Aviation Investigation Final Report

Location:	BOISE, Idaho	**Accident Number:**	SEA00LA172
Date & Time:	August 26, 2000, 15:00 Local	**Registration:**	N411TK
Aircraft:	Cessna 411	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

While within a two mile final to the runway, the airplane suddenly veered to the left of the approach and descended to the ground. The aircraft collided with the level terrain in a wings level and nose down attitude. The aircraft slid about 150 feet before coming to rest on its belly next to a road. The fuel cells were compromised and there was evidence of a fuel spill of unknown quantity. During the follow-up wreckage inspection, there was no evidence found to indicate a mechanical failure or malfunction. Inspection of the maintenance logbooks found that although the aircraft had been signed-off for an annual inspection, there was several discrepancy items noted, to include leaking fuel cells, which had not yet been repaired/replaced, and the aircraft was not signed off in an airworthy condition. This discrepancy list was given to the owner/operator. The pilot, who was in the process of purchasing this aircraft from an aircraft broker, stated that he was unaware that the aircraft was not airworthy, and was told by the broker that it was okay to fly the aircraft. The pilot was however, aware of the leaking fuel cells.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Aircraft control was not maintained during approach for landing.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings
1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
2. MAINTENANCE,ANNUAL INSPECTION - OTHER PERSON
3. OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - CONTINUED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
4. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On August 26, 2000, about 1500 mountain daylight time, a Cessna 411, N411TK, registered to Aircraft Emporium Inc, and operated by the private pilot as a 14 CFR Part 91 personal flight, veered off the approach to runway 28L and collided with the terrain about one mile short of the runway at Boise, Idaho. Visual meteorological conditions prevailed and no flight plan was filed. The aircraft was substantially damaged and the pilot and his passenger were seriously injured. The flight originated from Las Vegas, Nevada, about 1200 Pacific daylight time.

Due to injuries to both the pilot and passenger, neither occupant recalls the events leading up to the accident.

The Federal Aviation Administration reported that the aircraft was on approach to runway 28L when it suddenly veered to the left of course. The aircraft subsequently collided with the terrain about one mile short of the runway, and about one-quarter of a mile to the south of the approach path.

Witnesses in the area reported that the aircraft was observed on the approach when it banked to the left and descended to the ground. Another witness reported that the aircraft was "...rocking back and forth (right and left) approx. 500' over his head..." on the north side of Gowen Rd, prior to it descending to the ground.

The pilot reported that he was in the process of purchasing this aircraft from an aircraft broker in Corona, California, and that the aircraft was being "test flown for possible purchase." The flight began in Corona, California, on the morning of August 26, with a fuel stop in Las Vegas, Nevada. The flight then continued on to its final destination to Boise, Idaho.

PERSONNEL INFORMATION

The pilot holds a private pilot certificate and rated for single and multi-engine land (MEL) aircraft. Flight logbook four was provided for review. The first logbook entry was dated June 5, 1999. The last entry was dated August 8, 2000. At the time of the accident, the logbook indicated that the pilot had accumulated a total flight time in all aircraft of approximately 2,539 hours. Approximately 36 hours total time (dual received and pilot-in-command) had been accumulated in MEL aircraft, with approximately 26 hours logged as pilot-in-command (PIC). Approximately 20 of those hours were logged as PIC prior to the MEL check ride dated August 2, 2000. After the check ride, to include the approximate 3 hours flight on the day of the accident, the pilot logged approximately six hours as PIC.

On June 22, 2000, the logbook indicated a 36-minute introduction dual flight in the Cessna 411. Although the entry indicated the registration number for the accident aircraft, the pilot reported that it was entered in error and was in another Cessna 411 that the broker had available. The pilot reported that there was one other flight in the Cessna 411, but that it did not get entered in the logbook.

The logbook also indicated from July 7 to July 9, 2000, 10.3 hours logged as "second-in-command" for ferry flights in a Cessna 337.

AIRCRAFT INFORMATION

Maintenance records obtained for review indicated that the aircraft had been signed-off for an annual inspection on August 8, 2000. The entries for the airframe and engines indicated that a discrepancy list was provided to the owner/operator. The aircraft had not been returned to an airworthy condition. The discrepancy list (see attachment) indicated that several items, to include evidence of leaking auxiliary fuel tanks, had not been accomplished. When asked, the pilot reported that he was not aware that the aircraft was not airworthy, and was told by the aircraft broker that it was okay to take the aircraft for the flight to Boise. In the pilot's attached statement, he indicated that the broker had informed him that, "...the auxiliary tanks leaked when completely filled to the top."

Fuel records indicate that the aircraft was fueled at the Corona Municipal Airport on the morning of August 26, 2000. A total of 18.9 gallons of 100LL fuel was purchased. Another fuel receipt from Eagle Aviation Resources, Las Vegas, indicated 34.5 gallons of fuel was purchased that same day. The pilot reported that he does not recall the fuel quantity prior to the departures or to which fuel tanks the fuel was added. The auxiliary fuel tanks (wing tank) hold 35 useable gallons in each wing. The main tanks (wingtip) hold 50 useable gallons in each tip tank.

WRECKAGE AND IMPACT INFORMATION

The Boise Airport Police prepared a wreckage diagram of the accident site. The diagram identified ground signatures noted on the north side of Gowen Road indicating that the aircraft contacted the ground in a wings level, nose down attitude. The aircraft slid approximately 150 feet before coming to rest on its belly partially obstructing the road. The left side propeller assembly separated from the crankshaft and was on the opposite side of the road. The propeller blades remained attached in the hub. The left side main fuel tank (tip tank) separated from the left wing and was found in close proximity to the fuselage. The tank was compromised and a small amount of fuel remained in the cell. The right side main fuel tank remained attached to the wing, however, the cell was compromised and a small amount of fuel remained in the cell. The auxiliary fuel tanks (wing tanks) were found empty during the follow-up wreckage inspection. Fire department personnel reported a fuel spill at the accident site; however, the investigative team could not verify an amount. Fire suppression foam had been applied to the accident site upon Fire Department arrival.

ADDITIONAL INFORMATION

Western Aircraft, Boise, ID, removed the wreckage from the accident site and transported it to their facility at the airport. At this facility both engines were inspected. During the inspection it was noted that the spark plugs on both engines exhibited heavy electrode erosion and wide gapping. It also appeared that the exterior of the spark plugs had been bead blasted and then painted with bright silver/chrome paint. The turbochargers were free to turn and their bearing had nominal clearance. Both metering unit fuel inlet screens were removed and found to be clear of contaminants. Minimal fuel was present in the screen cavities.

The throttle control positions in the cockpit were found in the aft position, however, the throttle controls at the engines were found 7/8 open. The cockpit mixture controls were found to be mid-range for the left engine and full forward for the right. The mixture controls at the engines were found in the full rich position.

Further inspection of both engines did not reveal evidence of a pre-impact malfunction or failure.

Documentation of the cabin noted that both fuel selectors were positioned to the auxiliary fuel tanks. The Cessna 411 Owner's Manual indicates that for landing, the fuel selectors are to be selected to the main tanks (see attachment).

Control continuity was established from the ailerons, flaps, rudder and elevator to the cockpit area. The aileron, rudder and elevator trim tab positions were neutral. The landing gear selector was down. The flaps were extended.

The Federal Aviation Administration reported that this aircraft had been based in Van Nuys, California, and unused for several years. The Van Nuys Flight Standards District Office had revoked the airworthiness certificate until maintenance items (see attachment) were accomplished prior to the approval for a special ferry permit for a flight to the Corona airport.

The wreckage was released to the owner on August 31, 2000.

Pilot Information

Certificate:	Private	**Age:**	46,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	May 14, 1999
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	2539 hours (Total, all aircraft), 4 hours (Total, this make and model), 38 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N411TK
Model/Series:	411 411	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	411-0051
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 8, 2000 Annual	**Certified Max Gross Wt.:**	6500 lbs
Time Since Last Inspection:	3 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	3710 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	GTSIO-520-C
Registered Owner:	AIRCRAFT EMPORIUM INC.	**Rated Power:**	340 Horsepower
Operator:	JAMES S. DAVIS	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BOI ,2868 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	14:56 Local	**Direction from Accident Site:**	310°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	340°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	30°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	LAS VEGAS (LAS)	**Type of Flight Plan Filed:**	None
Destination:	(BOI)	**Type of Clearance:**	None
Departure Time:	12:00 Local	**Type of Airspace:**	Class C

Airport Information

Airport:	BOISE AIR TERMINAL BOI	**Runway Surface Type:**	Asphalt
Airport Elevation:	2868 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	28L	**IFR Approach:**	None
Runway Length/Width:	9763 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	43.560474,-116.209938(est)

Administrative Information

Investigator In Charge (IIC):	Eckrote, Debra
Additional Participating Persons:	RUSS GRAVES; BOISE , ID MIKE GRIMES; LANCASTER , CA SETH D BUTTNER; WITCHITA , KS
Original Publish Date:	May 18, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=50103