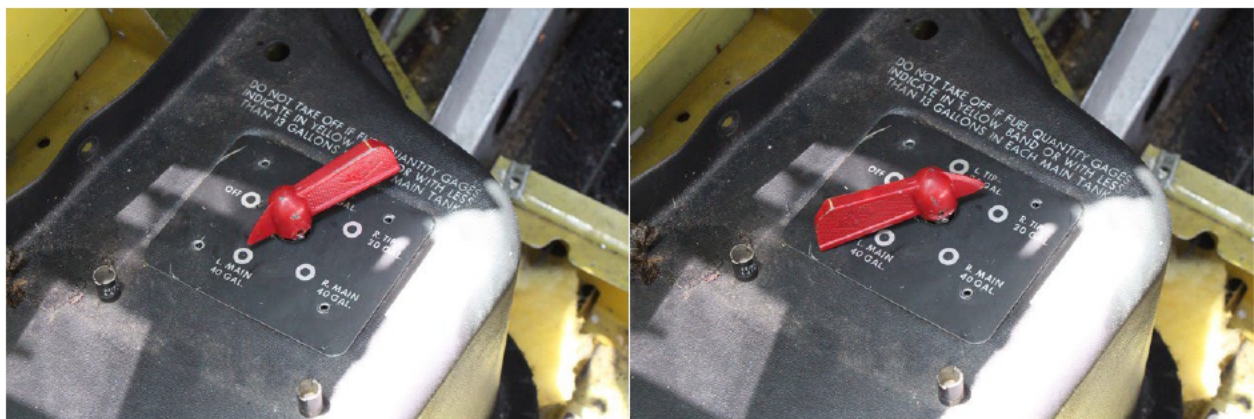
Engine Observations

- Lower cowling panels and top cowling removed for examination
- Accessories
 - Magnetos, fuel pump, mixture and throttle control, throttle body, turbo compressor, waste gate, starter and relief valves mounted and secured
- Fuel lines and oil lines all secured with no indication of line separation at any accessory. Lines were undamaged and unremarkable.
- Oil quantity 11.5 quarts
- Prop lever continuity to prop governor
- Ignition System
 - Ignition harness p leads secured to magnetos
 - Ignition harness secured at each spark plug and all fittings were tight
 - Top spark plugs removed, ground electrode and overall condition consistent with normal wear
 - Continuity confirmed from magneto switch to spark plugs
 - Spark confirmed for each top ignition coil in proper firing order (1-6-3-2-5-4)
 - Impulse couplings were heard when each coil sparked
 - Bottom spark plugs removed, ground electrodes and overall condition consistent with normal wear
- Valvetrain Movement
 - Thumb compression achieved for all cylinders and valvetrain movement confirmed by rotating the propeller
 - Rocker covers removed; intake and exhaust valves displayed normal movement
- Oil System
 - Oil lines secured, no evidence of leaks
 - No evidence of oil breaches at engine case
 - Oil filter did not show any contamination
- Fuel System (Engine)
 - Throttle and mixture continuity to throttle/mixture control
 - Fuel filter at mixture control showed no debris
 - Fuel pump coupling was unremarkable
 - Fuel manifold did not display fuel; manifold filter was free of debris
 - Fuel injectors were all clear
- Fuel System (Airframe)
 - Fuel selector ring was in between detents
 - The fuel selector valve cover and handle had been removed, but the fuel selector rod that rotates the valve was intact and attached to the unit. The fuel selector handle attaches to the rod via two pins; one of which had separated and was not recovered.

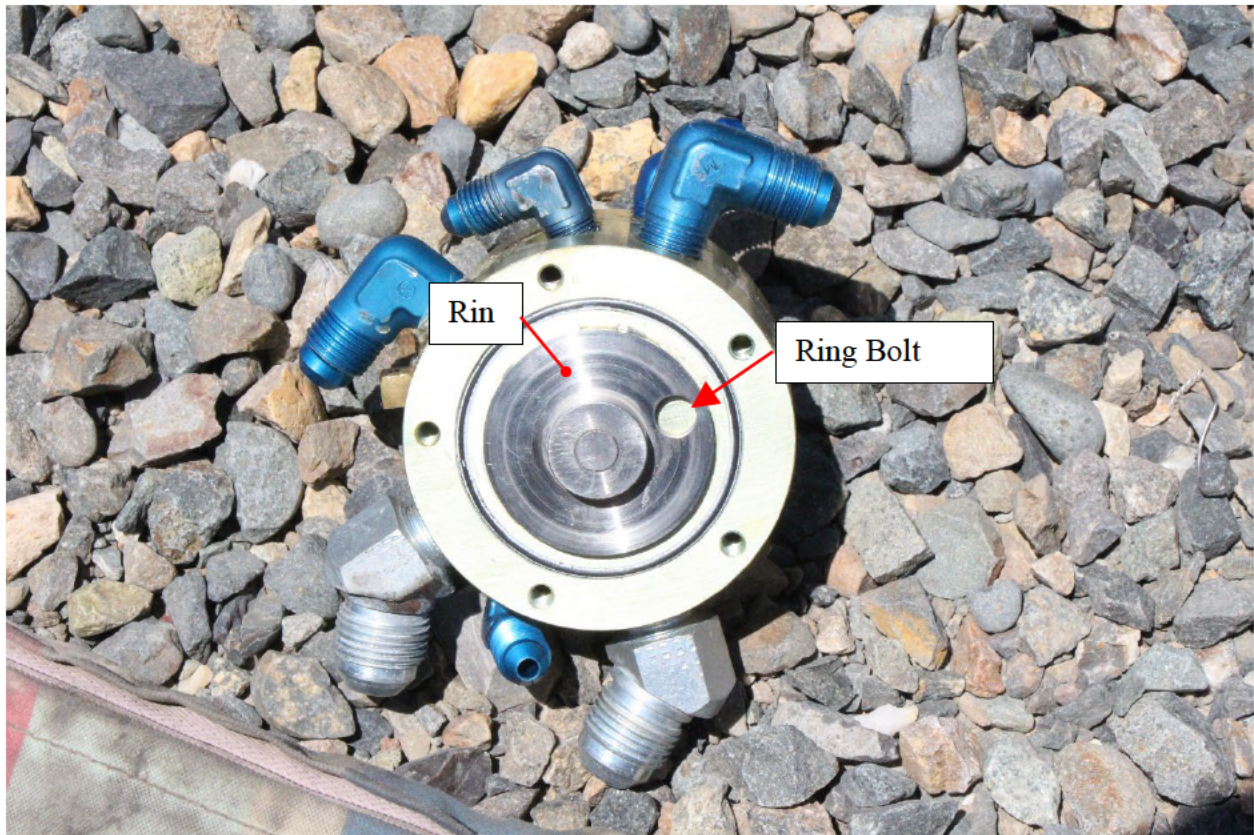
- fuel selector handle operates a ring with one hole at bottom of unit that expels fuel to engine via selected tank
- The fuel selector ring porthole lines up with desired tank; in this case the ring porthole was between detents.
- Based on selector position, the detent may have been between the Left and Right tip tanks; see photographs 1-3
- Fuel gascolator screen was free of debris (see photograph 4)



Photograph 1: Fuel Selector Valve and Gascolator



Photograph 2: Possible Fuel Selector Positions Based on Location of Selector Rod



Photograph 3: Fuel Selector Ring and Porthole Between Detents



Photograph 4: Gascolator Fuel Bowl

Submitted by: Stephen Stein