NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

ON SITE INFORMATION

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

On-Site Dates: March 10-11, 2014

This document contains 31 embedded images

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.
Lee Oscar Maintenance Inspector FAA FSDO Reno, NV	Michael Becker Manager FAA FSDO Reno, NV

NOTE: FAA personnel not on scene concurrently with NTSB & Cessna

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

Conditions prevented the recovery of the pilot until Monday morning March 10. FAA, law enforcement, coroner, and SAR personnel responded to the accident site that morning. They shut off the ELT, partially documented the site, and recovered the pilot's body. The FAA personnel departed the scene about noon that same day.

Cessna Aircraft and NTSB personnel arrived on the accident scene about 1300 on March 10, 2014. They examined and documented the site, and departed about 1730. Since site access difficulty made the airplane recovery timing uncertain, the wreckage was marked with colored/labeled tape to denote that it was a known/identified site, in the interest of preventing spurious notifications and additional searches. NTSB & Cessna personnel met with FAA personnel at the RNO FSDO on 3/11/14.

E. WRECKAGE INFORMATION

1.0 Site Information

- The wreckage was on the roughly north side of a roughly east-west valley that opened to the west
- The valley width did not change linearly with east-west travel, it narrowed rapidly in the easternmost section
- Lat/Long: 39° 5.880' North; 119° 39.899' West
- Elevation 6,219 feet msl
- According to Google Earth information:
    - The impact site was 6.06 nm on a true bearing of 145° from the center of CXP
    - The impact site was offset about 7,300 (1.2nm) feet southwest of a direct line between CXP and NV33
    - At the impact site elevation and location, the valley was about 300 feet wide
- Wreckage was upright, on sandy slope with partial vegetation
- Slope was approximately 30 degrees, downslope was 160 degrees magnetic
- The wreckage was about 100 feet downslope from a jeep trail

Figure 1 - Wreckage In Situ (looking SE)

Figure 2 - Closer View of Wreckage (looking ESE)

Figure 3 - View West from Wreckage Location

2.0 General

- Wreckage was tightly contained, upright
- All major components accounted for at accident site
- Airplane oriented on heading of 312° magnetic
    - Opposite to presumed direction of flight
- Propeller remained attached to engine, and engine remained attached to airframe
- Propeller was almost completely buried in sandy slope
- Airplane was all-metal fuselage, with fabric-covered wings and empennage
- Wing assembly translated forward and down w/r/t normal position
    - Wing LE was forward of firewall (or vice versa)
- Left wing impacted tree at the span position of the landing light
- Tree damage was consistent with a 50 to 70 degree descent trajectory (relative to local horizontal)
- No evidence of fuselage rotation (spin) at impact
    - Tail did not “scorpion over”; similar crush damage on both top and bottom fuselage skins near baggage area
- No structural damage to tailcone/aft fuselage (aft of baggage area) or to empennage
- Body recovery personnel cut fuselage to extract body
- Airplane data plate matched FAA registration data
- Airplane manufactured 11/8/1946

Figure 4 - Empennage (looking WSW)

Figure 5 – Empennage and Left Wing in Tree (Note undamaged branches)

Figure 6 - Left View of Cabin Area

Figure 7 - Closeup of Left Wing in Tree

Figure 8 - Top Front Right View (looking SE)

Figure 9 - Right Cabin View

3.0 Airframe

- Fuselage extensively crushed in the up and aft direction until just aft of cabin
- Front of fuselage exhibited significant accordion-style aft crushing
- Engine intruded aft into cabin/cockpit
- Instrument panel severely deformed
- Right wing leading edge crushed aft along its full span
- Left wing significant crush damage isolated to area where wing impacted tree
- All flight controls remained fully attached to their respective airfoils (except for possibly the right aileron which may have been partially detached by impact)
- Flight control cable continuity was confirmed from each control surface to under the cargo area – damage precluded tracing the cables under the cabin floor
- Aileron interconnect cable remained attached to aileron bellcranks
- Aileron damage precluded full travel movement
- Aileron control cable continuity was confirmed from the control yokes to the cabin floor
- The airplane was not equipped with flaps
- Elevator and rudder free to move stop to stop
- The elevator trim tab was found in the neutral/faired position

4.0 Landing Gear

- Tail wheel remained attached and appeared undamaged
- Left main gear remained attached and appeared undamaged
- Right main gear wheel assembly (including axle and brake) fracture-separated from strut
    - But remained attached by flexible brake line

5.0 Fuel System

- Both fuel tanks placarded "12.5 gallon capacity 80 octane min avgas only"
- Fuel caps were found securely installed
- An undetermined amount of fuel was observed in both fuel tanks
- The fuel tested negative for water
- The fuel strainer glass bowl was fractured into multiple pieces
- Dirt from the accident site was on the strainer screen
- Fuel was observed dripping out of the fuel supply line to the fuel strainer
- The fuel handle was in the “left” position and trapped in a fold of the cabin floor
- The handle had separated from the selector valve
- The position of the fuel selector valve could not be determined due to aircraft damage and the fracture-separated handle
- The handle did not appear to be OEM

Figure 10 - Fuel Filler Neck with Placard (Cap removed by investigators)

Figure 11 - Cockpit Fuel Selector (Folded in floor)

6.0 Cockpit/Cabin Area

- Occupiable volume of forward cockpit severely compromised (reduced to about 40%)
- Right control yoke penetrated aft through right seat back
- Both seats equipped with 4 point restraint systems
- Right seat restraint system was not buckled/secured
- First responders reported that the pilot had to be cut out of his restraints (restraint was buckled/secured)
- Two instruments remained undamaged in panel
    - Ammeter – 5 amps discharge (minus)
    - Oil pressure – off scale high
- One instrument remained in panel (fractured face glass
    - Oil temperature – 110 degrees (no units F or C)
- Five flight instruments were recovered (all faceplate glass shattered/missing) loose in wreckage
    - VSI – 1200 FPM down
    - Tachometer - no needle. 3627.91 indicated on hour wheel
    - Turn coordinator – no usable information discernible
    - Airspeed indicator - face plate only. No needle marks or speed arcs
    - Altimeter – altimeter setting wheel/faceplate only
- Throttle control: 1” out/aft and bent over
    - Note: Rigging requires that carburetor stops be reached prior to cockpit control stops, which typically results in throttle control being about 1 inch out /aft from panel at full throttle setting
- Primer handle found at full aft position
    - FAA observed this condition also, prior to recovery of pilot
    - Primer could be locked
- Mixture and Carburetor heat full forward (full rich; off)
- Both toggle-style magneto switches were too damaged to provide information

Figure 12 - Oil Temperature Gauge

Figure 13 - Ammeter and Oil Pressure Indicators

Figure 14 - Flight Instruments and Exemplar Folded Chart

Figure 15 - Primer as Found (note aft/out position)

Figure 16 - Throttle Control

7.0 Engine

- Placard: Continental Aircraft Engines Model C-85-12, "QUOTE ENG. NO. 25936-6-12"
- No non-impact anomalies or mechanical failures noted
- 4 top ignition leads attached and appeared intact, exclusive of minor impact damage
- All 4 top spark plugs were removed; electrodes were light tan in color, consistent with normal operation and mixture
- The number 2 spark plug body was bent and one side electrode had an abnormally small gap (was pushed towards center electrode tower)
- All valve covers were removed
    - all rocker arms and assemblies were observed to be intact
    - No anomalies observed
    - All assemblies were oil-coated
- The condition of the propeller limited the amount of engine rotation possible to approximately 60 degrees
- Crankshaft continuity was confirmed by hand rotation of propeller and checking piston movement in all 4 cylinders
- Camshaft continuity to cylinder #1 aft-most valve rocker assembly was confirmed
- Carburetor was fracture-separated from engine at top of carburetor
- Damage precluded checking of engine control cable continuity
- Investigators cut throttle and mixture cables at carb for removal from engine
    - Some fuel was found in the carburetor bowl
    - Carburetor fuel screen clear
    - Carburetor equipped with metal float

    - Float did not appear to contain fuel
    - Float/valve assembly appeared intact and was free to travel/actuate valve
- Magnetos remained attached to the engine but could not be accessed due to crush damage
- Exhaust system crushed

Figure 17 - Front View after Airplane Pulled from Hillside

Figure 18 - Front View with Cowl Removed

Figure 19 - Left Cylinder Bank (Valve covers removed)

Figure 20 - Right Cylinder Bank (Valve covers removed)

Figure 21 - Spark Plugs (#1 to #4, left to right)

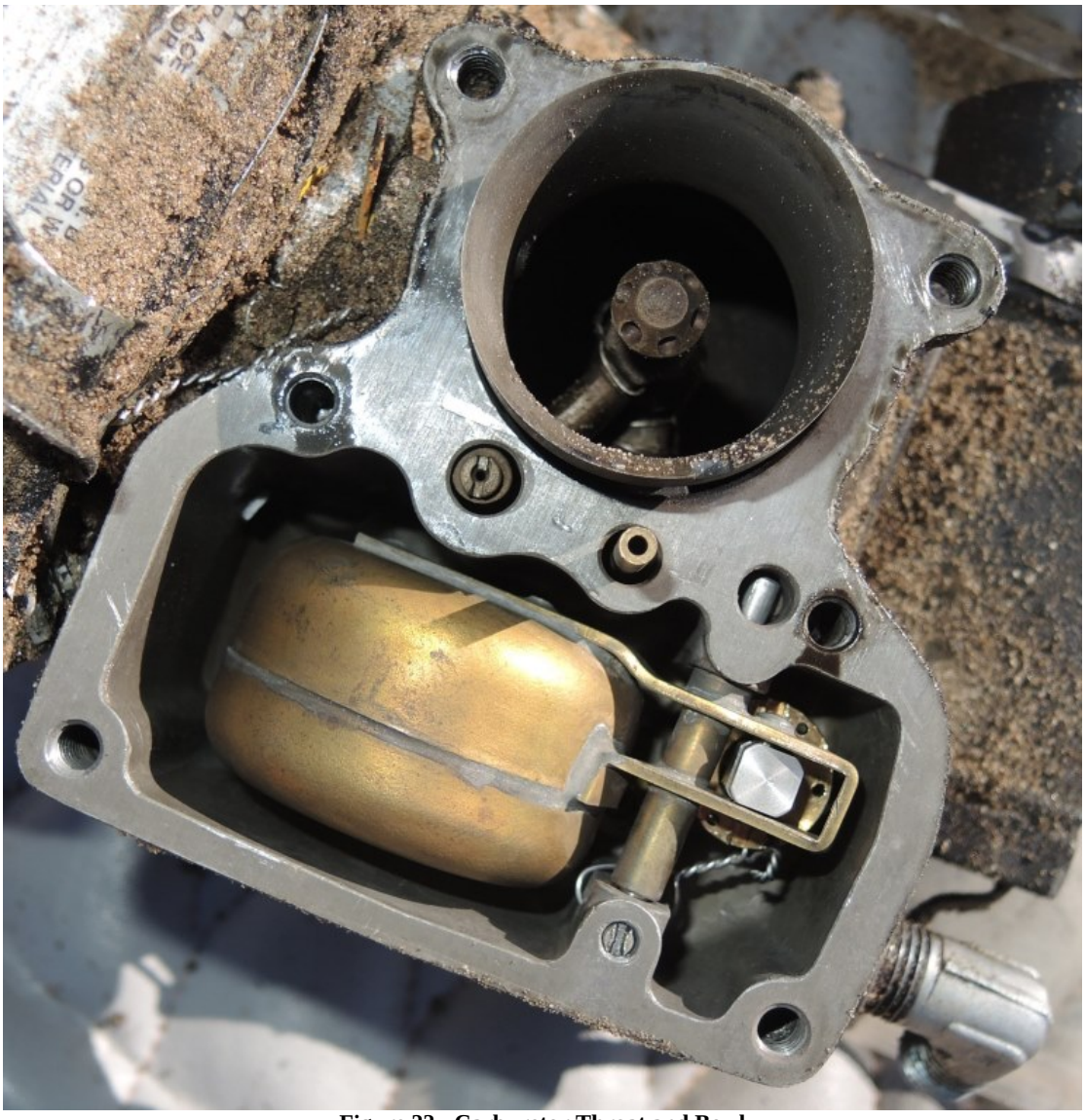


Figure 22 - Carburetor Throat and Bowl

Figure 23 - Carburetor Fuel Screen

8.0 Propeller

- Propeller was fixed pitch 2 blade metal
- Sensenich, serial number 37949, model 6?K -2 -44
- Propeller leading edges and cambered side of blades exhibited significant chordwise scouring of paint, consistent with being driven in rotation through sand
- One blade was relatively straight
- One blade was bent aft at mid span at least 45 degrees and twisted at tip
- Spinner/hub cover was compressed aft

Figure 24 – Bent Propeller Blade (Note scouring)

Figure 25 - Straight Propeller Blade (Note scouring)

9.0 ELT

- NARCO ELT-10 TSO C-91 121.5 MHZ
- Battery manufactured 4/12
- The ELT and bracket was found removed from the airframe and the switch was in the off position
- According to the FSDO manager, he turned off the ELT
- According to the FSDO manager, SAR personnel on the ground and CAP personnel in the air did receive intermittent ELT signals
- No other reports of an ELT signal were received

Figure 26 - ELT

10.0 Baggage

- Remnants of three cases of beer
  - Brands: "Bud Light" and "Bud Light Lime"
  - Bud Light case consisted of 36 12 fl oz cans
  - Case information: 30.5 lbs, dimensions of 7.75 L x 15.63W x 9.82H (inches)
  - Locations in wreckage consistent with 1 case in cockpit
  - Bud Light Lime consisted of two cases of 18 12 fl oz cans
  - Case information: 15.3 lbs, dimensions of 4.87L x 15.87W x 7.87H (inches)
  - Locations in wreckage consistent with 1 case in cockpit and 1 case possibly aft of seats (baggage compartment)

- Remnants of 1 case of soda
  - Brand "Pepsi"
  - 24 12 fl oz cans
  - Case layout not able to be determined
  - Location in wreckage consistent with being in cockpit
- About 3 lbs of groceries
- About 3 lbs of hand tools (some new/packaged, some used)
- Copy of handwritten weight and balance sheet

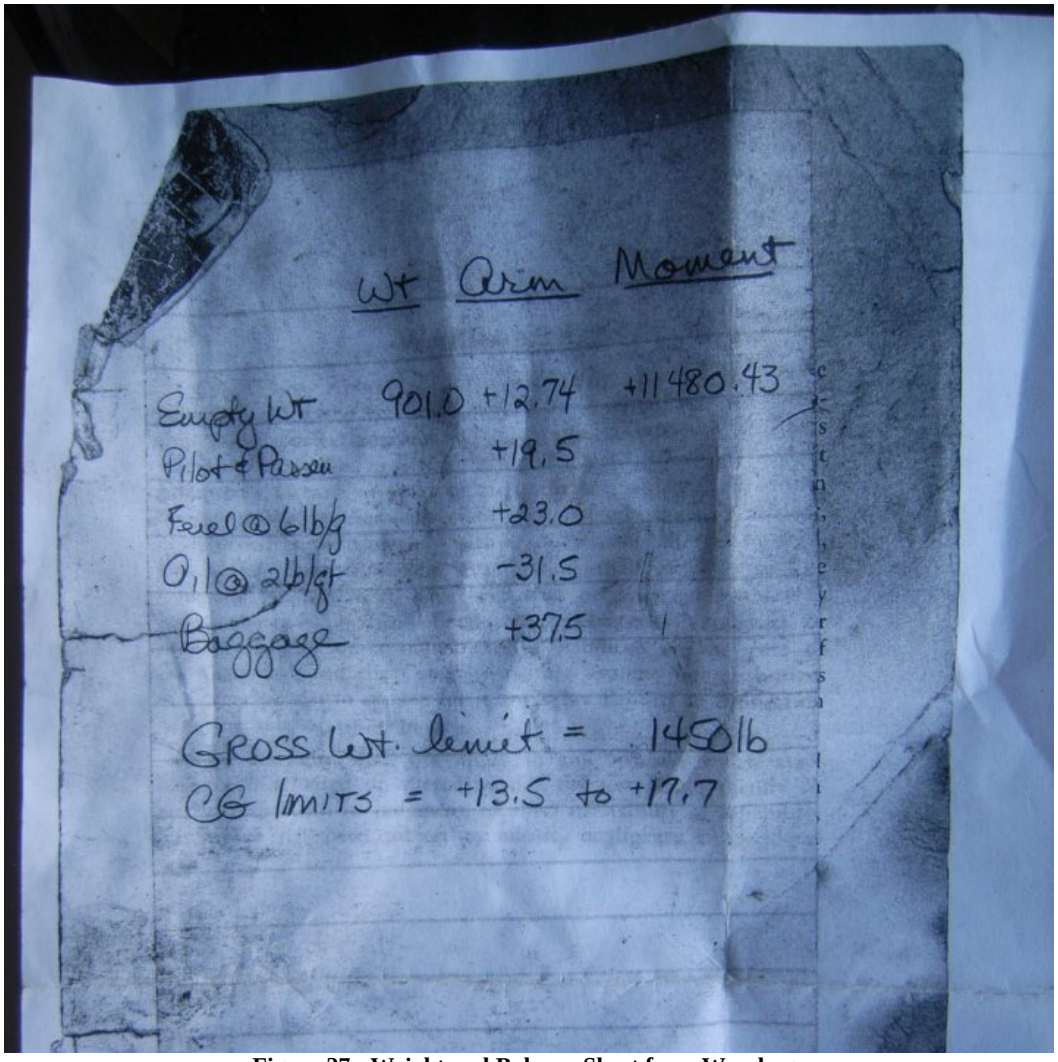


Figure 27 - Weight and Balance Sheet from Wreckage

11.0 Other Items Recovered From Wreckage

- Three Sectional aeronautical charts
  - All folded in same format as when sold
  - Two San Francisco (includes CXP, NV33 and accident site); expired 15 Jan 2009 and 14 Jan 2010

    - One Klamath Falls, expired 11 Feb 2010
- Two different hardcopy sales sheets (marketing airplane for sale, both undated)
    - Both cited KT-76A transponder, wing and panel lights, and intercom
    - One indicated "5500 TT 520 SPOH Engine 520 TTSN Prop" $15,000 price
    - One indicated "5350TT 380TTSN Prop 5/12 annual"
- Iphone
- Airplane Operation Manual published 7-79
- "Aircraft Flight Log" (see below)
- Copy of handwritten weight and balance sheet
- Bill of sale from the pilot to Sweet Technology (pilot was CEO of same, according to internet)
- A sales receipt from the Carson City Home Depot with the date/time stamp of March 8 2014, 2:12 pm

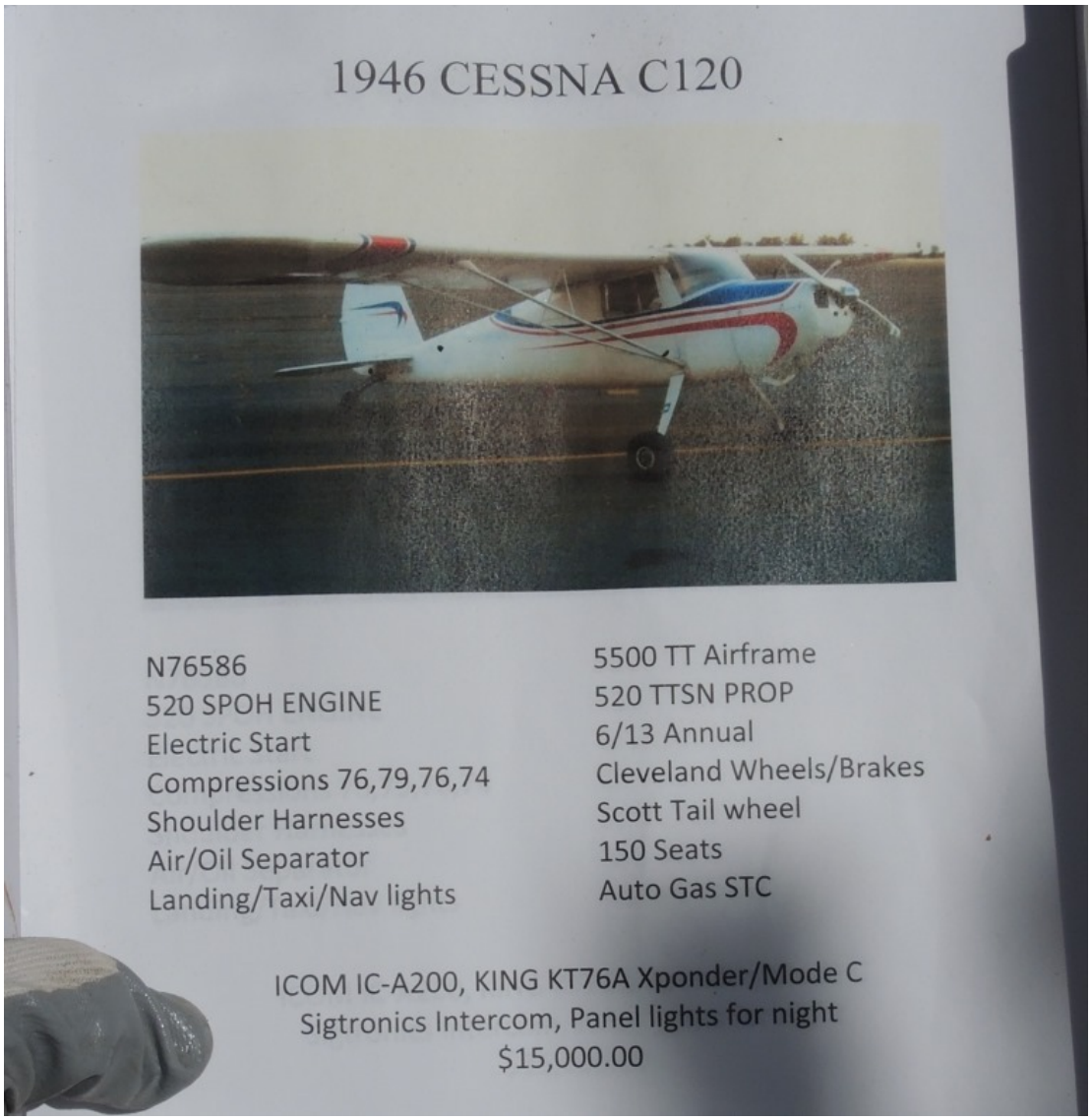


Figure 28 - Airplane Sale Sheet from Wreckage

12.0 Aircraft Log Summary

This was a commercially-available, purpose-specific notebook with handwritten entries. The following information of note was observed in the log

- The entry dates ranged from 3/7/12 to 3/2/14
- The first entry listed an airplane time of 202.37 and bore the annotation "engine run-in"
- The entries on the first 6 pages (15 entries/page) specified the first names of various pilots (Joe, Eric, Jeanne, Jim, Bill, Bart). Page 6 only contained 4 entries
- Except for about 2 lines, pages 7+ either listed "Joe" or no name as the pilot
- The 6/7/12 entry time was 280.20, and was the final entry with these 3-digit times
- The next entry was dated 6/27/12, listed a time of 3520.59, and contained the annotation "stalls, power stalls"
- The 9/22/12 entry listed a time of 3555.67, and contained the annotation "stalls"
- The 11/29/12 entry listed a time of 3567.51, and contained the annotation "replace fuel selector"
- The 6/4/13 entry listed a time of 3599.66 and contained the annotation "annual"
- Fueling quantity information was also included in multiple entries

Figure 29 - Flight Log Cover Page

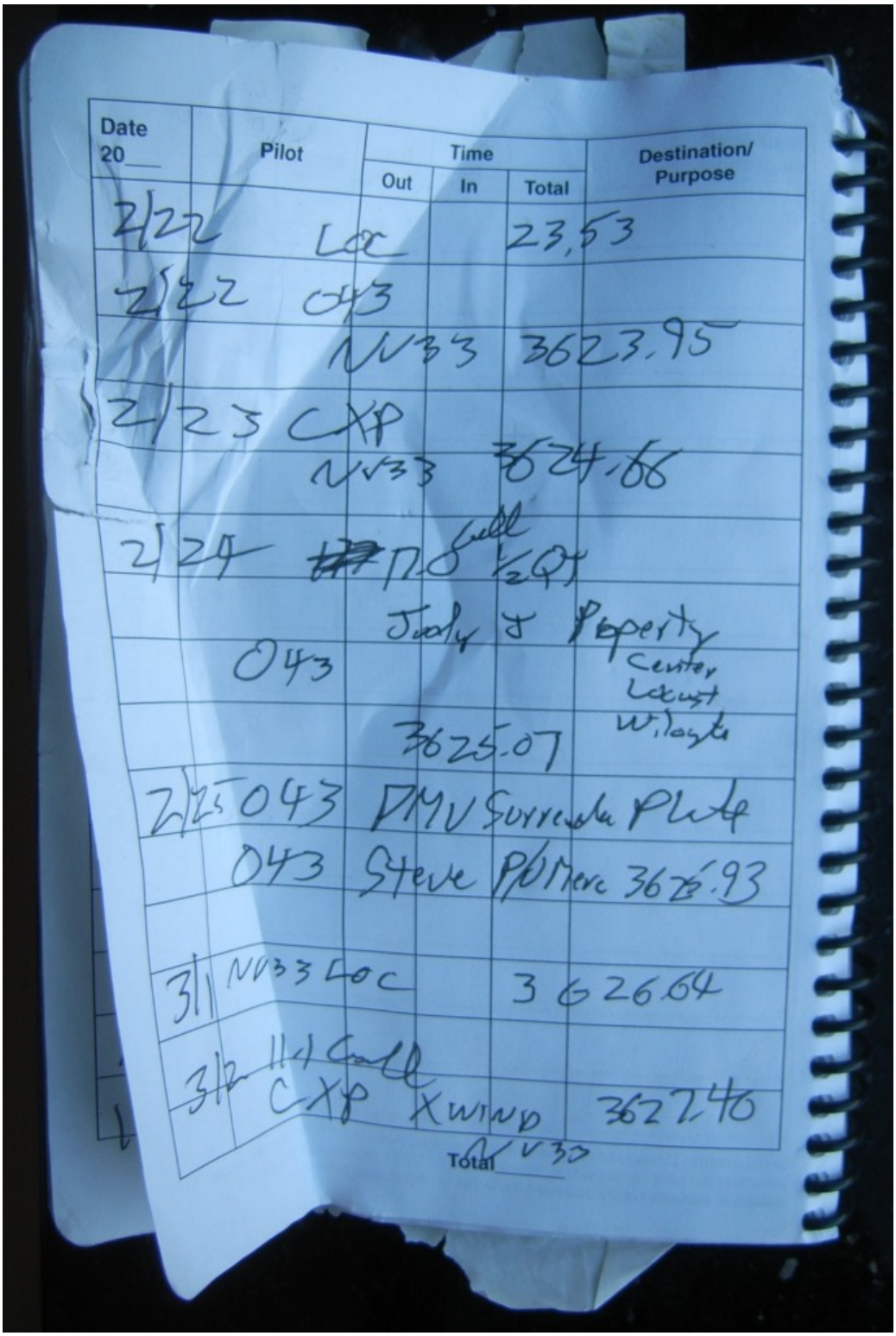
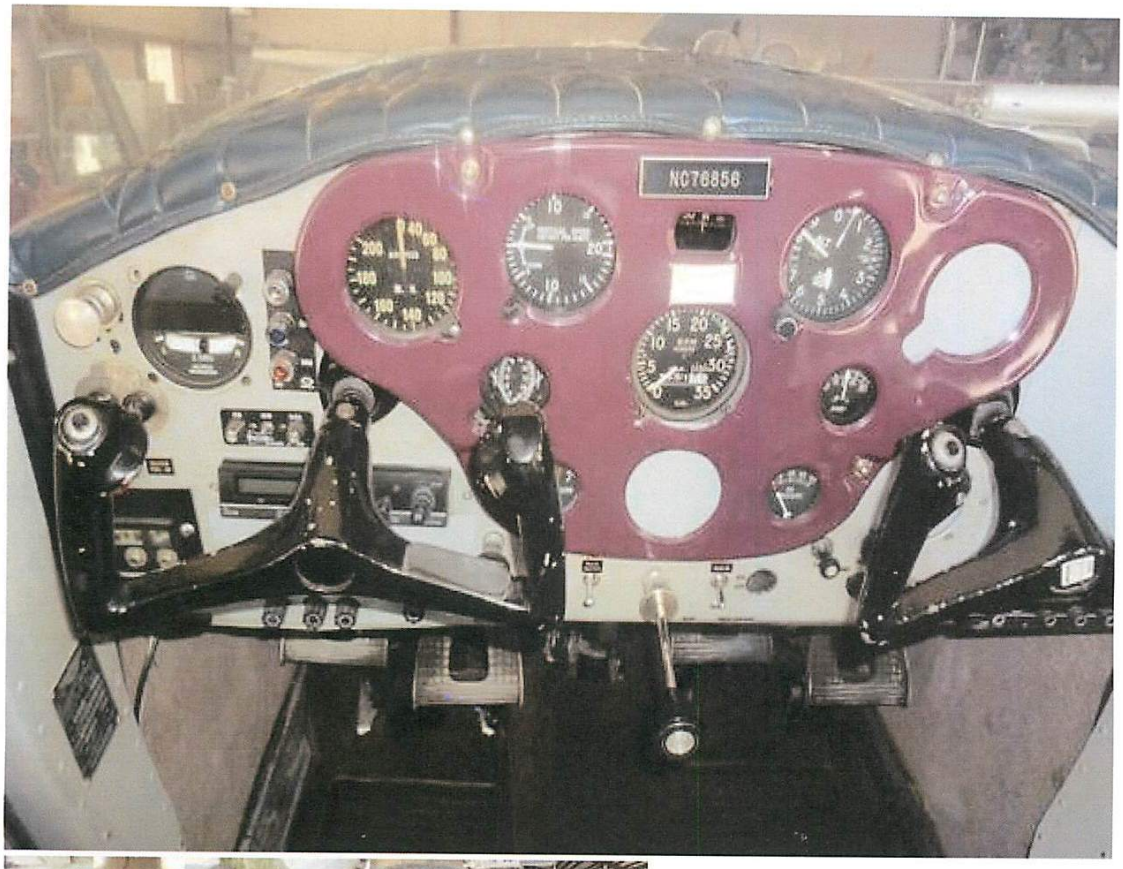


Figure 30 - Last Page of Flight Log

13.0 Navigation Information

- The FAA inspectors provided a printout of a Craigslist advertisement that they retrieved from the internet on 3/10/14
- One photo in the ad was of the instrument panel
    - The instrument panel contained two avionics units; a transponder and an undetermined radio
    - There was no nav head (eg VOR) in the panel
- The wreckage contained two avionics units; a transponder and an undetermined radio
- No handheld GPS unit or computer tablet (eg iPad) was found in the wreckage

Cessna 120 - $14500 (NV33)



1946 Cessna 120
5600 TT, 620 Since Bottom overhaul
Fresh Annual June 2013
COMPS 76, 77, 76, 72, June 2013 annual
Cleveland wheels and brakes, Shoulder Harnesses, Air/Oil Separator 150 seats
Auto Fuel STC
Scott Tailwheel
Nav, Beacon, Landing lights
Intercom, IC-A200, KT76A/Mode C
www.nv33.com

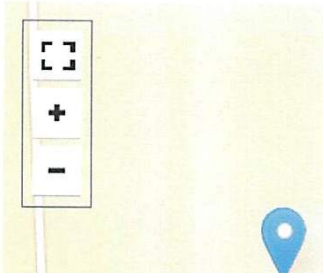


Figure 31 - Craigslist Ad for Airplane