Aviation Investigation Final Report

Location:	Hernando Beach, Florida	**Accident Number:**	ERA12LA522
Date & Time:	August 22, 2012, 11:40 Local	**Registration:**	N2970G
Aircraft:	Piper PA-28RT-201T	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

While en route over the Gulf of Mexico, the pilot reported that the engine began to run rough and experienced a partial loss of power. The pilot declared an emergency, searched for a place to land, and performed a gear-up landing in the water. The pilot egressed and was rescued by the U.S. Coast Guard. A postaccident engine examination revealed that the No.6 cylinder fuel injection nozzle was blocked with debris. After the fuel nozzle was cleaned and reinstalled, an engine run was performed. The engine started and ran smoothly, accelerated to maximum power without hesitation, and was shut down with no anomalies noted. It is likely that a small particle of debris in the fuel became lodged in the No. 6 fuel injection nozzle, which resulted in the loss of engine power.

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 due to a blockage of the No. 6 cylinder fuel injector nozzle.

Findings

Aircraft	Fuel injector nozzle - Malfunction

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Emergency descent	Ditching

On August 22, 2012, about 1140 eastern daylight time, a Piper PA-28RT-201T, N2970G, was substantially damaged following a ditching into the Gulf of Mexico, near Hernando Beach, Florida. The private pilot was not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. The flight departed Knoxville Downtown Island Airport (DKX), Knoxville, Tennessee, about 0800 with the intended destination of St. Petersburg-Clearwater International Airport (PIE), St. Petersburg-Clearwater, Florida.

According to the pilot, he fueled the airplane prior to the accident flight. While en route, the pilot maneuvered the airplane around several thunderstorms before the engine began to run rough and experienced a partial loss of power over the Gulf of Mexico. The pilot declared an emergency, searched for a place to land, and located a few islands nearby. Unable to maintain altitude, the pilot performed a gear-up landing in the water, and the airplane came to rest in approximately 3 to 4 feet of water. The pilot egressed and was rescued by the U.S. Coast Guard around 1215.

The pilot held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. His most recent Federal Aviation Administration (FAA) third-class medical certificate was issued June 28, 2011. He reported 4,660 total hours of flight time, of which 3,085 were in the accident airplane make and model.

According to FAA records, the airplane was manufactured in 1979 and registered to the owner in 2006. It was equipped with a Continental Motors TSIO-360-FB1B, 200-horsepower engine. The airplane's most recent annual inspection was completed on September 16, 2011. At the time of the accident, the airplane had accumulated 10,507 total hours of flight time.

The 1053 recorded weather observation at Hernando County Airport (BKV), Brooksville, Florida, located approximately 15 miles to the east of the accident location, included wind from 180 degrees at 7 knots, visibility 10 miles, clear skies, temperature 28 degrees C, dew point 24 degrees C; barometric altimeter 30.09 inches of mercury, and a remark of distant lightning to the north and northwest of the airport.

The airplane was recovered from the water two days after the accident and moved to a salvage facility, where an engine examination was conducted on September 7, 2012. The

engine remained intact and exhibited signs of salt water immersion. The variable pitch propeller was still attached, and all three blades displayed minor bending. The spark plugs were removed prior to inspection of the engine. The spark plugs showed signs of salt water immersion and of normal wear. The internal magneto timing could not be verified due to salt water damage. A visual inspection of the fuel supply line fittings revealed significant amounts of rust.

The first attempt to start the engine resulted in intermittent firing. The spark plugs were removed and cleaned of salt water contamination. The engine was started a second time, which resulted in rough-running operation at a maximum power of 2,000 rpm with the fuel mixture set to full rich. A third engine run was performed, and the engine continued to run rough. Further examination revealed that the No.6 cylinder was cold. The No.6 cylinder spark plugs were removed, cleaned, and reinstalled. The No.6 fuel injection nozzle was removed and found to be clogged with debris. The nozzle was cleaned and reinstalled into the cylinder. The fourth and fifth engine runs resulted in smooth operation, and the engine reached a maximum of 2,600 rpm.

The aircraft was equipped with a JBI Engine Analyzer unit. Readout of the unit at the NTSB Recorders Laboratory showed that for undetermined reasons the unit did not record the final stages of the accident flight.

Pilot Information

Certificate:	Private	**Age:**	50,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	June 28, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 21, 2012
Flight Time:	4660 hours (Total, all aircraft), 3085 hours (Total, this make and model), 4433 hours (Pilot In Command, all aircraft), 45 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N2970G
Model/Series:	PA-28RT-201T	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28R-7931283
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	September 16, 2011 Annual	**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	10507 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-360 SER
Registered Owner:	TURBO ARROW AVIATION LLC	**Rated Power:**	225 Horsepower
Operator:	TURBO ARROW AVIATION LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BKV,76 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	10:53 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	28°C / 24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Knoxville, TN (DKX)	**Type of Flight Plan Filed:**	None
Destination:	St. Petersburg, FL (PIE)	**Type of Clearance:**	VFR flight following
Departure Time:	07:55 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	28.426389,-82.693054(est)

Administrative Information

Investigator In Charge (IIC):	Diaz, Allison
Additional Participating Persons:	Frank Crawford; FAA/FSDO; Tampa, FL Jason Lukasik; Continental Motors, Inc.; Mobile, AL
Original Publish Date:	August 13, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=84760