



National Transportation Safety Board Aviation Accident Factual Report

Location:	Miami, FL	Accident Number:	CEN19LA252
Date & Time:	08/05/2019, 0940 EDT	Registration:	N5915U
Aircraft:	Piper PA28	Aircraft Damage:	Substantial
Defining Event:	Fuel contamination	Injuries:	2 Serious, 1 Minor
Flight Conducted Under:	Part 91: General Aviation - Instructional		

On August 5, 2019, about 0940 eastern daylight time, a Piper PA28 140 airplane, N5915U, impacted vegetation and terrain during a forced landing following a loss of engine power after takeoff from the Miami Executive Airport (TMB), near Miami, Florida. The flight instructor received minor injuries and the student and passenger reported receiving serious injuries. The airplane sustained substantial wing and fuselage damage during the forced landing. The airplane was registered to and operated by Osorio Aviation Corp. as a Title 14 *Code of Federal Regulations* Part 91 instructional flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was not operated on a flight plan. The local flight was originating from TMB at the time of the accident.

According to the flight instructor, a preflight inspection of the airplane was conducted. Some oil was added to the engine and a check of the fuel revealed about 30-40 gallons was present. The passenger, student pilot, and flight instructor boarded the airplane and followed the checklist to start the airplane engine, which they describe as a "normal" start. They copied the automated terminal information service details, which indicated calm wind and that runways 27R/27L were in use. After that, they contacted clearance and ground controllers, and subsequently taxied via taxiway alpha for runway 27R.

The instructor added that the engine run up was conducted using the checklist. The magneto check produced about a 50 RPM drop for each magneto. The carburetor heat test indicated about a 50 RPM drop. The fuel pump was on, all gauges were indicating in the green arc, and all the indications were "normal."

The tower controller subsequently issued a clearance for takeoff and the student conducted the takeoff that was a normal takeoff with no flaps. The student rotated the airplane about 75 kts. At 150-200 ft above ground level, the engine RPMs dropped about 200-300 RPMs like a partial loss of power. The instructor subsequently took over the controls. The instructor checked if all the switches were on and if the throttle was full forward. "Everything" was good. The instructor elected to keep climbing at 70-75 kts, which is the best glide speed. He advised the tower that he was going to land the airplane on 9R. During the turn the engine completely lost power and the instructor decided to do a force landing on a corn field between runway 9R

and 9L. After the landing, the instructor assessed the occupants and advised the tower of their location and need for immediate medical assistance. He secured the airplane and they evacuated the airplane.

At 0907, the recorded weather at TMB was: Wind calm; visibility 10 statute miles; sky condition few clouds at 800 ft, few clouds at 1,400 ft; temperature 28° c; dew point 26° C; altimeter 30.03 inches of mercury.

At 0953, the recorded weather at TMB was: Wind calm; visibility 10 statute miles; sky condition clear; temperature 30° C; dew point 26° C; altimeter 30.04 inches of mercury.

The temperature and dew point spread present about the time of the accident was in the light carburetor icing range at cruise or descent power.

A Federal Aviation Administration inspector examined the airplane. During sampling the left-wing fuel tank sump, 16 oz of water was removed. The airplane was recovered on a flatbed truck. Another sample was taken where contamination consistent with fuel and water was found. The gascolator bowl was broken. However, it contained a liquid consistent with water and fuel. The carburetor sampling also found the same contamination.

Pilot's Handbook of Aeronautical Knowledge, FAA-H-8083-25B, Aircraft Systems, in part, stated:

Fuel Contamination

Accidents attributed to powerplant failure from fuel contamination have often been traced to:

- Inadequate preflight inspection by the pilot
- Servicing aircraft with improperly filtered fuel from small tanks or drums
- Storing aircraft with partially filled fuel tanks
- Lack of proper maintenance

Fuel should be drained from the fuel strainer quick drain and from each fuel tank sump into a transparent container and then checked for dirt and water. When the fuel strainer is being drained, water in the tank may not appear until all the fuel has been drained from the lines leading to the tank. This indicates that water remains in the tank and is not forcing the fuel out of the fuel lines leading to the fuel strainer. Therefore, drain enough fuel from the fuel strainer to be certain that fuel is being drained from the tank. The amount depends on the length of fuel line from the tank to the drain. If water or other contaminants are found in the first sample, drain further samples until no trace appears.

Water may also remain in the fuel tanks after the drainage from the fuel strainer has ceased to show any trace of water. This residual water can be removed only by draining the fuel tank sump drains.

Water is the principal fuel contaminant. Suspended water droplets in the fuel can be identified by a cloudy appearance of the fuel, or by the clear separation of water from the colored fuel, which occurs after the water has settled to the bottom of the tank. As a safety measure, the fuel sumps should be drained before every flight during the preflight inspection.

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	22, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last FAA Medical Exam:	05/16/2018
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	02/11/2019
Flight Time:	1539 hours (Total, all aircraft), 4.3 hours (Total, this make and model), 1399 hours (Pilot In Command, all aircraft), 56 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 2.8 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	Foreign; Private	Age:	18, Female
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without Waivers/Limitations	Last FAA Medical Exam:	11/16/2018
Occupational Pilot:	No	Last Flight Review or Equivalent:	04/27/2019
Flight Time:	99.7 hours (Total, all aircraft), 7.5 hours (Total, this make and model), 66 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 31 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N5915U
Model/Series:	PA28 140	Aircraft Category:	Airplane
Year of Manufacture:	1970	Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	28-26897
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	06/24/2019, Unknown	Certified Max Gross Wt.:	2150 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	9800 Hours as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed	Engine Model/Series:	O-320
Registered Owner:	Osorio Aviation Corp	Rated Power:	140 hp
Operator:	Osorio Aviation Corp	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KTMB, 10 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0907 EDT	Direction from Accident Site:	31°
Lowest Cloud Condition:	Few / 800 ft agl	Visibility	10 Miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	28°C / 26°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Miami, FL (TMB)	Type of Flight Plan Filed:	None
Destination:	Miami, FL (TMB)	Type of Clearance:	VFR
Departure Time:	0940 EDT	Type of Airspace:	Class D

Airport Information

Airport:	MIAMI EXECUTIVE (TMB)	Runway Surface Type:	N/A
Airport Elevation:	10 ft	Runway Surface Condition:	Vegetation
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Serious, 1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious, 1 Minor	Latitude, Longitude:	25.647500, -80.433333 (est)

Administrative Information

Investigator In Charge (IIC):	Edward F Malinowski
Additional Participating Persons:	Juan Garcia; Federal Aviation Administration; Miramar, FL
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=100007