

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

SUMMARY OF AIRCRAFT EXAMINATION

-- CEN20MA044 --

A. ACCIDENT

Location: Lafayette, Louisiana
Date: December 28, 2019
Time: 0921 Central Standard Time
Aircraft: Piper PA 31T

B. PARTICIPANTS

Jennifer Rodi
Senior Aviation Accident Investigator
National Transportation Safety Board

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Summary of Aircraft Examination

Kathryn Whitaker
Air Safety Investigator
Piper Aircraft

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Air Safety Investigator
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Air Safety Investigator
Hartzell Propeller

C. ACCIDENT SUMMARY

On December 28, 2019, about 921 central standard time, a Piper PA 31T airplane, N42CV, was destroyed when it impacted terrain shortly after takeoff from Lafayette Regional Airport/Paul Fournet Field (LFT), Lafayette, Louisiana. The commercial pilot and four passengers were fatally injured; one passenger sustained serious injuries. Two individuals inside a building sustained minor injuries and one individual in a car sustained serious injuries. The airplane was destroyed by impact forces and a postimpact fire. The personal flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

D. AIRCRAFT INFORMATION

According to Federal Aviation Administration records, the airplane, a Piper PA 31T airplane (serial no. 31T-8020067), was manufactured in 1980. The airplane was powered by two Pratt and Whitney Canada PT6A-28 engines (serial no. PCE-52244 & PCE-52249) rated at 715 shaft horsepower. The engines were equipped with 4-blade Hartzell propellers.

E. DESCRIPTION OF ACCIDENT SITE

The initial impact point was located in trees and transmission lines on the south edge of Verot School Road. The scar and damage to the first tree was measured to be about 30°, consistent with a right wing low attitude at the time of impact. The first ground scar was located on the north edge of the road. A debris field extended from the road, through a United States Post Office parking lot, and through the majority of an adjacent field. The debris field included fragmented and burned pieces of the airplane and tree debris, and extended from the trees and transmission line, along an approximate bearing of 315°, for 789 ft. The right wing, the outboard left wing, both engines, both elevator controls, the rudder, the instrument panel, and forward cabin separated from the main fuselage and pieces were located in the debris field. The main wreckage consisted of the main fuselage and the inboard left wing.

Summary of Aircraft Examination

A United States Post Office building was located to the right of the debris field. Several windows in the front of the building were shattered during the impact sequence and broken and fragmented glass lay on the sidewalk in front of the building within the debris field. A car, which was originally parked in front of the building, was located at the edge of the parking lot. The car was inverted; the roof of the car was crushed and all of the windows were broken out. The car exhibited heat and fire damage.

F. DETAILS OF AIRCRAFT EXAMINATIONS

Right Wing

The right wing separated from the fuselage and was impact and fire damaged and fragmented. The inboard portion of the right wing came to rest in the parking lot near the inverted vehicle. The right main landing gear remained with this assembly and the landing gear was within the wheel well. The right aileron was impact separated and fragmented into two large sections. The aileron cables were impact damaged in several locations and exhibited broomstraw signatures. Control cable continuity could not be confirmed.

The right flap assembly came to rest in the field. The flap jack screw separated from the assembly; no threads were visible consistent with the flaps being retracted or up.

The right wing tip tank separated from the wing. Witness marks on the inboard side of tank and impact marks on trailing top edge of the tank were consistent with impact with the light pole.

Left Wing

The left wing separated from the fuselage and was impact and fire damaged and fragmented. The inboard portion of the left wing, to include a portion of the left flap and the left nacelle, came to rest adjacent the fuselage and empennage. The left main landing gear assembly was located in the wheel well. The left aileron cable remained with the wing and exhibited broomstraw signatures consistent with impact and overload. Control cable continuity could not be confirmed. No threads were visible on the flap jackscrew consistent with the flaps being retracted or up.

The left engine cowling and left tip of the left aileron were located in the debris field and exhibited witness marks and a circular indentation consistent with impact with the tree

The left wing tip tank separated and was located on the left side of debris field on the side of the road adjacent a tree. The tip tank contained fuel. Witness marks on top of tank were consistent with impact with transmission lines.

Summary of Aircraft Examination

Empennage

The empennage remained attached to the aft fuselage and came to rest at the end of the debris field, adjacent the inboard left wing and the left engine. The empennage was impact and fire damaged.

The left and right horizontal stabilizer and elevator were fragmented and distributed through the debris field. The right horizontal stabilizer exhibited leading edge damage about mid span consistent with tree impact. Both the right and left trim barrels exhibited about 1.25 inches or 11 threads consistent with 20 degrees tab trailing edge down - at the stop – or a nose up trim setting.

The rudder separated partially and was fragmented. Both the rudder and elevator control cables were continuous and correct from the control surfaces forward, terminating at the impact damage of the forward cabin. The separation surfaces exhibited broomstraw signatures consistent with impact damage and overload separation. The stability augmentation system servo remained mounted in the aft fuselage. The servo arm was up consistent with system activation.

Fuselage

The fuselage was fragmented and exhibited exposure to heat and fire. The cabin seats, personal effects, and fragmented remains of the instrument panel were distributed in the debris field.

The throttle quadrant was located to the right side of the debris field near the inverted car. The throttle quadrant was impact and fire damaged and did not provide any reliable positions or indications.

The static source selector was selected to normal. The pitot mast was fragmented and remained with the nose sections. The stall margin indicator needle was impact separated and exhibited a needle position within the red and black stall warning area.

Engines

The right engine separated from the right wing and was located 470 ft from the initial impact point. The engine exhibited impact and fire damage. The right propeller assembly remained attached to the engine. Propeller blade tips were located in debris field parking lot and field. One propeller blade separated at the hub and 3 blades that remained attached. All 4 blades exhibited chord wise scratches, twisting, and bending.

Summary of Aircraft Examination

The left engine separated from the left wing and was located at the end of the debris field, about 786 ft from the initial impact point. The engine exhibited impact damage and the left propeller separated and was located in the debris field.