Aviation Investigation Final Report

Location:	GRANBURY, Texas	**Accident Number:**	FTW99LA070
Date & Time:	January 23, 1999, 10:30 Local	**Registration:**	N52170
Aircraft:	Cessna 180J	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

At departure the right fuel tank was empty, the left fuel tank contained 17 gallons, and the fuel selector was positioned to the 'BOTH' position for takeoff. After takeoff, the pilot selected the left fuel tank. Within 2 to 3 minutes after takeoff, the engine began to 'run rough and sputter.' Emergency checklist procedures did not restore engine power. Power lines crossed the approach path for the runway selected for the forced landing. The airspeed decreased as the airplane cleared the power lines and the airplane landed 'hard' on the runway. Flight control continuity was confirmed. There was continuity of fuel flow throughout the fuel system. No physical evidence of fuel leakage was found. Engine continuity was confirmed and no discrepancies were found that would prevent engine operation. The carburetor was flow tested and disassembled. No fuel flow test variations or discrepancies were noted that would prevent operation of the carburetor.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to an undetermined reason. A factor was the power lines crossing the final approach path.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: HARD LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
2. (F) AIRPORT FACILITIES,RUNWAY/LANDING AREA CONDITION - HIGH OBSTRUCTION(S)

Factual Information

On January 23, 1999, at 1030 central standard time, a Cessna 180J airplane, N52170, sustained substantial damage during a forced landing following a loss of engine power near Granbury, Texas. The airplane was owned and operated by a private individual under 14 Code of Federal Regulations (CFR) Part 91. The private pilot and the pilot rated passenger were not injured. Visual meteorological conditions prevailed for the local personal flight and a flight plan was not filed. The airplane departed a private airstrip a few minutes before the accident.

During interviews, conducted by the investigator-in-charge (IIC), and on the enclosed statements, the pilot and the passenger reported the following information. During the preflight, the fuel tanks were dipped utilizing a fuel stick made by the passenger. The right fuel tank was empty and the left fuel tank contained 17 gallons. The fuel selector was positioned to the "BOTH" position for takeoff and after 7 to 10 minutes of ground run and taxi time, the flight departed on runway 33 for the Granbury Municipal Airport for refueling. After takeoff, the pilot selected the left fuel tank. Approximately 2 to 3 minutes after takeoff, the engine began to "run rough and sputter." The pilot rated passenger switched the fuel selector to the "BOTH" position and pulled the carburetor heat to the "ON" position. The engine power was not restored. The pilot selected the Nassau Bay Airport for an emergency landing. The airspeed decreased as the airplane cleared power lines which span the approach end of runway 34 and the airplane landed "hard" on the runway. The left main gear and strut sheared from the airplane and the airplane came to rest with the left wing and propeller striking the runway. Following the accident, the pilot and acquaintances drained approximately 10 gallons of fuel from the left tank and removed the airplane from the runway. Subsequently, the airplane was transported to a hangar and stored for further examination.

The FAA inspector and the airframe manufacturer representative examined the airplane at the hangar. The airframe representative found that the left main gear box sustained structural damage and that approximately 8 inches of the outboard portion of the left elevator was found separated from the airplane. Flight control continuity was confirmed.

On February 4, 1999, the airplane was examined by the engine manufacturer representative under the surveillance of the IIC. Structural damage was confirmed at the left main landing gear attachment box and fuselage. Continuity of fuel flow through the left and right tank fuel lines, with the fuel selector in all possible positions (left, right, both), was confirmed to the carburetor. Both fuel tank caps were vented, unobstructed, and sealed. Fuel vents, fuel drains, and fuel lines were unobstructed. The fuel filter screen and the carburetor fuel screen were free of debris. The air intake and filter were free of debris. The fuel primer was in and locked.

Engine continuity was confirmed and a differential compression check was performed. The oil screen was free of debris. Both magnetos sparked at all terminals when hand rotated. The

magneto switch was operational.

The propeller blades were bent aft at the outboard 6 to 8 inch area. The propeller tips exhibited chordwise scoring.

On March 29, 1999, the carburetor was examined, under the surveillance of a NTSB investigator, at Precision Airmotive Corporation, Everett, Washington. The carburetor (original part number 10-5192) was flow tested using the 10-5192 master carburetor. No fuel flow variations were noted that would prevent operation of the carburetor. The carburetor was disassembled and inspected with no discrepancies noted that would prevent the carburetor from functioning.

A review of the maintenance records by the IIC revealed that the 1975 aircraft was registered to the current owner on November 19, 1991. In November 1996, the Continental engine TSIO-520-M was modified in accordance with P. Ponk STC #SE 4988NM Part C and assigned Ponk STC S/N 2104. The Marvel Schebler MA-4-5 carburetor was modified in accordance with P. Ponk Aviation STC #SE4988NM Part D, and assigned S/N J068902 for use with the modified engine (S/N 2104). The McCauley Propeller D3A34C401/90DFA-2 was installed per aircraft STC SA00468WI. After the modifications, the engine was recorded as model O-470-50.

The last annual inspection was performed on December 9, 1998. Time since that annual inspection was 9.8 hours. At the time of the accident, the total time on the aircraft was 6,304.6 hours, and 245.9 hours on the modified engine.

Pilot Information

Certificate:	Private	**Age:**	53,Female
Airplane Rating(s):	Single-engine land; Single-engine sea	**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:**	April 8, 1998
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	400 hours (Total, all aircraft), 160 hours (Total, this make and model), 350 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N52170
Model/Series:	180J 180J	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18052534
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	December 9, 1998 Annual	**Certified Max Gross Wt.:**	2800 lbs
Time Since Last Inspection:	10 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	6305 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	O-470-50
Registered Owner:	JAMES R. ROBINSON	**Rated Power:**	235 Horsepower
Operator:		**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:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	, TX (NONE)	**Type of Flight Plan Filed:**	Unknown
Destination:		**Type of Clearance:**	
Departure Time:	10:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	NASSAU BAY NONE	**Runway Surface Type:**	Grass/turf
Airport Elevation:	714 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	34	**IFR Approach:**	
Runway Length/Width:	2800 ft / 300 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	32.459224,-97.709968(est)

Administrative Information

Investigator In Charge (IIC):	Roach, Joyce
Additional Participating Persons:	BRYAN NOVICKIS; FORT WORTH , TX
Original Publish Date:	March 31, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45677