NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

POST ON-SITE EXAMINATION

NTSB Accident: WPR14FA132
Accident Date: March 8 or 9, 2014 (Actual date/time uncertain)

Examination Date: April 17, 2014

This document contains 14 embedded images (courtesy CMI and Cessna)

A. ACCIDENT

Location:	Near Carson City Nevada
Date:	Unknown
Aircraft:	Cessna 120, N76856, Serial # 11290
NTSB IIC:	Michael Huhn

B. EXAMINATION PARTICIPANTS:

Michael Huhn
Air Safety Investigator
National Transportation Safety Board
Western Pacific Region

Henry Soderlund
Air Safety Investigator
Cessna Aircraft Company
Wichita, KS.

Chris Lang
Air Safety Investigator
Continental Motors Inc
Mobile, AL

C. ACCIDENT SUMMARY

On Sunday March 9 about 1500 Pacific daylight time the wreckage of an airplane was detected by a private citizen while he was flying over a mountainous region about 6 miles southeast of Carson City airport (CXP) Carson City, Nevada. Carson City Sheriff's Office was notified, and search and rescue (SAR) personnel arrived at the accident site by about1630 the same day. They reported the airplane tail number, and that there was 1 male individual on board, who was deceased. The airplane registration information indicated that the airplane was a Cessna 120.

D. ACTIVITY SUMMARY

The wreckage was recovered from the accident site about 5 days after the accident. It was transported to and stored in a secure facility for the subject examination.

The examination did not detect any evidence of any pre-impact conditions, deficiencies, or failures that could have precluded normal operation and continued flight.

E. AIRFRAME INFORMATION

The airframe had been separated into 3 major sections (wing, empennage, and lower cockpit/firewall/engine) for recovery

Figure 1 - Wing at Recovery Facility

Figure 2 - Empennage at Recovery Facility

Figure 3 - Lower Cabin/Cockpit (After engine removal)

1.0 Fuel Selector Valve

- The fuel selector valve was accessed and removed from the structure
    - All three fuel lines (left tank, right tank, engine) were securely attached to the valve body
    - The valve handle was fracture-separated from the valve
    - Alignment of the handle fractures indicated that the valve had been set to the left tank at impact.
    - The valve ports and internal spool chamber were observed to be clear of obstructions, debris or corrosion
    - The valve internal spool was set to and fully aligned with the valve being selected to the left tank

Figure 4 - Fuel Selector Valve and Handle

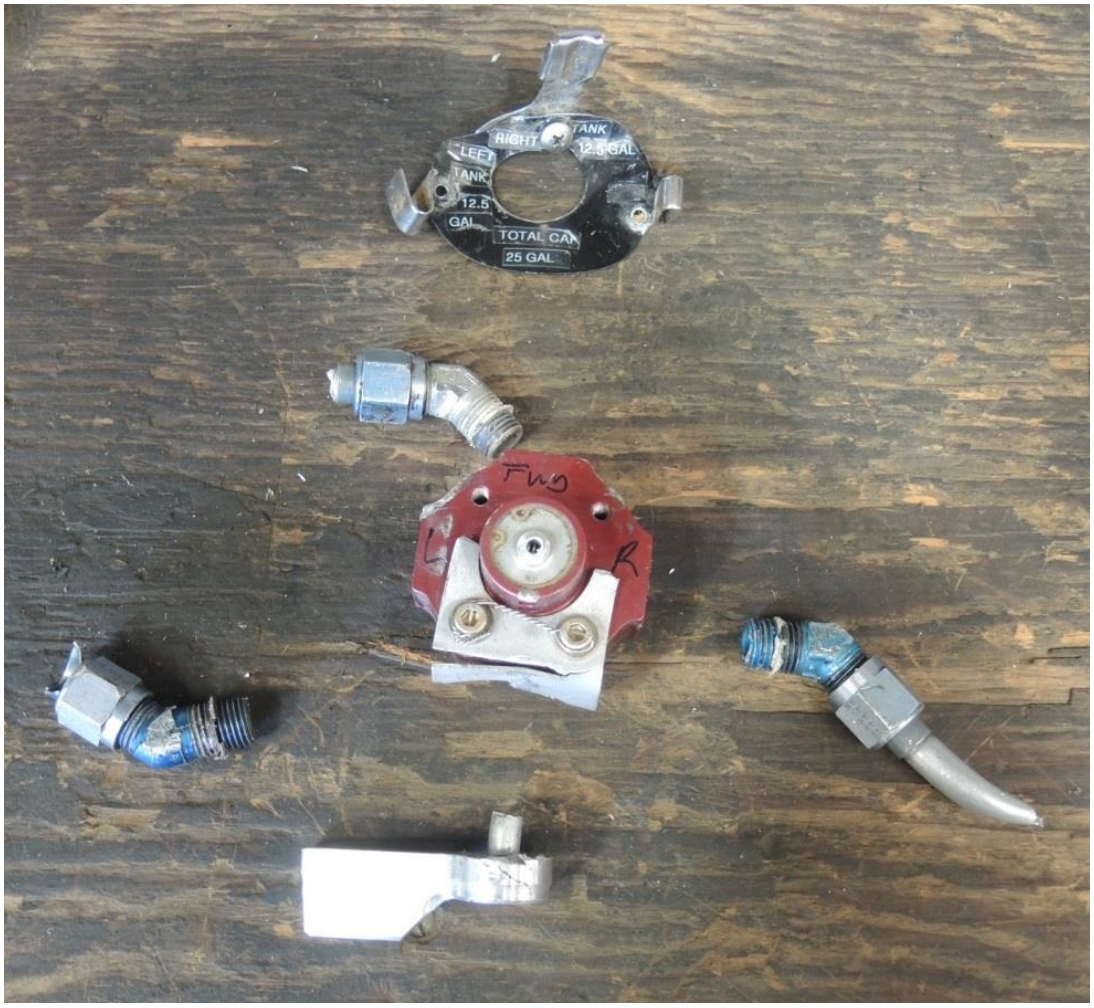

Figure 5 - Fuel Selector Valve Components

2.0 Flight Control Cables

- During the on-site examination, complete flight control cable continuity could not be confirmed due to the condition of the wreckage under the cabin floor.
- During post recovery examination, flight control cable continuity was confirmed under the cabin floor.
- All the flight control cables were attached to their respective cockpit controls.
- The elevator control link had been driven aft during the accident sequence, which separated it from the elevator control bellcrank assembly that was mounted under the cabin floor.

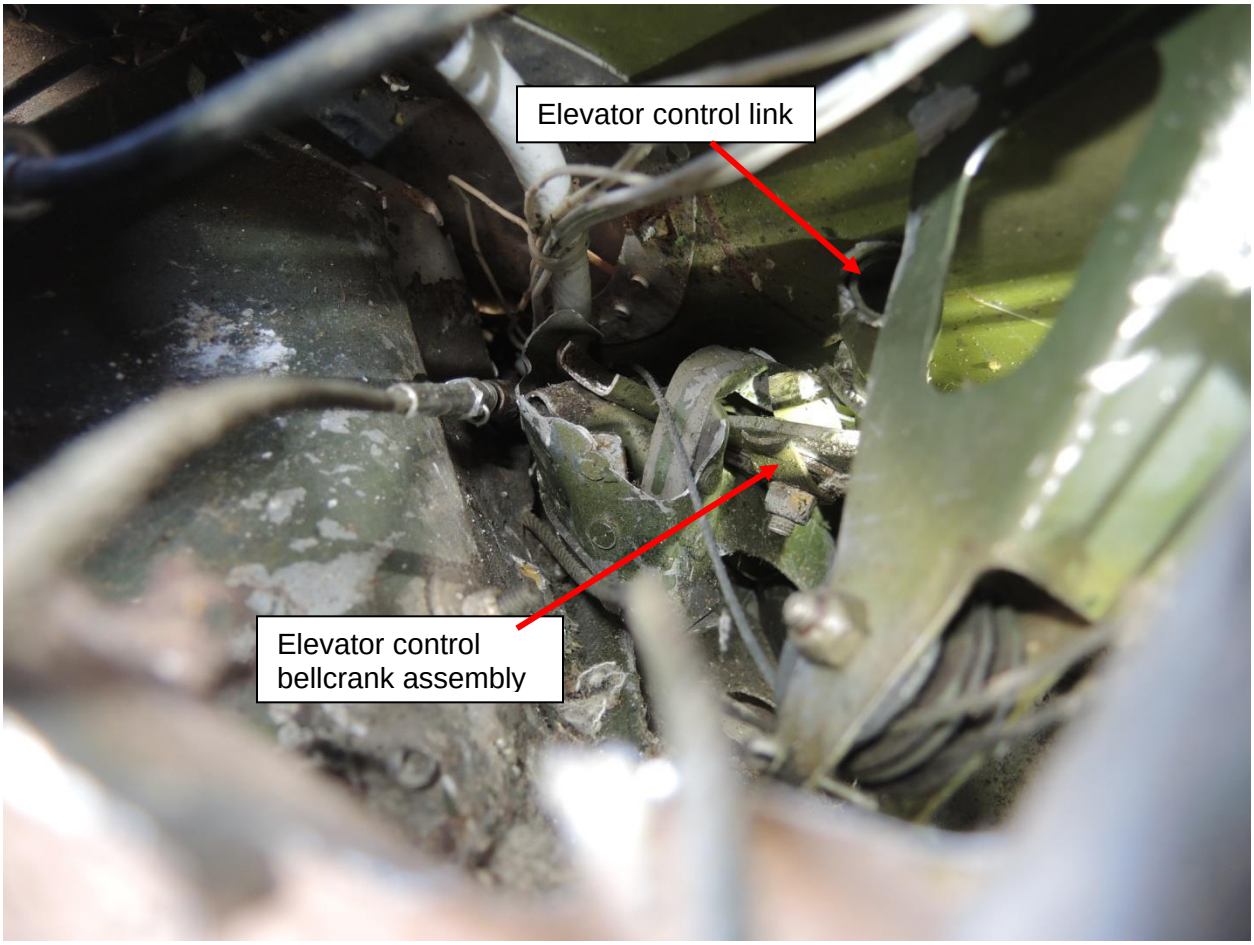

Figure 6 - Under-Floor Flight Control Linkage

F. ENGINE INFORMATION

1.0 General

- The engine remained attached to the engine mount, and the engine mount remained attached to the airframe
- The engine mount structure was severely deformed in the aft and up direction from impact
- The propeller remained attached to the engine crankshaft
- Engine: C-85-12 S/N 25936-6-12
- Propeller: Sensenich 76AK-2-44 S/N 37949
- Left Magneto – Bendix P/N: 10-51360-26 S/N: 749233
- Right Magneto – Bendix P/N: 10-51360-26 S/N: 749232
- Generator – Delco Model 7335, S/N: 1101898RX
- Starter – P/N: Illegible S/N: 2969

Figure 7 - Aft (Accessory) Side of Engine

2.0 Examination Results

- The engine remained partially attached to the airframe and was separated for inspection. The top spark plugs and rocker arm covers had been previously removed at the accident scene. The number three spark plug was not observed with the engine. The carburetor was separated in the accident and had previously been disassembled by the NTSB and Cessna investigators.

- The exhaust system exhibited impact/crush damage.

- The induction system exhibited impact/crush damage.

- The ignition harness exhibited impact damage, and some of the leads were partially or completely cut/severed.

Figure 8 - Magnetos

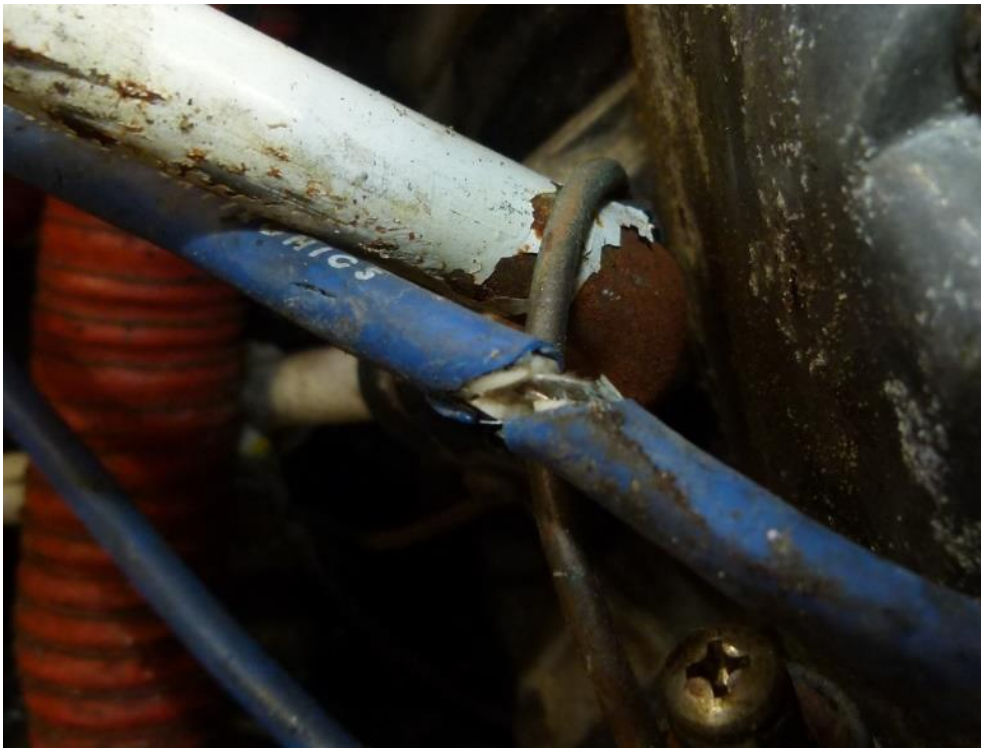

Figure 9 - Exemplar Ignition Lead Cut

- The top spark plugs exhibited light- and dark-colored combustion deposits, and the electrodes exhibited "worn out – normal" in accordance with the Champion Aviation 'Check-a-Plug' chart. The bottom spark plugs were inspected using a lighted bore scope and exhibited "worn out – normal" operating signatures. As noted during the initial on-scene examination, the center electrode of the top number 2 spark plug was not centered between the two side electrodes. Closer examination revealed that that spark plug was impact-damaged, and that the barrel had been cocked to one side.

Figure 10 - Cylinder 2 Top Spark Plug Deformation

- The oil sump was crushed upward and breached. The oil filter was fracture-separated from its adapter-mount, and was trapped between the engine and firewall until the engine was separated from the wreckage by investigators. Crush damage precluded opening and internal examination of the oil filter.

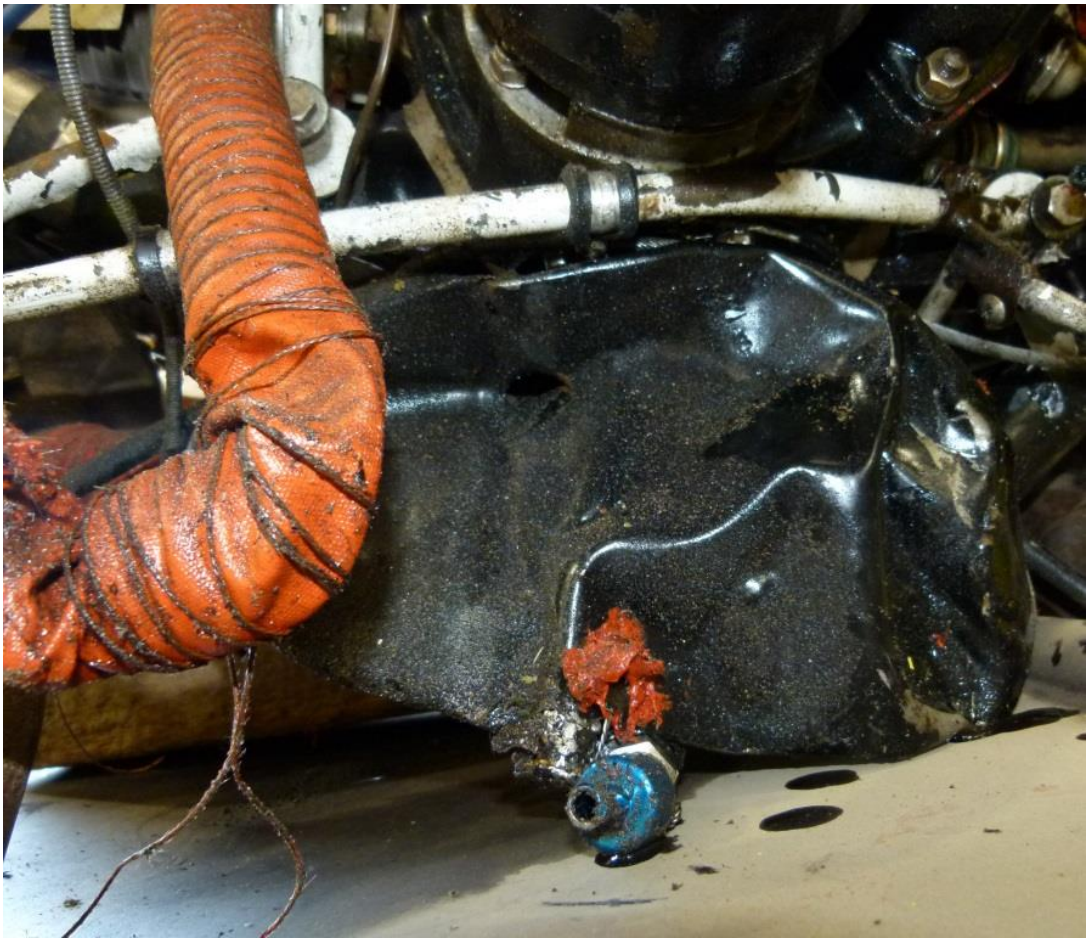

Figure 11 - Oil Sump Damage

Figure 12 - Oil Filter

- The cylinders exhibited external impact and thermal damage. The cylinders were examined with a lighted bore scope inserted through the top spark plug orifices. The combustion chambers contained light colored combustion deposits. The intake and exhaust valves that were inspected with a lighted bore scope exhibited no anomalies

- The crankshaft was rotated by hand via the propeller. Thumb compression was observed on all four cylinders, and continuity of the valve train was obtained. All valves appeared to travel their respective full ranges of motion. Magneto impulse coupling activation was heard when the crankshaft was turned, and sparks were observed on all eight ignition leads.

- The two-bladed, fixed pitch propeller remained attached to the engine. Both propeller blades exhibited leading edge nicks and polishing. Polishing and chordwise scratches were observed on the cambered faces of the blades. One blade exhibited aft bending and twisting. The other blade exhibited light "S" bending from mid-span to the tip.

Figure 13 - Less-Damaged Propeller Blade

Figure 14 - Propeller Blade with "S-Bending"