



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Everglades City, FL	<b>Accident Number:</b>	ERA18LA050
<b>Date &amp; Time:</b>	12/16/2017, 1320 EST	<b>Registration:</b>	N95550
<b>Aircraft:</b>	CESSNA 152	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The pilot reported that while in level cruise flight on the personal flight, he adjusted the throttle and mixture controls. Shortly after, the engine lost total power. Emergency engine procedures did not restore engine power, and the pilot selected a nearby airport for a forced landing. During the subsequent emergency landing, the airplane struck a perimeter fence before impacting the ground just short of the runway, which resulted in substantial damage to the fuselage. A postaccident engine examination revealed that when the mixture control was manipulated, the cable moved, but the mixture arm on the carburetor did not move. When the fiber lock nut that attached the mixture cable to the mixture arm was tightened, the mixture linkage operated normally. The engine was then started and operated at various power settings. Given the absence of mechanical issues other than the loose mixture control fiber lock nut, it is likely that the mixture linkage became loose and the mixture control arm vibrated to the lean direction, which resulted in the mixture being too lean and the engine losing total power.

## Probable Cause and Findings

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

The loose nut connecting the mixture control cable to the mixture control arm, which resulted in the pilot's inability to control the mixture and the subsequent total loss of engine power.

## Findings

**Aircraft**

Engine (reciprocating) - Malfunction (Cause)

**Environmental issues**

Fence/fence post - Contributed to outcome

## Factual Information

On December 16, 2017, about 1320 eastern standard time, a Cessna 152, N95550, experienced a total loss of engine power and impacted terrain prior to the runway at Oasis Ranger Station – US Government Airport (9FL7), Everglades City, Florida. The airplane was substantially damaged, and the two private pilots were not injured. The airplane was registered to and operated by Flying Academy Miami as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan was filed for the flight. The flight originated at Miami Executive Airport (TMB), Miami, Florida, and was destined for Venice Municipal Airport (VNC), Venice, Florida.

According to the pilot flying, they departed TMB with about 26 gallons of fuel and climbed to a cruise altitude of 4,500 ft mean sea level (msl). He reduced engine power, leaned the mixture, and approximately 5 minutes later, the engine lost total power. He declared an emergency and elected to try to land at 9FL7, which was nearby, and began attempting to restart the engine. The airplane continued to descend, they entered the base leg of the traffic pattern, and he "secured the cockpit for landing," by leaning the mixture, pulling the throttle fully aft, turning the carburetor heat and the electrical equipment off. According to the pilot not flying, while on final approach to the runway, they unsuccessfully attempted to restart the engine "one last time," but the propeller "only spun three times and then stopped." While on short final, the airplane struck an airport perimeter fence prior to impacting the ground just short of the runway.

The airplane came to rest upright in a grassy area. An examination of the airplane revealed that the fuselage was wrinkled and substantially damaged.

According to Federal Aviation Administration (FAA) records, the airplane was issued an airworthiness certificate in 1984, and registered to the corporation in 2016. It was equipped with a Lycoming O-235-L2C, a 110-hp, engine. According to the engine maintenance logbook, the most recent 100-hour inspection was completed on November 24, 2017, at a total time of 10,264.5 hours, and a tach time of 1899.3 hours. The most recent work on the carburetor occurred on July 4, 2017, when it was replaced at a tach time of 1747.7 hours. No other entries or remarks were in the maintenance logs associated with the carburetor. The tachometer time at the time of the accident was 1930.5 hours.

An examination of the engine by a National Transportation Safety Board investigator revealed that it remained attached to the airframe. Suction and compression were confirmed on all the cylinders and the spark plugs exhibited normal wear when compared to the Champion Check-A-Plug Chart. The throttle linkage remained secure to the carburetor. The mixture control was manipulated, and the cable moved, but the mixture arm on the carburetor did not move. The fiber locking nut that attached the mixture cable to the mixture arm was tightened and then the mixture cable and arm moved without anomaly. The airplane was secured to a trailer, fuel was plumbed into to the carburetor, and the engine was started. It ran smoothly, the engine power was increased with the throttle until an increase in RPM was noted, and then the engine was shutdown.

## History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Landing	Collision during takeoff/land
Emergency descent	Off-field or emergency landing Collision with terr/obj (non-CFIT)

## Pilot Information

Certificate:	Private	Age:	18, Male
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 1 Without Waivers/Limitations	Last FAA Medical Exam:	10/04/2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	29.9 hours (Pilot In Command, all aircraft)		

## Pilot-Rated Passenger Information

Certificate:	Foreign; Private	Age:	21, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Right
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:	10/04/2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

## Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N95550
Model/Series:	152 NO SERIES	Aircraft Category:	Airplane
Year of Manufacture:	1984	Amateur Built:	No
Airworthiness Certificate:	Utility	Serial Number:	15285918
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	11/24/2017, 100 Hour	Certified Max Gross Wt.:	1669 lbs
Time Since Last Inspection:	31 Hours	Engines:	1 Reciprocating
Airframe Total Time:	10264.5 Hours as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O-235-L2C
Registered Owner:	Flying Academy Miami	Rated Power:	110 hp
Operator:	Flying Academy Miami	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	TMB, 10 ft msl	Distance from Accident Site:	35 Nautical Miles
Observation Time:	1253 EST	Direction from Accident Site:	112°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	100°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.16 inches Hg	Temperature/Dew Point:	27°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	MIAMI, FL (TMB)	Type of Flight Plan Filed:	None
Destination:	VENICE, FL (VNC)	Type of Clearance:	Unknown
Departure Time:	1300 EDT	Type of Airspace:	

## Airport Information

Airport:	OASIS RANGER STATION-U S GOVER (9FL7)	Runway Surface Type:	Gravel
Airport Elevation:	10 ft	Runway Surface Condition:	Dry; Vegetation
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	2060 ft / 150 ft	VFR Approach/Landing:	Forced Landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	25.863611, -81.034722 (est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Heidi Kemner	<b>Report Date:</b>	05/28/2020
<b>Additional Participating Persons:</b>	Erik Lee; FAA/FSDO; Miramar, FL		
<b>Publish Date:</b>	05/28/2020		
<b>Note:</b>	The NTSB did not travel to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=96493">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=96493</a>		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).