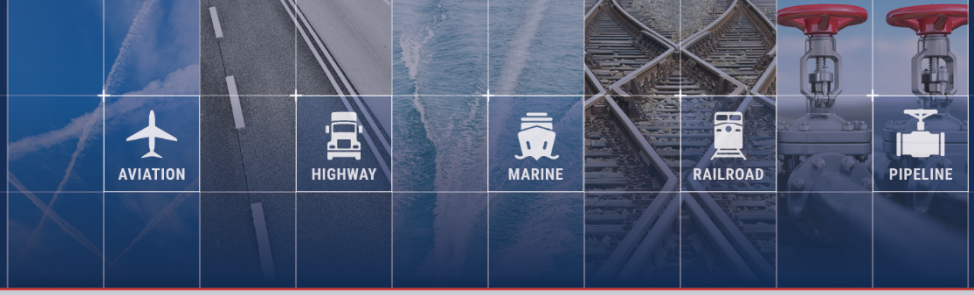

Aviation Investigation Final Report

Location:	Key West, Florida	**Accident Number:**	ERA18LA107
Date & Time:	March 15, 2018, 13:35 Local	**Registration:**	N713CX
Aircraft:	Cessna 177	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Minor, 2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airline transport pilot reported that the preflight inspection, engine start, taxi, and engine run-up were uneventful. During initial climb for the local flight, about 400 ft above ground level, the engine power suddenly reduced to idle. The pilot lowered the nose of the airplane and made a shallow left turn to avoid trees; however, the airplane contacted power lines and came to rest upright in a parking lot. The airplane sustained substantial damage to both wings and the fuselage. Examination of the wreckage revealed that adequate fuel remained on board and that fuel had leaked from the airplane after impact. During the examination, the fuel screen was removed from the fuel servo. Although some rust was observed on the screen and in the servo, consistent with the airplane sitting unused over a period of time, it is not likely that this had any impact on the operation of the engine. Further examination of the airframe and engine did not reveal any evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation. Thus, the reason for the partial loss of engine power could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A partial loss of engine power during initial climb for reasons that could not be determined because examination of the wreckage did not reveal any evidence of preimpact malfunctions or failures that would have precluded normal operation.

Findings

Not determined	(general) - Unknown/Not determined
Environmental issues	Wire - Contributed to outcome

Factual Information

History of Flight

Initial climb	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

On March 15, 2018, about 1335 eastern daylight time, a privately owned and operated Cessna 177, N713CX, was substantially damaged during a forced landing, following a partial loss of engine power during initial climb from Key West International Airport (EYW), Key West, Florida. The airline transport pilot incurred minor injuries and the two passengers were not injured. The personal flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the planned local flight that was originating at the time of the accident.

The airline transport pilot reported that his friend, the front-seat passenger, had recently purchased the airplane, but he only held a student pilot certificate and did not possess a logbook endorsement to fly that make and model airplane solo. The airline transport pilot intended to go on a short sightseeing flight with the two passengers. The preflight inspection, engine start, taxi, and engine run-up were uneventful. During initial climb from runway 9, about 400 ft above ground level, the engine power suddenly reduced to idle. The airline transport pilot lowered the nose and made a shallow left turn to avoid trees and reach shallow water; however, the airplane contacted powerlines and came to rest upright in a parking lot, prior to reaching the shallow water.

Initial examination of the wreckage by a Federal Aviation Administration (FAA) inspector revealed that both wings and the fuselage sustained substantial damage. The inspector noted that adequate fuel remained onboard and fuel had leaked from the airplane after impact. He confirmed mixture and throttle control continuity. He also confirmed that the fuel selector was positioned to both. Due to the disposition of the wreckage, the inspector was not able to rotate the propeller and planned to further examine the engine after it was recovered.

The wreckage was examined again by an FAA inspector and a National Transportation Safety Board investigator at a recovery facility. The engine remained intact and attached to its mounts; however, the mounts and firewall were impact separated from the fuselage. The accessories on the rear of the engine exhibited some damage from contact with the firewall during impact. The engine driven fuel pump exhibited an impact hole in the bottom side. One propeller blade was bent aft about midspan and both blades exhibited damage consistent with wire strikes.

The top spark plugs were removed for examination and access to the cylinders for a lighted borescope. The spark plug electrodes were intact and light gray in color. When the propeller was rotated by hand, thumb compression was established to all cylinders. Valve train continuity was established to the rear accessory section of the engine. Both magnetos were removed and produced spark at all leads when rotated by an electric drill. The air filter was removed and examined. The air flow ducts to the fuel servo

were clear and unobstructed. The fuel flow divider was disassembled and noted to be absent of any debris. The diaphragm was intact and did not exhibited any damage. When the fuel sump was disassembled, its fuel screen was observed to be dry and absent of debris. The fuel sump bowl contained a small amount of gel at the bottom. The fuel screen was removed from the fuel servo. The screen exhibited some rust on the screen and in the servo, consistent with the airplane sitting unused over a period of time.

The examination of the engine did not reveal any preimpact mechanical malfunctions.

The four-seat, high-wing, fixed-tricycle-gear airplane was manufactured in 1968 and powered by a Lycoming IO-360, 200-horsepower engine, equipped with a two-blade, fixed-pitch, Hartzell propeller. Review of FAA records revealed that the student pilot purchased the airplane on October 16, 2017. Review of the airplane's maintenance records revealed that the most recent annual inspection was completed on February 1, 2018. At that time, the airframe had accumulated about 3,602 total hours of operation and the engine had accumulated 1,771 hours since major overhaul. The airplane had flown about 2 hours from the time of the most recent annual inspection, until the accident.

The recorded weather at EYW, at 1253, was: wind from 030° at 14 knots; visibility 10 statute miles; clear sky; temperature 19° C; dew point 9° C; altimeter 30.17 inches of mercury.

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer; Private	**Age:**	58,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	September 25, 2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 6, 2017
Flight Time:	15050 hours (Total, all aircraft), 3 hours (Total, this make and model), 4000 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N713CX
Model/Series:	177	**Aircraft Category:**	Airplane
Year of Manufacture:	1968	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	17701121
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	February 28, 2018 Annual	**Certified Max Gross Wt.:**	2550 lbs
Time Since Last Inspection:	2 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3602 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	C91 installed, not activated	**Engine Model/Series:**	IO-360
Registered Owner:		**Rated Power:**	200 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	EYW,3 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	33°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	14 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	30°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.17 inches Hg	**Temperature/Dew Point:**	19°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Key West, FL (EYW)	**Type of Flight Plan Filed:**	None
Destination:	Key West, FL (EYW)	**Type of Clearance:**	None
Departure Time:	13:35 Local	**Type of Airspace:**	

Airport Information

Airport:	Key West International EYW	**Runway Surface Type:**	Asphalt
Airport Elevation:	3 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	09	**IFR Approach:**	None
Runway Length/Width:	4801 ft / 100 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 2 None	**Latitude, Longitude:**	24.55611,-81.759445(est)

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Donald H Casto; FAA/FSDO; Miramar, FL
Original Publish Date:	May 29, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=96881