

National Transportation Safety Board

Office of Aviation Safety

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ANC22LA007

WRECKAGE EXAMINATION

December 6, 2021

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A. ACCIDENT

Location: Bethel Airport, Bethel AK
Date: November 20, 2021
Time: 1755L

Airplane: Cessna 207A

B. WRECKAGE EXAMINATION

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C. SUMMARY

On November 20, 2021, about 1755 Alaska standard time, a Cessna 207 airplane, N9794M sustained substantial damage when it was involved in an accident at the Bethel Airport, Bethel, Alaska. The pilot and five passengers were not injured. The airplane was operated by the pilot as a Title 14 Code of Federal Regulations Part 135 scheduled passenger flight.

The purpose of the flight was to transport five passengers and cargo to Kwethluk, Alaska, which is located about 12 miles east of Bethel. The flight was operated by Yute Commuter Service as a scheduled commuter flight as flight number 700B (3). The pilot reported that shortly after departing from Bethel, he noticed that the red, ELT (Emergency Locator Transmitter) light on the instrument panel mounted, remote switch, had illuminated. The pilot then asked the Bethel tower operator if they were hearing an ELT signal, and the tower operator responded that no signal was being received. Moments later, the pilot began to smell what he describes as an electrical burn smell, and he elected to return to Bethel. The pilot said that about one minute later, the electrical burn smell intensified, which was followed by visible smoke in the cockpit, and he then declared an inflight emergency to the Bethel tower. The pilot then turned off the airplane's master electrical switch, and subsequently opened his side window for ventilation and smoke removal. He said he

briefly turned the master switch back on to again declare an emergency with Bethel tower, and to inform the tower operator that he was planning to land on Runway 1L.

The pilot said that after landing, during the landing roll, he realized that the nosewheel steering system and brake system were both inoperative. After the airplane rolled to a stop on the left side of Runway 1L, he ordered all the passengers to evacuate the airplane.

The pilot reported that after all the passengers had safely departed the airplane, heavy smoke filled the cockpit and passenger compartment, and he saw a candle like flame just behind the pilot and co-pilot seats, just beneath the floorboards of the airplane. Moments after all the passengers and pilot had exited the airplane, it was immediately engulfed in flames.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

On runway 01L, Bethel AK

2.0 Airframe Examination

2.1 Fuselage



Figure 1View of left side of accident airplane.

- Pilot location - Left.
- Passenger location- all 5 seats occupied.
- Type of seat belts used- 3 point in front, lap in rear.
- Cargo- food, ATV tire and passenger baggage.
- Damage.
 - Extensive fire damage to cabin area. From instrument panel to behind cargo area.

2.2 Empennage



Figure 2 Empennage of accident airplane.

- The empennage condition- Undamaged
- The right horizontal stabilator
 - Attached to its respective attach points. Yes
 - Condition/Damage – No damage noted.
- The right elevator
 - Attached to its respective attach points. Yes
 - Condition/Damage – No damage noted.
- The vertical stabilizer.
 - Attached to its respective attach points. Yes
 - Condition/Damage- No Damage noted.
- The rudder
 - Attached to its respective attach points. Yes
 - Condition/Damage – No damage noted.
- The nose wheel –
 - Attached to its respective attach points. Yes

- Damage – No damage noted.
- The left horizontal stabilator
 - Attached to its respective attach points. Yes
 - Damage – No damage noted.
- Left elevator
 - Attached to its respective attach points. Yes
 - Damage – No damage noted.

2.3 Wings



Figure 3 Right wing root of accident airplane.

- Overall –Extensive fire damage from inboard to about 30 inches out. Majority of damage at the rear of the wing.
- Leading edge
 - Condition/Damage- No damage noted.
- The right aileron
 - Attached to its respective attach points. Yes

- Condition/Damage – No damage noted.
- The right flap
 - Attached to its respective attach points. Yes
 - Condition/Damage – Extensive fire damage about 30 inches out from the inboard location.
- Fuel – Cap on and tight, Yes
- Wing attachment to fuselage. Yes



Figure 4 Left wing root of accident airplane.

- Overall- Extensive fire damage from inboard to about 30 inches out. Majority of damage at the rear of the wing.
- Leading edge
 - Condition/Damage – No damage noted.
- The left aileron
 - Attached to its respective attach points. Yes
 - Condition/Damage – No damage noted.
- The left flap

- Attached to its respective attach points. Yes
 - Condition/Damage – Extensive fire damage about 30 inches out from the inboard location.
- Fuel -Cap on and tight. Yes
- Wing attachment to fuselage - Yes

2.4 Landing Gear

2.5 Cockpit

Flight Controls/Flight Control Cables Remarks:

Flight control continuity was confirmed by the pilot. After landing, pilot stated that he had no brakes and was unable to steer nose wheel.

- Flaps
 - ☐ Flaps require power to operate. The pilot believed he had an electrical fire and had turned off the electrical power. Master switch - OFF.
 - ☐ Flaps were not used.

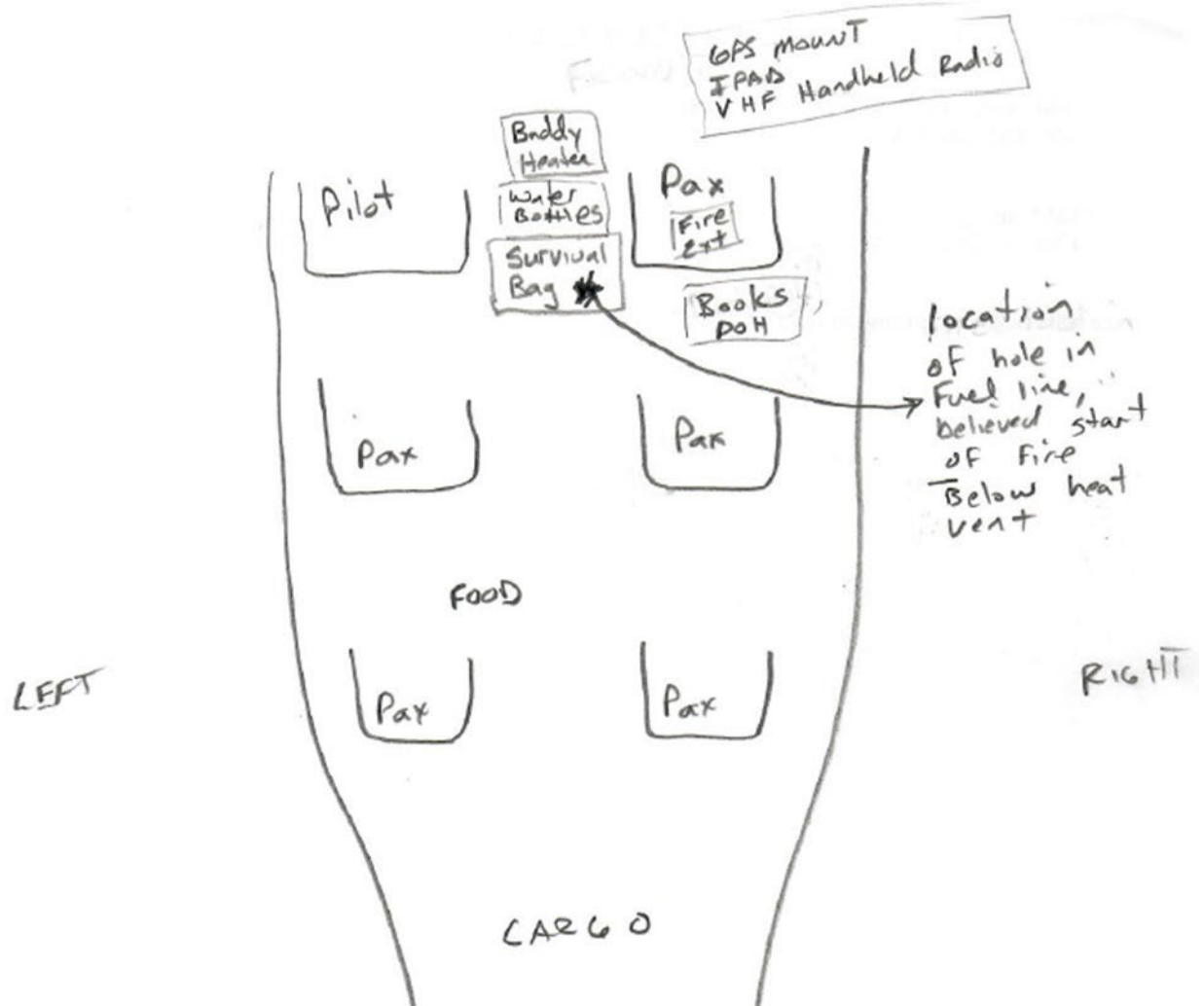


Figure 5 Location of items found in accident airplane.

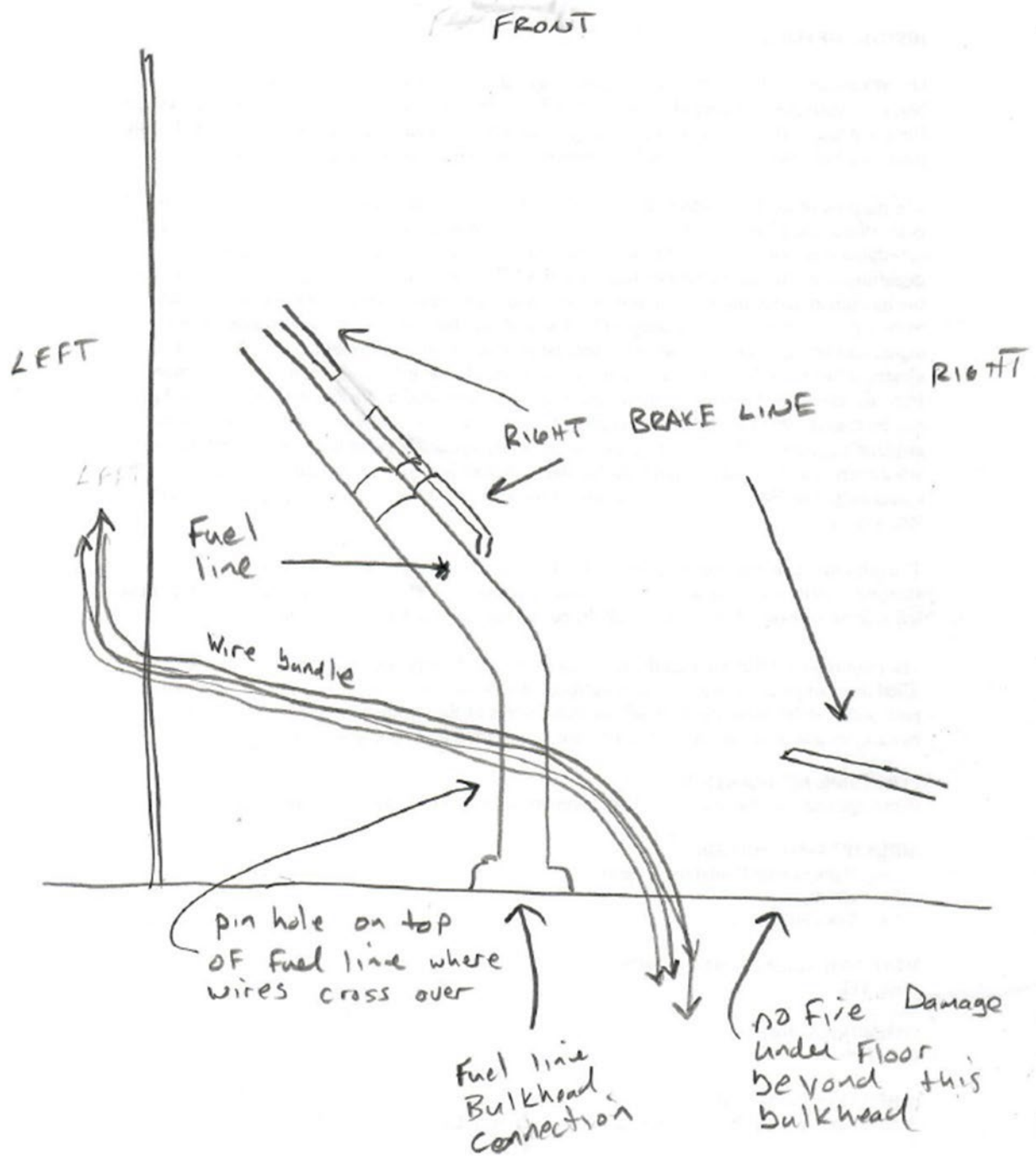


Figure 6 Location of ignition point in accident airplane.



Figure 7 Overhead view of ignition point in fuselage.



Figure 8 View of wire bundle crossing over fuel line.

3.0 Engine Examination

Engine Control Continuity

Pilot reported no abnormal engine operations. Visual inspection of the engine was completed, and no damage or underlying conditions noted.

Engine/Propeller

- Engine
 - Make/Model – Continental IO-520F, S/N 1032451, Crank N16AA058
 - TSOH – 736.9, TT – 3062.2, TBO 1900

Magnetos

- Left – Bendix BL-500556-1 S/N D17AA284R
 - Tight to engine, YES (remained securely clamped at their respective mounting pads)
 - Ignition harness secure to mag. Yes

- Right – Bendix BL-500556-1 S/N D15FA081R
 - Tight to engine Yes (remained securely clamped at their respective mounting pads)
 - Ignition harness secure to mag, Yes

Brakes

- Right
 - Right brake line at about STA 65 of the aircraft was broke in two locations and not operational due to fire damage.
- Left
 - Left brake was tested. Fluid was observed moving when left toe brake was pressed. No damage was noted to the left brake system and was found operational.

4.0 Propeller Examination

- Propeller
 - Make/Model – Hartzell, PHC-C3YF-1RF, S/N EE6421B
 - TSOH – 869.6, TT- 4505.7, TBO 2400
 - Damage – No damage noted.

Submitted by:

Mark Ward
ASI