



**National Transportation
Safety Board**

Memorandum For The Record

DATE: September 24, 2019

FROM: Courtney Liedler, NTSB IIC

SUBJECT: Details of Aircraft Wreckage Examination for C-GOZJ

On September 22-23, 2019, the NTSB, Textron, and CMI completed an initial on-site documentation of the accident scene. On September 25, 2019 the wreckage was removed from the field and taken to a salvage facility.

Airframe

The cockpit control wheels, control columns, and rudder pedals were all impact damaged. The rudder pedals and rudder pedal torque tubes were partially impact separated from their mounts. Flight control continuity was established from the rudder pedals to the aft section of the baggage floorboards where they were strain overloaded and cut by first responders. The elevator cables were also strain overloaded at the baggage floorboard section and cut by first responders. Aileron cables were traced from the aileron chains to the wing root where they were strain overloaded and/or cut by first responders. Rudder and elevator control continuity was established from the cut and overloaded sections from the separated tail cone section to the respective control bellcranks. Horizontal stabilizer trim was at the full elevator leading edge up position. Aileron and flap control cable continuity was established from the wing root cable separations to the flight control surface bellcranks. The ailerons and flaps were attached to the wing.

Aircraft was equipped with extended range bladder type fuel tanks and a fuel selector valve. The bladder tanks were intact. The right wing contained approximately 20 gallons of aviation fuel that was drained into a container for examination. Water detection paste was used to identify the presence of water, no water was detected. The left wing contained approximately one gallon of aviation fuel, that was drained for examination with approximately 6oz of water. Presence of water was confirmed with use of water detecting paste. The wings were cut from the aircraft during the occupant rescue process. Fuel lines were severed at each cut location. Three of the four fuel bladder fuel screens were clear. The aft right bladder fuel screen was displaced during rescue operations and was not recovered. The fuel header tank was crushed. The fuel shut-off valve was impact separated from the header tank. The fuel line from the selector valve to the shut-off valve was damage separated approximately 10" aft of the header tank. The fuel caps were attached and closed. The fuel shut-off valve was disconnected from the fuel lines and verified to be free of obstructions. The fuel selector valve was removed and disassembled. The position detents held

the fuel selector in its' selected position. The fuel selector handle and valve were in the BOTH position. The fuel cap gaskets were clean and supple. Slight cracks were present when the gaskets were flexed.

EDO Model 597-2790 amphibious floats were installed. The forward section of the floats were compressed and turned upward approximately 45°. The forward landing gear wheels were impact separated and imbedded in the soil approximately 18”.

5-Point harness were cut by first responders.

The portion of the propeller hub containing the serial number was not recovered. No hour meter was installed. Aircraft tach reads 54.3. Access to the aircraft airworthiness was not provided.

The instrument panel was severely impact damaged and did not provide any reliable readings of the instrument gauges.

Engine

The engine had been removed from the impact crater by first responders in order to recover the occupants. The engine had separated from the airframe and was covered with mud.

The induction and exhaust systems were impact damaged. The three bladed propeller remained attached to the crankshaft propeller flange and all three blades were bent aft. One blade was broken out of the hub.

The throttle body/metering unit exhibited impact damage. The metering unit was impact separated from the throttle body. The fuel screen was removed and some debris was observed.

The fuel manifold valve remained attached to the engine. The fuel line fitting for the number one cylinder had fractured. The fuel manifold valve was partially disassembled and the diaphragm, plunger and retaining nut were intact. The fuel screen was free of debris and the cavity contained a mixture of fuel and water.

The fuel pump was removed and the drive coupling was intact. The fuel pump drive rotated freely by hand.

The magnetos had separated from their mounts but remained attached to the engine by the ignition harness. Both magneto drives turned freely by hand with impulse coupling engagement. The left magneto produced spark on the 1-3-5 top and bottom number 6 ignition leads. The right magneto produced spark on the 2 and 4 cylinder top ignition leads. The ignition harness exhibited impact damage and several ignition leads were partially severed.

The top spark plugs were removed and the exhibited light grey combustion deposits. The electrodes were worn – normal when compared to the Champion Check a Plug chart.

The cylinders were inspected with a lighted borescope and no anomalies were noted to the pistons, cylinder walls, valves or bottom spark plugs.

The crankshaft was rotated by hand using the propeller. Continuity from the propeller to the accessory section of the engine was noted and thumb compression was obtained on all six cylinders.

Propeller

The three-bladed McCauley constant-speed propeller was still attached to the engine and the engine crankshaft propeller flange remained attached to the propeller hub. All three propeller blades were bent aft, with no leading edge damage/polishing or chordwise scratching. One of the propeller hubs broke during impact and the propeller blade detached from the propeller hub during the on-scene examination.