

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



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WRECKAGE EXAMINATION SUMMARY

May 29, 2025

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A. ACCIDENT

Location: Plymouth, New York
Date: May 28, 2023
Time: 1452 EDT
1852 coordinated universal time (UTC)
Airplane: N8775X, Cessna 182D

B. WRECKAGE EXAMINATION SUMMARY

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C. SUMMARY

On May 28, 2023, about 1452 Eastern Daylight Time, a Cessna 182D, N8775X, was substantially damaged when it was involved in an accident near Plymouth, New York. The commercial pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 skydiving flight.

The purpose of the flight was to drop 4 skydivers out of the airplane.

According to Federal Aviation Administration (FAA) Automatic Dependent Surveillance - Broadcast (ADS-B) data and air traffic control information, the first ADS-B target at 1421:49 was located about .75 nautical mile nearly due north from runway 1 at Lt Warren Eaton Airport (OIC), Norwich, New York consistent with a departure to the north. At about 1427, the pilot contacted the Delancey Sector radar position of the Boston Air Route Traffic Control Center and confirmed that the flight was on a discrete beacon code of "7301." The pilot also confirmed with the controller that the flight intended to climb to 11,000 ft, to which the controller advised the pilot to report when the flight was within 2 minutes of jumping.

At about 1441 the pilot advised the controller that the flight was 2 minutes from releasing jumpers and the flight climbed to a maximum pressure altitude of 11,600 ft attaining and maintaining that altitude from 1443:49 to 1443:52, then began to descend. At 1444 when in close proximity to OIC, the pilot informed the controller that the jumpers were away. The flight continued descending and at 1446, the pilot requested frequency change to OIC Common Traffic Advisory Frequency (CTAF)

which was approved. One co-owner of the sky dive operation reported that the pilot announced on the OIC CTAF that the skydivers were away. The pilot made another announcement on the CTAF that he was at 6,000 ft msl descending for downwind. The same co-owner reported hearing another transmission from the pilot but the "...call did not sound like a normal one and I could not identify what he said. I thought by the sound of his voice something was off." The co-owner went outside to spot the airplane then went back into the hangar and attempted to communicate with the pilot, but he did not reply.

Further review of the ADS-B data indicated that after alerting the controller that the jumpers had departed the airplane, while descending the flight proceeded slightly east of OIC then north and then west of OIC. While west of OIC flying in a northeasterly direction the last ADS-B data at about 1450:35, placed the airplane about 1.74 nautical miles west-northwest from the approach end of runway 01 at OIC.

A witness who was located about 0.9 nautical mile (nm) west-southwest from the accident site reported she and her husband were looking east and heard a strange noise that was "really close." She then heard an airplane fly over their house, "very low", just clearing the tops of nearby trees. As it flew over their house with a view of the left side of the airplane, they heard the engine sputtering and when the airplane was over trees, the engine shut off. She indicated that the pilot tried to start it. They didn't hear any more engine sounds then heard the impact. They could not see where the airplane went down and there were no flames or explosion. She called 911 to report the accident.

Another witness who was on the front porch of her house located about 860 ft east-southeast from the accident site reported hearing the engine shut off when the jumpers departed the airplane then she heard the engine start up again. A short time later she heard a car crash or metal sounds then sirens. She thought there was a car accident and noticed vehicles on a road. When asked if the engine sound was continuous from the time she heard power start up again to the crunching metal sound time she reported she did not hear the engine between those times.

The accident location was about .8 nm east-northeast from the last ADS-B data point and also about 1 nm west-northwest from the center of OIC, the intended airport.

D. DETAILS OF THE INVESTIGATION

1.0. General Airplane Information

1.1 Airplane Description

The one-seat, high-wing airplane, serial number 18253175, was manufactured in 1961. It was powered by a 230-horsepower Continental

Motors, Inc., O-470-L engine, serial number (SN) 66086-6-L, and equipped with a two-bladed, constant-speed McCauley 2A34C29-AE propeller, SN 601158.

1.2 Fuel System Information

Fuel was supplied to the engine from two rubberized, bladder-type fuel cells, one located in each wing. From the tanks the fuel flows by gravity through the selector valve, a fuel strainer, to the carburetor (Figure 1).

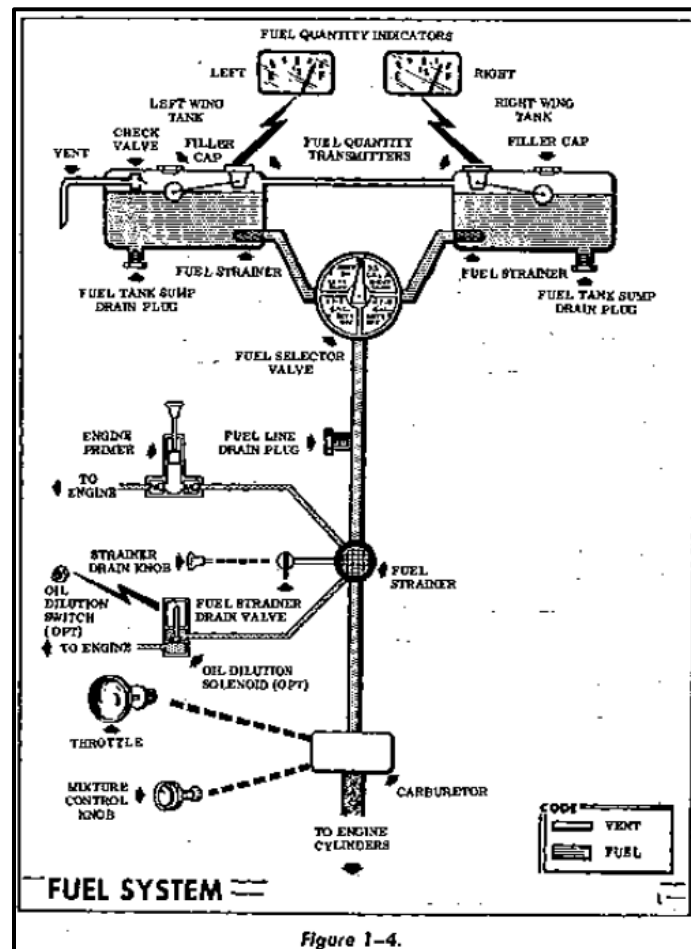


Figure 1 Fuel System Illustration Without Optional Auxiliary Fuel Tank

According to the airplane Owner's Manual, the total volume of each wing fuel tank was 32.5 gallons, while the usable amount of fuel in all flight conditions was 27.5 gallons, resulting in an unusable amount of fuel in all flight conditions of 5.0 gallons in each fuel tank. The manual also indicates that in level flight an additional 3.5 gallons of fuel is available, resulting in an unusable fuel load in level flight of 1.5 gallons.

1.3 Fuel System Modifications After Manufacture

A review of the FAA Airworthiness File from Oklahoma City, Oklahoma, revealed that since manufacture, the airframe and engine were modified for use of unleaded automotive fuel in accordance with (IAW) Supplemental Type Certificate (STC) SA2000CE SE1997CE. The engine STC was applicable to engine serial number 1009439¹. There were no other fuel systems modifications recorded.

2.0. On-Scene Airframe and Engine Documentation

2.1 Debris Field and Accident Wreckage Path Documentation

Examination of the accident site revealed the wreckage came to rest at 42.570059° north latitude and -75.547635° west longitude. The airplane came to rest on a magnetic heading of about 189° on a slight downsloping terrain and was in a 49° nose-low and tail high attitude (Figure 2). It was also in a right wing high attitude; the left wing was separated at the wing root and was in close proximity to the main wreckage.



Figure 2 Right Side View of the Wreckage At the Accident Site

Any impact damaged components came to rest in close proximity to the main wreckage.

Further examination of the accident site revealed a broken tree limb located near the resting position of the left wing was noted to be fractured

¹ The engine SN installed at the time of the accident was 66086-6-L.

from the tree about 30 ft above ground level. The impact mark on the tree was on the south side of the tree.

A very slight smell of fuel in the area of the separated left wing was noted. Very slight fuel blight of tree leaves adjacent to the resting position of the left wing root was noted.

2.2 Fuselage/Aft Empennage

The left side of the fuselage just aft of the left main landing gear exhibited compression buckling (Figure 3) which continued to the bottom. The aft empennage exhibited minimal damage.



Figure 3 Left Side View of the Fuselage and Aft Empennage

2.3 Wings

2.3.1 Left Wing

Examination of the left wing which was structurally separated but found in close proximity to the resting position of the wreckage revealed it exhibited extension damage to the leading edge from about the landing light inboard (Figure 4).

Further examination of the left wing revealed the flap and aileron remained attached. The lift strut exhibited overload fracture about 3 ft outboard of the lower attach point. An impact mark was noted on the leading edge inboard of the pitot tube. Another impact mark was noted on the leading edge near wing station 154 associated with tree contact. The impact mark near

the pitot tube was associated with the airplane being in a left bank of about 30°. No fuel was found in the breached bladder tank.

A vented fuel cap was installed and it checked satisfactory. The fuel tank placard did not have usable fuel capacity (Figure 5). The fuel transmitter moved freely to the up and down stop positions. No evidence of fuel staining aft of the fuel filler cap was noted.



Figure 4 Frontal View of the Separated Left Wing Following Extraction From The Resting Position



Figure 5 View of the Placard Adjacent to the Left Fuel Filler Cap

2.3.2 Right Wing

Examination of the right wing which remained structurally attached (Figure 6) revealed it contained 25 ounces of blue colored fuel consistent with 100 low lead. The lift strut remained attached at both ends. A vented fuel cap was in place and it checked satisfactory; there were no fuel stains aft of the fuel cap. The flap and aileron remained connected; the flap appeared to be retracted. A placard by the fuel cap does not specify the total capacity or usable capacity (Figure 7). The fuel transmitter moved freely to the up and down stop positions.



Figure 6 Upper View of the Right Wing



Figure 7 View of the Placard Adjacent to the Right Fuel Filler Cap

2.4 Flight Controls and Flaps

Elevator, rudder, and right aileron direct flight control continuity was confirmed from the cockpit to each control surface. The left aileron direct flight control cable remained attached in the cockpit and bellcrank near the control surface but exhibited tension overload in the left wing root area. The aileron balance cable remained attached to each bellcrank near each control surface but exhibited tension overload at the right wing root area.

The right flap up and down cables were satisfactory from the flap pull handle to the bellcrank near the flap. The left flap down cable was separated at the turnbuckle at the upper door post and overload separation at the lower door post. The left flap up cable was fractured at the upper door post in the area of a pulley. The two ends of the fractured left flap up cable were retained for examination by the NTSB Materials Laboratory. The flaps were retracted by physical inspection of the flaps and flap tracks and the flap pull handle.

2.5 Landing Gear

Both main landing gear remained attached but the nose landing gear wheel assembly and lower strut was separated from the nose gear strut assembly (Figures 8 and 9).



Figure 8 View of Right Main Landing Gear and Separated Nose Wheel Assembly and lower Strut



Figure 9 Frontal View Showing Both Main Landing Gears and Nose Gear Strut Assembly

2.6 Cockpit

The left and right floors of the cockpit exhibited extensive compressive buckling. The instrument panel was also distorted. The upper skin of the center section of the wing was heavily distorted on the left side. The pilot's inboard and outboard seat tracks were displaced up on the forward ends and several areas of the outboard seat track with the seat pin lock holes were fractured (Figure 10).



Figure 10 View of Pilot's Floor and Seat Tracks

A fuel dipstick was found on the glareshield on the left side near the pilot's corner (Figures 11 and 12). It was marked with "gallons usable FOR BLADDER TANK ONLY", "FUELHAWK C-182/39 gal." and "AIR by Luso Aviation." It had numerical markings of 0, 5, 10, 15, 20, 25, 30, 35, and 39. Between the 0, 5, 10, 15, 20, 25, 30, and 35 numerical markings were 4 individual lines while there were only 3 individual lines between 35 and the 39 numerical markings.



Figure 11 View of Location Where Dipstick Found

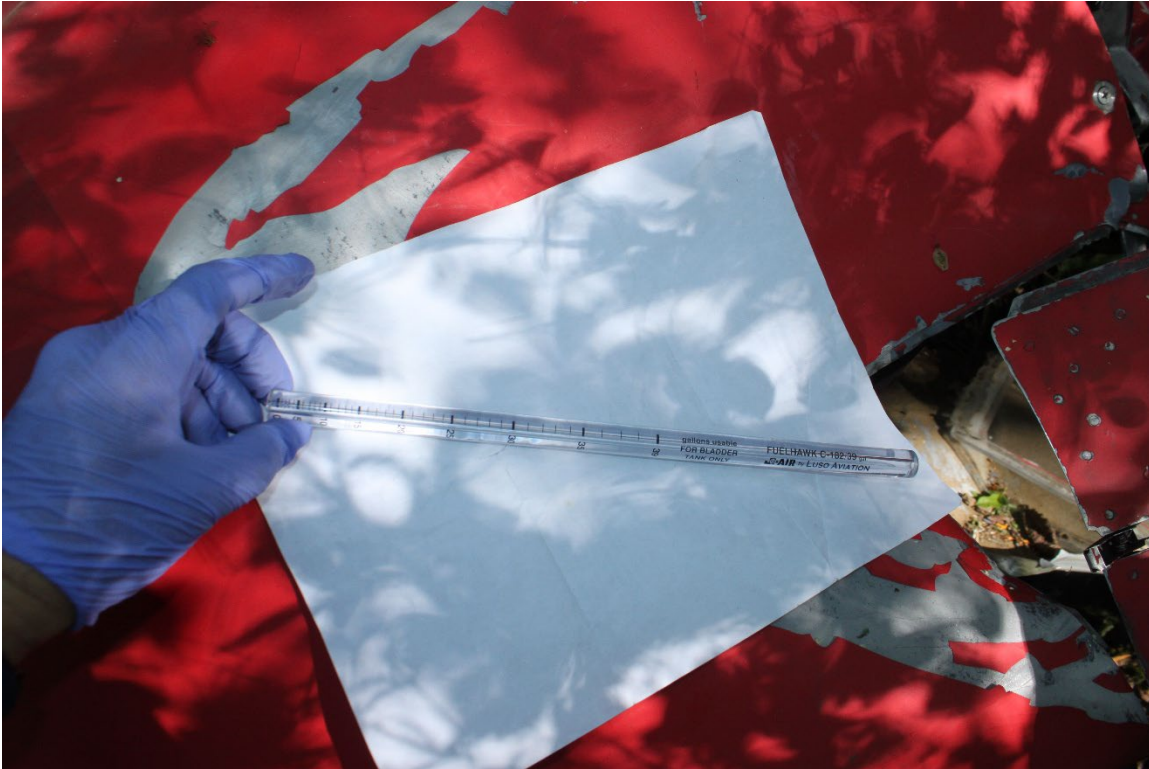


Figure 12 View of the Dipstick Recovered in the Wreckage

2.7 Survivability/Restraints

The single seat's only restraint consisted of a lapbelt.

2.8 Fuel/Fuel System Examination

2.8.1 Fuel Selector Valve

Examination of the fuel selector valve revealed it was in the left fuel tank detent. Following removal of the fuel selector valve from the system no fuel was noted at any of the inlet or outlet ports or lines. Also, no fuel stain was noted on the interior surface of the skin beneath the area of the fuel selector valve (Figure 13).



Figure 13 View of the Interior Skin Beneath the Fuel Selector Valve

2.8.2 Fuel Selector Valve Placard

Inspection of the placard adjacent to the fuel selector valve revealed it specified that the "BOTH" position had 56 gallons useable fuel available for "ALL FLIGHT ATTITUDES" while the individual left and right fuel tank positions had 29 gallons useable fuel available for "LEVEL FLIGHT ONLY" (Figure 14).

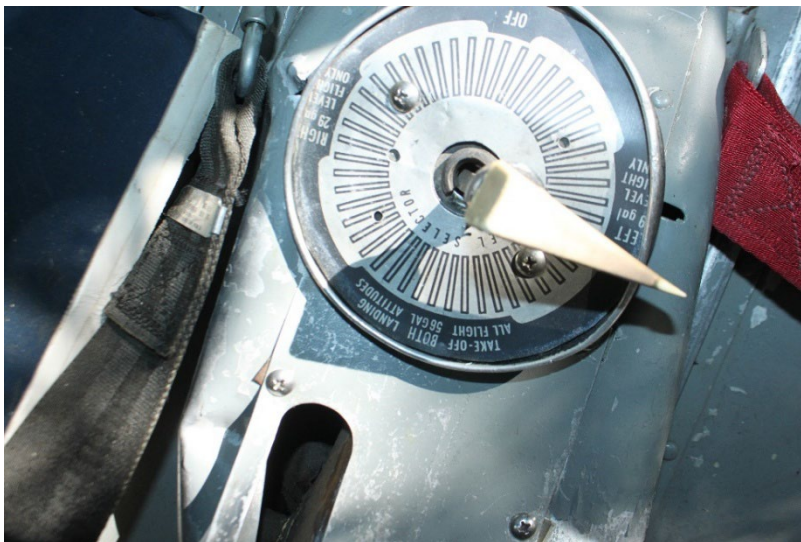


Figure 14 Placard Adjacent to Fuel Selector Valve

2.8.3 Fuel Strainer

Examination of the airframe fuel strainer revealed about 5 ounces of blue colored fuel consistent with 100 low lead were drained.

2.9 Engine

Examination of the engine prior to separation from the airframe revealed throttle, mixture, and propeller control cable continuity was confirmed from cockpit to each engine control. The propeller lever was impact damaged which prevented full movement of the control head.

Examination of the engine following recovery (Figure 15) was performed by placing a splined shaft in the vacuum pump drive pad. Rotation of the crankshaft in the direction of rotation was performed for 720° and crankshaft, camshaft and valve train continuity was confirmed. During rotation of the crankshaft the upper spark plugs from all cylinders were removed from the cylinders but then re-connected to the leads and during rotation of the crankshaft spark was noted at all upper spark plugs. The oil level was above 12 quarts but the engine was slightly canted aft. The oil screen was clean but did contain some carbon particles. Following separation of the propeller governor the drive shaft rotated freely and the governor pumped oil that was inside the unit.



Figure 15: Front, Left, Rear, and Right Side Views of the Engine

Examination of the air induction system revealed it was heavily crushed around the carburetor.

Examination of the exhaust muffler using a borescope revealed no damage to the internal baffling, and no obstructions.

Examination of the spark plugs revealed all were Champion RHM40E massive electrode. All spark plugs exhibited worn out -normal of the center and ground electrodes² and normal color (Figure 16). All center electrodes were football shaped.



Figure 16 View of the Spark Plugs

² When compared with Champion Aerospace Aviation check-A-Plug Chart, AV-27.

The table below depicts the examination and operational test results of the spark plugs:

Spark Plug Gap, Test Results, and Resistance Test Results			
Plug Location	Gap Results	Operational Test Results	Resistance Results
1T	0.018 inch	Good	5.64K Ohms
3T	0.015 inch	Good	4.12K Ohms
5T	0.015 inch	Good	4.54K Ohms
1B (Oil Soaked)	0.018 inch	Good	198K Ohms
3B	0.015/0.018	Good	No Value
5B	0.018 inch	Good	3.04K Ohms
2T	0.018 inch	Good	4.75K Ohms
4T	0.018 inch	Good	4.83K Ohms
6T	0.015 inch	Good	4.87K Ohms
2B	0.018 inch	Good	6.13K Ohms
4B	0.018 inch	Good	3.4K Ohms
6B	0.018 inch	Good	1.63K Ohms

Examination of the air induction, exhaust, and lubrication system revealed no evidence of preimpact failure or malfunction. Minor out of tolerance conditions were noted to a few of the spark plugs but there was no evidence of preimpact failure or malfunction of the ignition system.

Examination of the carburetor revealed the accelerator pump operationally tested good and sprayed fuel when the throttle was activated. About 4 ounces of blue colored uncontaminated fuel consistent with 100LL was noted in the carburetor bowl. The needle valve and seat checked good and a blue colored float was installed and appeared to be operational with no absorbed fuel. The inlet screen was clean.

2.10 Propeller

The crankshaft flange fractured and remained attached to the propeller hub flange. The assembly was found in very close proximity to the main wreckage (Figure 17). One blade was bent about 30° beginning about 11 inches from the hub. Chordwise scratches were noted on the blade face, or cambered side of the blade. Abrasion was noted near full span of the blade on the leading edge. The propeller blade was in an abnormal position inside the hub and could not be moved with hand pressure. The leading edge appeared

to be twisted towards low pitch beginning about midspan. The other blade exhibited very slight contact to the leading edge and appeared to be in a normal position in the hub.



Figure 17 View of the Separated Propeller with Attached Crankshaft Flange

3.0. PARTS RETENTION

Two sections of the left flap up cable, Owner's Manual with miscellaneous pages, dipstick, an iPad, a cellular phone, and an Electronics International engine monitor were retained for the investigation³.

The NTSB was provided by a representative of Chenango County Sheriff's Office the Airframe (Green), Engine (Red), and Propeller (Yellow) Maintenance records, plus a "Navigation Log" page recovered the day of the accident from the scene⁴.

4.0. Wreckage Release

The operator of the airplane only had liability insurance. Following NTSB release for recovery, the insurance company contracted with AMF Aviation, LLC (AMF) to move the wreckage from the accident site, and the engine located at N66 Airport, to the operator's chosen location. On June 7, 2023, personnel of AMF moved the wreckage and engine to [REDACTED] Laurens, New York [REDACTED]
[REDACTED]

³ Refer to NTSB Evidence Control Forms in the public docket for the investigation.

⁴ Refer to NTSB Evidence Control Forms in the public docket for the investigation.

Submitted by:

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Sr. Air Safety Investigator