

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

SUMMARY OF AIRCRAFT EXAMINATION

-- CEN19LA281 --

A. ACCIDENT

Location: Grand Rapids, Minnesota
Date: August 21, 2019
Time: 1338 central daylight time
Aircraft: Stinson 108-3 (s/n 108-3647), N647C

B. PARTICIPANT

Timothy Sorensen
Senior Aviation Accident Investigator
National Transportation Safety Board
Denver, Colorado

C. ACCIDENT SUMMARY

On August 21, 2019, about 1338 central daylight time, a float-equipped Stinson 108-3 airplane, N647C, was substantially damaged during a forced landing following a loss of engine power shortly after takeoff from Lily Lake located immediately north of the Grand Rapids/Itasca County Airport (GPZ), Grand Rapids, Minnesota. The pilot sustained minor injuries. The airplane was registered to a private individual and operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed, and the flight was not operated on a flight plan. The local flight was originating at the time of the accident.

D. DETAILS OF EXAMINATION

An engine examination was conducted on October 1, 2019, by the NTSB investigator-in-charge. The examination was conducted at the Airways Aviation Center located at GPZ. Mechanics employed by Airways Aviation assisted the NTSB during the examination.

E. SUMMARY OF EXAMINATION¹

Airframe – Stinson 108-3 (s/n 108-3647)

The airframe exhibited damage to the aft fuselage, left wing, left horizontal stabilizer, and right float. The right wing appeared intact with exception of minor deformation at the wing tip. At the time of the examination, the right wing had been removed at the wing root/fuselage.² The fuel selector was set to the right tank at the time of the examination.

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

² Maintenance personnel reported that the right wing was removed at the accident site to facilitate recovery.

Summary of Aircraft Examination

E. SUMMARY OF EXAMINATION *(concluded)*

Engine control continuity was confirmed. The tachometer indicated 1,711.82 hours.

The left-wing fuel tank was compromised and was not examined. The right-wing fuel tank appeared to be intact. The fuel cap was securely installed and functioned normally. The fuel vent appeared to be intact and unobstructed. Borescope examination of the fuel tank did not reveal any evidence of debris. The fuel inlet was unobstructed, and the fuel pick-up screen was intact.

Engine – Continental O-470-R (s/n 203378-70R)

The engine remained securely attached to the engine mount, and the propeller remained securely attached to the crankshaft propeller flange. No damage was observed related to the mount or the attachment fittings. No evidence of a propeller strike was observed. Visual examination did not reveal any anomalies with respect to the engine, engine accessories, or related airframe components.

The lower spark plugs were removed. They appeared intact and displayed normal combustion signatures. The engine exhibited internal and accessory section continuity when the propeller was rotated by hand. Cylinder compressions ranged from 68/80 to 78/80 psi with exception of cylinder no. 1 which was 50/80 psi.

The carburetor and air box were securely attached and appeared intact. The carburetor venturi was in position and appeared intact. The carburetor fuel screen was intact and contained minor debris. The extent of the debris was not enough to significantly reduce engine fuel flow. The carburetor heat appeared to function normally. The air filter was intact and unobstructed. The intake and exhaust ducting appeared intact. Borescope examination of the mufflers were unremarkable. Fuel recovered during the exam was clear and exhibited a blue tint consistent with 100 low lead aviation fuel. No water was detected in the fuel sample.

F. SUMMARY OF ENGINE TEST RUN

The airplane was moved from the hangar to the ramp. A portable fuel supply was connected at the right-wing root/fuselage fuel inlet. The engine started without difficulty on the first attempt and ran smoothly. The engine speed was limited for safety considerations. Magneto and carburetor heat checks were normal. The engine oil pressure remained within normal operating limits during the run.

No anomalies consistent with an inability to produce rated power were observed.