

**NATIONAL TRANSPORTATIONS SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594**

SUMMARY OF ENGINE EXAMINATION

-- CEN17LA014 --

A. ACCIDENT

Location: Beasley, Texas
Date: October 8, 2016
Time: 1840 central daylight time
Aircraft: Cessna 150M airplane (s/n 15078689), N704LE

B. PARTICIPANTS

Tom Latson
Aviation Accident Investigator
National Transportation Safety Board

Nathan Simons
Aviation Safety Inspector – Operations
Federal Aviation Administration

Jeff Hayes
Aviation Safety Inspector – Airworthiness
Federal Aviation Administration

Kurt Gibson
Air Safety Investigator
Continental Motors, Inc.

C. ACCIDENT SUMMARY

On October 8, 2016, about 1850 central daylight time, a Cessna 150M airplane, N704LE, was substantially damaged during a forced landing following a loss of engine power near Beasley, Texas. The pilot was not injured. The airplane was registered to and operated by private individuals under the provisions of 14 Code of Federal Regulations Part 91 as a solo instructional flight. Day visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The flight originated from the Wharton Regional Airport (ARM), Wharton, Texas, about 1600. The intended destination was the Sugar Land Regional Airport (SGR), Sugar Land, Texas.

Summary of Engine Examination

D. GENERAL DESCRIPTION

Airframe

The Cessna 150M is a two place, high wing, single-engine airplane, with a fixed tricycle landing gear arrangement. The airplane is certificated in the utility category.

Engine Assembly

The Continental O-200-A engine is capable of producing 100 horsepower at 2,750 rpm. The engine is a four-cylinder, horizontally opposed, air cooled, direct drive, normally aspirated, reciprocating design.

Propeller Assembly

The McCauley 1A102/OCM6948 propeller assembly is a two-blade, fixed pitch design, fabricated from an aluminum alloy.

E. DETAILS OF AIRCRAFT EXAMINATIONS

The NTSB investigator-in-charge did not conduct an on-scene examination. The airplane was relocated from the accident site to the Skyway Manor Airport, Pearland, Texas. A post-recovery engine examination was conducted on December 19, 2016.

The examination was completed under the supervision of an NTSB investigator. Continental Motors provided technical support to the investigation as a party to the NTSB.

F. DESCRIPTION OF ACCIDENT SITE

The airplane came to rest inverted in a plowed agricultural field. The vertical stabilizer, rudder and left wing were damaged when the airplane nosed over on landing.

G. SUMMARY OF EXAMINATION¹

Engine – Continental O-200-A, s/n 60473-4-A

Propeller – McCauley 1A102/OCM6948, s/n G15042

The engine remained attached to the airframe through the engine mount. The engine appeared to be intact, with the upper portion covered in dirt. All four cylinders remained attached to the crankcase cylinder bays; they appeared to be undamaged. The carburetor remained attached to the engine and appeared to be undamaged. No evidence of fuel leaks was observed. The throttle and mixture control linkage appeared to be properly connected and secured. The exhaust system remained attached to the engine and appeared undamaged. The induction system remained secured to the engine, with no indication of induction leaks.

¹ Directions related to accident site placement and component damage/deformation are with respect to an intact airframe unless otherwise noted.

Summary of Engine Examination

G. SUMMARY OF ENGINE EXAMINATION *(concluded)*

Borescope examination of each cylinder revealed the presence of surface oxidation; the cylinders and valves appeared otherwise unremarkable. Each piston exhibited normal operating signatures. Internal engine and accessory section continuity was confirmed through crankshaft rotation. Compression and suction was obtained at cylinder nos. 1, 3, and 4. Compression was not obtained on cylinder no. 2. Further examination of cylinder no. 2 revealed that exhaust valve was stuck in the full open position. Upon disassembly, the exhaust valve was observed to have extensive carbon deposits on the stem. No other anomalies with respect to the no. 2 cylinder were observed. Rocker arm movement was confirmed at each valve associated with cylinder nos. 1, 3 and 4. In addition, action of the no. 2 cylinder intake valve appeared normal. However, the no. 2 cylinder exhaust valve was not free to move consistent with the stuck exhaust valve. No anomalies with respect to the no.2 pushrod or rocker arm were observed.

Both magnetos remained secured to the engine and appeared to be undamaged. The ignition harness remained attached to both magnetos and to each spark plug; the harness appeared to be undamaged. The spark plugs were securely installed and appeared undamaged. Each spark plug electrode exhibited an accumulation of soot consistent with operation with a rich mixture. No other anomalies were observed. A spark was observed at each ignition lead during engine crankshaft rotation.

The oil sump was intact and appeared undamaged. The oil drain was secure. The oil filter was securely installed. No evidence of oil leaks was observed. The date and tachometer time written on the oil filter were "12-10-15" and "4038.36," respectively.

The propeller remained attached to the propeller spacer and flange. Both propeller blades displayed minor leading-edge polishing, chordwise scratches, and minor aft bending.

The airplane recording hour (Hobbs) meter and tachometer indicated 2373.4 hours and 4131.60 hours, respectively.