



NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety

WRECKAGE AND ENGINE EXAM FIELD NOTES

May 4, 2020

A. ACCIDENT **WPR20LA295**

Location: Three Rivers, CA
Date: September 4, 2020
Time: 1148 Pacific Daylight Time (PDT)
Operator: Private
Aircraft: Beech V35B
Registration: N818S

B. PARTICIPANTS:

IIC or GC: Dan Baker
National Transportation Safety Board
Federal Way, WA

Participant: Josh Cawthra
National Transportation Safety Board
Federal Way, WA

Participant: Casey Love
Textron Aviation
Wichita, KS

C. SUMMARY

On September 4, 2020, about 1148 Pacific daylight time, a Beechcraft 35 airplane, N818S was destroyed when it was involved in an accident near Three Rivers, California. The pilot and the passenger sustained fatal injuries. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

After family members of the pilot became concerned when he did not arrive at his intended destination, the Federal Aviation Administration (FAA) issued an alert notice (ALNOT) for the airplane. The wreckage was discovered in mountainous terrain in Sequoia National Park early morning on September 5, 2020. According to first responders, a postcrash fire ensued following the impact.

Preliminary radar data depicted a primary target consistent with the accident airplane depart Visalia Municipal Airport (VIS), Visalia, California, about 1125 and flew east on a 1200 non-discreet code. The airplane flew toward rising terrain south of Silver City, California, and the last recorded radar target was about 1148. The pilot was flying in an area of reduced visibility due to smoke from nearby wildfires. There were no reported witnesses to the accident sequence.

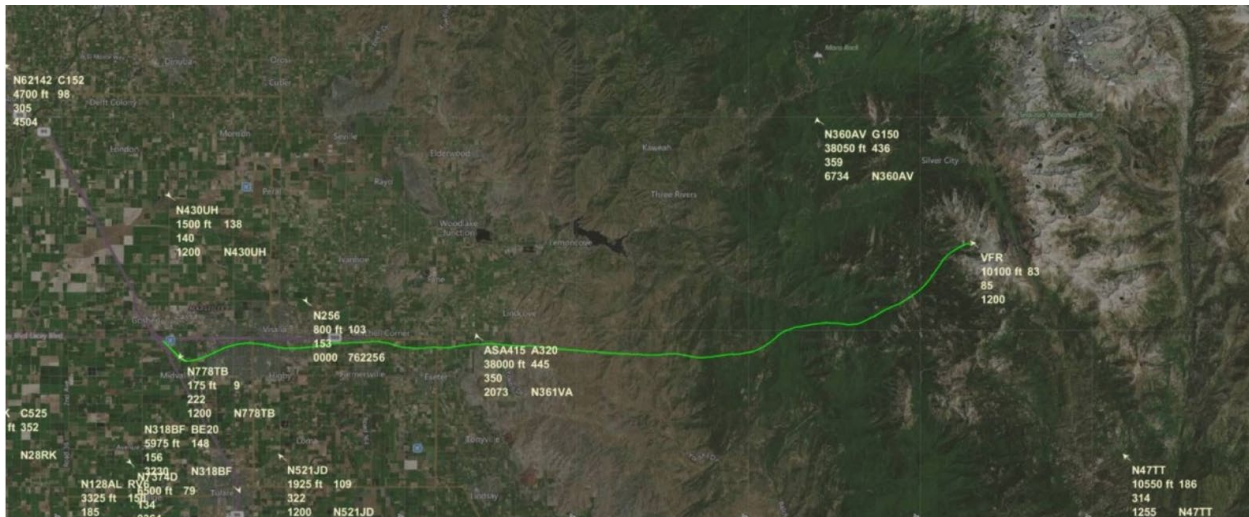


Figure 1 - Preliminary Radar Track

NPS Report Summary: A single engine fixed wing aircraft traveling from Visalia Airport to the Needles Airport crashed in Upper Horse Creek within the Mineral King area of Sequoia National Park on 9/4/2020. Two occupants were on board - both were deceased. The airplane crash ignited a wildland fire that consumed much of the interior of the aircraft. The fire was contained by park firefighters and the bodies were transported to the Woodlake Airport where they were transferred to the Tulare County Coroner.

D. DETAILS OF THE INVESTIGATION

1.0 Accident Site

The accident site was not visited by NTSB or FAA investigators. A wreckage diagram was provided by the Nat'l Park Service, who conducted an independent investigation into the accident.

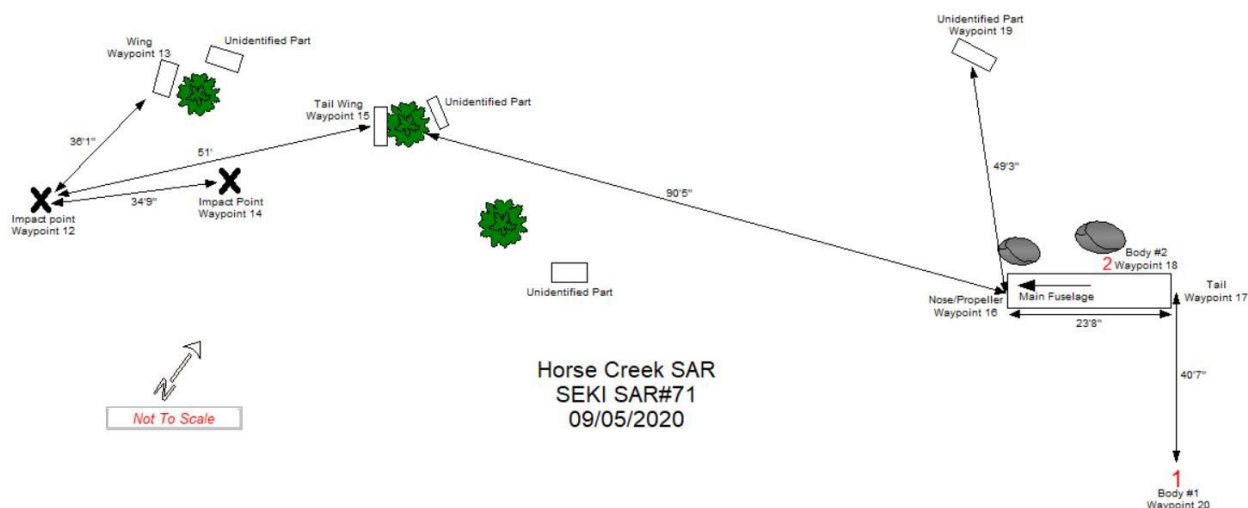


Figure 2 - Main Accident Site Diagram (SAR)

2.0 Airframe Examination

National Park Service personnel provided photographs and copies of their investigative report to assist the investigation. Photographs provided by the National Park Service indicated the airplane impacted a rocky and tree covered ridgeline about 9,500 ft msl. The airframe was examined at a secure location following recovery about 18 months after the accident.

The wreckage was highly fragmented and thermally damaged. The cabin from the cockpit seats to the firewall were mostly consumed by fire. The side and upper cabin skins from the baggage compartment forward were consumed by fire. The wings were fractured into multiple segments. The majority of the right wing was consumed by fire. Portions of the wing spar remained. The wing tip fuel tanks were observed and sustained thermal damage.

The stabilizers and elevators were impact separated from the tail. An 18" circular tree impact impression existed in inboard portion of the left stabilizer. The right stabilizer was unremarkable. Both sustained slight thermal damage to the paint finish.

Flight control cable continuity could not be established due to fragmentation and extensive thermal damage to the cockpit area. The only portion of the rudder control system that was identified was one rudder pedal. Numerous segments of control cable were observed that were cut at each end. The dual control wheel yoke was observed liberated from the fuselage with the sprocket impact separated. A portion of control cable was observed with links of chain connected. The chain was fractured and the cable exhibited signatures consistent with overload separation. The aileron control cables were observed cut approximately two feet outboard of the wing roots.

The up elevator control cable appeared to be cut near the cockpit area and again two feet forward of the ruddervator differential mechanism. The down elevator control cable appeared to have been cut near the cockpit and fracture separated at the differential mechanism. The cut end was corded and had received thermal damage. The rudder balance cable was fracture separated from the right rudder control arm at the differential mechanism. The balance cable pulley bracket was separated from the structure. The right rudder control arm was fractured from the differential

mechanism. The control cable remained attached and was cut near the cockpit section. The left rudder control arm remained intact. The control cable remained attached to the arm and was cut approximately two feet forward of the differential mechanism.

The aileron flight control cables were cut by approximately two feet outboard of the wing roots. All observed control cables were cut or consistent with overload signatures

All observed segments of the fuel system were thermally damaged or fragmented. The fuel selector was not observed.

All three landing gear were observed separated from the airframe support structure. The landing gear drive motor and gear box were thermally damaged. The position of the landing gear drive motor and gear box indicated the gear were in the retracted position.

The cabin seats and restraints were thermally damaged. The seat upholstery was consumed by fire. Only the steel portions of the seats remained intact. Aluminum portions of the seats and seat bases were observed thermally separated and damaged.

Fragments of thermally damaged instrument components were observed. No complete instrument was observed.

3.0 Engine Examination (Reciprocating)



TSIO-520-D, 285 Hp

Total Time, manufacture date, date installed – Unknown.

Time since overhaul–Overhauled Sept 19, 1995, Tach 1889.4

Most recent inspection – Annual Inspection June 22, 2020, Tach 2566.0, TSMO – 676.6.

Summary of damage: When first observed, the engine was stored in a large storage container. The engine was removed from the container and suspended in order to complete the examination. Two turbochargers were observed separated from the engine and thermally damaged. The wastegate valves were observed in the open position. The engine and all observed components exhibited fire damage, corrosion, and some impact damage. All three propeller blades were attached to the propeller hub which remained attached to the engine. Both turbocharger units were partially impact separated from the engine and were removed from the engine to facilitate the engine examination. Attempts to verify engine continuity were unsuccessful.

3.1 Exhaust System

Headers/Pipes – the left side headers and exhaust pipes remained attached to the engine and were secure. Portions of the right side exhaust pipes had been cut during recovery., but what remained was secured to the engine.

3.2 Induction system

Air Cleaner - the air cleaner and Air box were not located in the wreckage.

3.3 Magnetos

Both the left and right magnetos were attached to the engine and exhibited exposure to heat. Both magnetos were removed from the engine. Neither Magneto would turn or produce spark. Both units were partially disassembled, and their internal components exhibited heat damage, to include the melting of internal components. Functional testing of the units was not possible.



3.4 Ignition system

Harness -the ignition harness exhibited heat damage and exposure to fire.

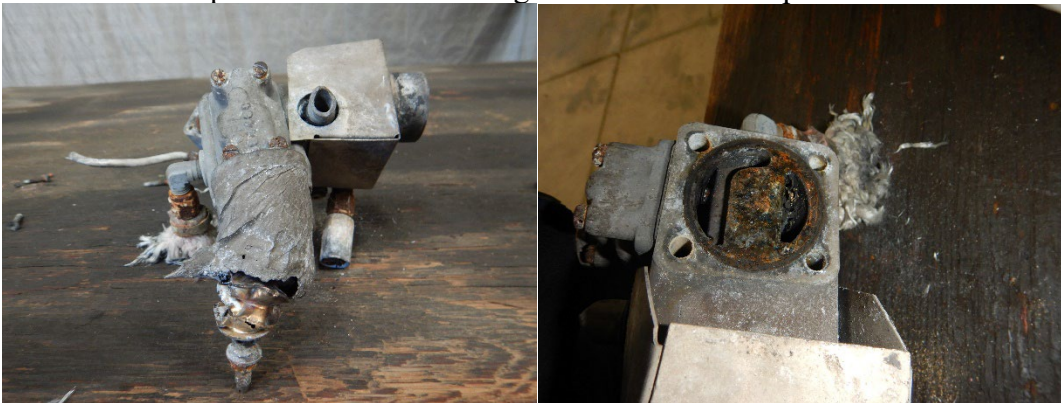
Spark Plugs-condition/appearance



3.5 Fuel System

Fuel control positions could not be verified due to fire and impact damage.

Fuel Pump - the fuel pump exhibited exposure to heat and fire. The pump was removed from the engine and the pump drive coupler was intact. The pump was partially disassembled and the internal components exhibited damage consistent with exposure to extreme heat.



Fuel Screen- The fuel screen was clear of contaminants.

Throttle Body/Metering Unit - the throttle body exhibited heat and fire damage. Throttle and mixture controls were secure. Neither control linkage could be moved at the unit due to fire damage and corrosion. Engine control continuity could not be verified to the cockpit due to fire and impact damage.

The fuel lines from the fuel divider to each cylinder were secure.

Fuel Valves/Dividers

3.6 Lubrication System

Oil Sump- The oil sump had a large hole in the bottom of the sump due to heat and fire damage.

Pick up tube/Screen were removed. The screen was heat damaged and brittle during removal.



Oil filter – The oil filter was heat damaged and corroded on the outside. No attempts were to disassemble the filter and check for contaminants due to damage.

3.7 Cylinders

The valve covers of the left side no.s 2, 4, and 6 cylinders were impact and heat damaged. Valve covers for the no's 1, 3, and 5 cylinders were removed and visual inspection revealed no preimpact damage to any rocker arms or valves. Compression could not be checked due to damage and corrosion that prevented rotation of the engine. Visual inspection using a borescope showed rust and corrosion on each cylinder wall. No mechanical failures were noted within any cylinder or valve components. The mechanical continuity of the engine was verified visually using a borescope through holes drilled in the engine case.

4.0 Propeller Examination (copy section for more than one propeller)

Each of the three propeller blades remained attached to the propeller hub, which remained connected to the engine. Each propeller blade turned freely within the hub and each blade displayed leading edge gouging. Each blade also displayed varying degrees of S-curve bending.

5.0 Maintenance Records Examination

Recovered logbooks indicate the most recent airframe inspection was an annual type dated June 22, 2020, Tach 2566.0, SMOH 676.6. The airframe logbook contained a post-it note on the same page as the last annual inspection with a handwritten note “Should be 2556.0? Tach possibly read wrong @ annual?” The previous airframe annual inspection was dated 12/3/2018, Tach 2526.

The most engine airframe inspection was an annual type dated June 22, 2020, Tach 2566.0, SMOH 676.6. The previous inspection was a 100 hr inspection dated Dec 3, 2018.