



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

October 7, 2020

ENGINE EXAMINATION 2

ERA20LA320

This document contains 4 embedded photos.

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1.0 EXAMINATION PARTICIPANTS:

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2.0 SUMMARY

Follow-up examination of N336C, a Stinson 108-2, 1947, was conducted on October 7, 2020 at Blairstown Airport, Blairstown, NJ. Examination of the airframe revealed a disconnected mixture control arm in the cut-off position.

3.0 DETAILS OF THE INVESTIGATION

3.1 Engine Examination

Stinson 108-2, serial 108-3336

Current Tach time 2622.11

Last annual inspection conducted 12/1/2019 at 2619.91 tach time.

Previous annual inspection conducted 10/17/2005 at 2618.87 tach time.

Examination of propeller blade 1 revealed aft bending 7 inches from tip and no leading edge damage. Examination of propeller blade 2 revealed 60 degrees of aft bending 20 inches from tip, leading edge damage near the tip, chordwise scratching on the propeller face. The propeller damage was consistent with engine stopped or windmilling at impact.

All spark plugs were present and connected to ignition leads. Ignition leads 1T, 2T, 3T, 4T, 5T, 6T, 1B, and 2B finger tight or loose. Top spark condition was unremarkable.

Both magnetos were present and securely installed and connected. Magneto to engine timing was within specifications. Magnetos produced acceptable spark from all 12 ignition leads when rotating engine by hand.

Rotating engine by hand indicated some compression in all 6 cylinders. Rotating engine by hand after removal of one spark plug from each cylinder did not disclose any unusual stiffness or binding. Oil dipstick indicates crankcase approximately one half full. No evidence of stuck valves or bent valve pushrods noted.

Carburetor mixture control found disconnected at carburetor. Throttle control and carburetor heat control found connected and secure. Carburetor mixture lever on carburetor found in idle cutoff position, throttle lever on carburetor found in full power position, carburetor heat found in off position. Continuity for all engine controls were established; however, travels could not be verified (throttle due to impact related structural deformation of aircraft/engine mount, mixture due to disconnection, carburetor heat due to impact related damage to carburetor heat box).

Carburetor fuel bowl drain plug safety wire found cut, plug found installed finger tight. No fuel found in carburetor bowl. Carburetor inlet fitting found finger tight and ears on safety gaskets on both sides found flat (not bent against nut flats). Carburetor inlet screen seized to casting, but internal borescope exam revealed no significant contamination or obstruction. Throttle plate found secure to shaft. Venturi, main fuel nozzle, and accelerator fuel nozzle appear properly installed and secure.

No obstructions were found in carburetor or induction system. Induction air filter present and unremarkable.

No fuel found in fuel gascolator bowl.

Inspector used human breath to conduct the following tests. Both fuel vents (on fuel caps) found clear. Fuel tank outlets found clear. Fuel lines from fuel tank outlets in both wings found clear through fuel valve to gascolator. Fuel valve operation verified correct and clear. Fuel line from gascolator to carburetor clear and not compromised (visual examination).

3.2 Engine Exam Photos



Photo 1: Airplane with wings removed (Photo Courtesy of Federal Aviation Administration)

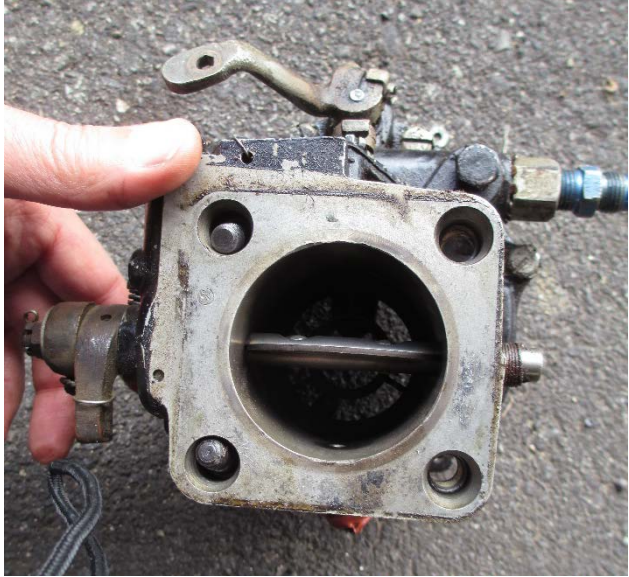


Photo 2: Carburetor throat and throttle valve (Photo courtesy of Federal Aviation Administration)

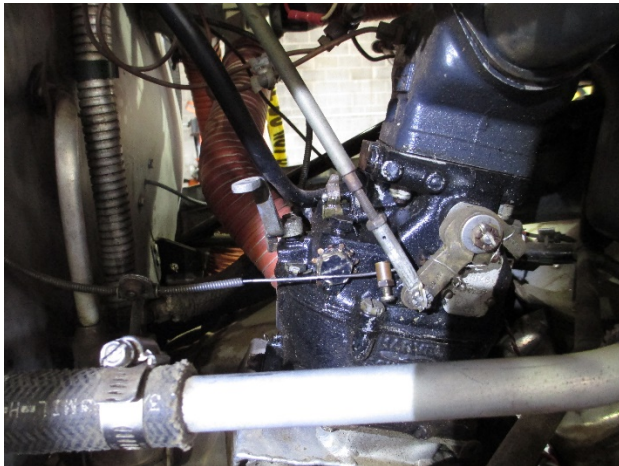


Photo 3: Disconnected mixture control cable (Photo courtesy of Federal Aviation Administration)



Photo 4: Mixture control cable connector fitting (Photo Courtesy of Federal Aviation Administration)