Aviation Investigation Final Report

Location:	Arecibo, Puerto Rico	**Accident Number:**	ERA18TA193
Date & Time:	July 14, 2018, 17:40 Local	**Registration:**	N594TC
Aircraft:	Quicksilver MXL II	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After the local flight, the noncertificated pilot approached the airport for landing. During the approach, he performed a go-around, and the airplane encountered strong winds, so he decided to turn 180° to land on the opposite runway. While turning, about 1/2 mile from the runway, the engine lost total power, so the pilot landed the airplane straight ahead into marshy terrain in a nose-low attitude. The empennage and fuselage sustained substantial damage.

Postaccident examination of the airplane revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation. The 6-gallon fuel tank was found empty, and the fuel cap was found secured to the tank. The pilot reported that the airplane departed with 5 gallons of fuel onboard for the flight, which was about 1 hour 10 minutes long, and the estimated fuel consumption for the airplane was between about 5.3 and 6 gallons per hour. It is likely that, during the go-around and maneuver to return to the airport, the fuel supply was exhausted, which resulted in a total loss of engine power.

Probable Cause and Findings

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

The noncertificated pilot's improper fuel planning and management, which resulted in a total loss of engine power due to fuel exhaustion.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	Fuel - Fluid level
Aircraft	Fuel - Fluid management
Personnel issues	Fuel planning - Pilot
Personnel issues	Qualification/certification - Pilot

Factual Information

History of Flight

Approach-VFR go-around	Other weather encounter
Approach-VFR go-around	Fuel exhaustion (Defining event)
Approach-VFR go-around	Loss of engine power (total)
Approach-VFR go-around	Collision with terr/obj (non-CFIT)

On July 14, 2018, about 1740 Atlantic standard time, an experimental light sport Quicksilver MXL II, N594TC, was substantially damaged when it impacted terrain during a forced landing at Antonio (Nery) Juarbe Pol Airport (ABO), Arecibo, Puerto Rico. The non-certificated pilot sustained serious injuries. The airplane was operated by the pilot as a personal flight 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 local flight, which departed at 1630.

According to a Federal Aviation Administration (FAA) inspector, the pilot reported that he was returning to ABO after about a one-hour local flight and approached runway 8. During the approach, he performed a go-around and subsequently encountered strong wind, and decided to turn 180° to land on runway 26. While turning, about 1/2 mile from runway 26, the engine experienced a total loss of engine power. The pilot landed straight ahead into marshy terrain in a nose low attitude. The pilot reported that he took off with 5 gallons of fuel on board.

According to a FAA inspector who examined the airplane at the accident site, the airplane sustained substantial damage to the empennage and fuselage. Flight control continuity was confirmed from the flight control surfaces to the cockpit. Engine cylinder compression and powertrain continuity were established by rotating the propeller by hand. The fuel selector was found in the off position. The fuel tank was found empty, the fuel cap remained secured, and there was no sign of fuel leakage. The fuel filter container was about 1/2 full of fuel. The ABO airport's daily aircraft activity logbook showed that the accident airplane departed at 1630 local, which resulted in a total flight time of 1 hour and 10 minutes.

According to FAA airman records, the pilot was issued a third class medical and student pilot certificate in December 2011, which expired in December 2013. There was no record found that the pilot held an airman certificate.

According to Title 14 Code of Federal Regulations Part 61, the pilot was required to hold at least a student pilot certificate, with appropriate solo endorsements, to operate the airplane.

According to FAA airworthiness records, the two-seat, single-engine, high-wing airplane was manufactured in 1995. It was equipped with a Rotax 503 DI/SC engine. The airplane had a total fuel capacity of 6-gallons. The Rotax 503 engine data sheet stated that the fuel consumption was about 5.3 to 6 gallons per hour.

The weather conditions reported at 1750 at Rafael Hernandez Airport (BQN), Aguadilla, Puerto Rico, 27 miles from the accident site, included wind from 090° at 16 knots, gusting to 23 knots, visibility 10 statute miles, broken clouds at 1,800 ft, temperature 28°C, and dew point 23°C.

Student pilot Information

Certificate:	None	**Age:**	74,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	None None	**Last FAA Medical Exam:**	December 7, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Quicksilver	**Registration:**	N594TC
Model/Series:	MXL II	**Aircraft Category:**	Airplane
Year of Manufacture:	1995	**Amateur Built:**	
Airworthiness Certificate:	Experimental light sport (Special)	**Serial Number:**	5690
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	720 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	320.1 Hrs at time of accident	**Engine Manufacturer:**	Rotax
ELT:	Not installed	**Engine Model/Series:**	503
Registered Owner:		**Rated Power:**	100
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:	BQN,8 ft msl	**Distance from Accident Site:**	27 Nautical Miles
Observation Time:	17:50 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 1800 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	16 knots / 23 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	90°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	28°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Arecibo, PR (ABO)	**Type of Flight Plan Filed:**	None
Destination:	Arecibo, PR (ABO)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

Airport Information

Airport:	Antonio/Nery/Juarbe Pol ABO	**Runway Surface Type:**	Asphalt
Airport Elevation:	20 ft msl	**Runway Surface Condition:**	Vegetation
Runway Used:	26	**IFR Approach:**	None
Runway Length/Width:	3963 ft / 60 ft	**VFR Approach/Landing:**	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	18.455278,-66.663055(est)

Administrative Information

Investigator In Charge (IIC):	Gerhardt, Adam
Additional Participating Persons:	Luis Nunez; FAA/FSDO; San Juan, PR
Original Publish Date:	April 30, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97798