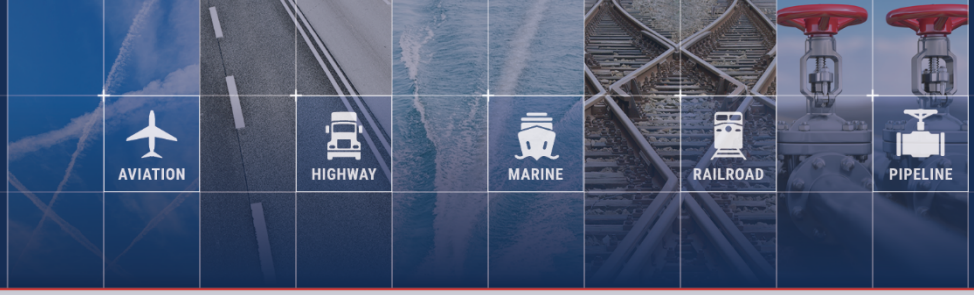

Aviation Investigation Final Report

Location:	Clifton, Texas	**Accident Number:**	CEN15LA357
Date & Time:	July 13, 2015, 15:20 Local	**Registration:**	N7768Y
Aircraft:	Piper PA 30	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that the accident flight was the first flight following an annual inspection. During initial climb after takeoff, he noticed that the fuel flow to the right engine was higher than normal, and that the exhaust gas temperature was lower than normal. He noted that moving the propeller control had no effect on propeller rpm, and he elected to return to the airport. On the downwind leg of the traffic pattern for landing, the right engine experienced a total loss of power, and the pilot was unable to restart the engine or feather the propeller. The pilot also stated that the propeller was not windmilling following the loss of power. During the subsequent final landing approach, when the airplane was about 20 feet above the ground, the right wing "suddenly and violently rolled to the right," and the airplane impacted the ground.

Postaccident examination of the airplane's engines, ignition systems, fuel system, and fuel controls did not reveal any anomalies, and a reason for the loss of engine power could not be determined. Although a first responder to the accident observed the right engine fuel selector in the auxiliary tank position, no information was available regarding fuel quantities present in the fuel tanks at the time of the accident. Examination of the right propeller revealed that the propeller dome had no air charge, which is likely the reason for the lack of response to the pilot's propeller control inputs; however, this should not have prevented the propeller from entering the feather position after the engine lost power. It is likely that the propeller did not feather because the start locks engaged following the loss of power and the pilot's subsequent attempts to restart the engine.

Probable Cause and Findings

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

The pilot's failure to maintain control during a precautionary landing following a total loss of power to one engine. The reason for the loss of engine power could not be determined based on available information.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Approach-VFR pattern downwind	Loss of engine power (total) (Defining event)
Landing	Loss of control in flight
Landing	Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

On July 13, 2015, about 1520 central daylight time, a Piper PA-30 airplane, N7768Y, was destroyed during an attempted forced landing to runway 14 at the Clifton Municipal Airport (7F7), near Clifton, Texas. The pilot, who held an airline transport pilot certificate, received minor injuries. The airplane was registered to and operated by the pilot as a 14 Code of Federal Regulations Part 91 personal flight. Visual meteorological conditions prevailed for the flight, which was not on a flight plan. The flight was originating at the time of the accident and was destined for the San Antonio International Airport (SAT), San Antonio, Texas.

The pilot reported that the accident flight was the first flight following an annual inspection of the airplane. He stated that he performed a pre-flight inspection of the airplane that included checking fuel, oil, and the replacement and securing of access panels. He stated that both of the engines started immediately and that pre-takeoff checks were normal. On takeoff the pilot noted that all of the engine instrument readings were normal with the exception of the fuel flow for the right engine. The reading was 17 gallons per hour versus the 14 gallon per hour reading expected. After becoming airborne, the fuel flow on the right engine remained the same and the engine RPM was at maximum. Under these conditions the right engine exhaust gas temperature (egt) was about 100 degrees lower than that of the left engine. He noted that his experience with the airplane was that the egt readings were normally very close to the same. He retarded the propeller control lever with no resulting change in rpm. Cycling the prop lever had no effect and he decided to return to 7F7. As he turned onto a downwind traffic pattern leg, the right engine suddenly stopped with no warning. He stated that the engine rpm reduced rapidly and the propeller would not windmill. He was unable to restart or feather the failed right engine. During the ensuing forced landing, about 20 ft above ground level, the airplane suddenly and violently rolled to the right. The airplane traveled across the taxiway parallel to the runway, onto the ramp, and came to rest behind a row of buildings on the southwest side of the runway. During the event, the airplane struck another airplane that was parked on the ramp area of the airport. The pilot reported that the airplane immediately caught fire and he exited unaided from the airplane.

A witness reported seeing the airplane in a wing down, nose down attitude heading toward the aircraft parking area. When the airplane came to rest he retrieved a fire extinguisher and began putting out fires in and around the airplane. Another witness reported that once the fires were under control, he entered the airplane's cockpit to turn off the airplane's emergency locator transmitter, and to shut off the fuel selectors. Upon shutting off the fuel selectors, the witness noted that the right fuel selector was only one detent from the off position, indicating that it was positioned for the auxiliary fuel tank.

The pilot reported that his normal procedure was to take off with the fuel selectors positioned for the main fuel tanks. He did not recall attempting to switch fuel tanks during the restart attempts on the accident flight. The pilot had reported having 58 gallons of fuel on-board the airplane prior to the accident flight. He did not remember the exact fuel loading but reported that he would typically have 2 to 5 gallons in each auxiliary tank with the remainder in the main tanks, balanced left to right.

Examination of the airplane after the accident revealed that neither propeller was in the feathered position. The dome pressure on each propeller was measured. The left propeller dome pressure was about 50 psi, but no dome pressure was able to be measured on the right propeller. Both propeller air fill valves had caps on them that were removed in order to check the charge pressure of the dome. According to Propeller manufacturer documentation, the dome charge for the installed propellers should have been 50 psi. Subsequent examination of the right propeller revealed that the air fill valve seal was contaminated by a small piece of debris. Once that debris was removed, the propeller dome was charged with air and was found to hold pressure. The examination also revealed that the propeller start locks were engaged which would prevent the propeller from feathering. Propeller manufacturers documentation stated that a low air charge could result in the propeller rpm control having little or no effect. According to the propeller manufacturer, the start lock should be set to engage when the engine rpm drops below a range of 700 to 900 rpm. Additionally, the manufacturer indicated that the propeller would still be able to feather normally if the propeller dome was not charged provided there was sufficient rpm to prevent premature engagement of the start locks.

Examination of the left engine was conducted after removal from the accident scene. The engine could be rotated by hand and compression and suction were verified on all cylinders during rotation. During rotation, spark was observed on all magneto leads. A differential compression test was then performed with readings above 65/80 observed on all cylinders except for the number 2 cylinder which measured 50/80. The number 2 cylinder was removed and examined with no defects noted. Notable is the fact that the differential compression test was performed on a cold engine that had not been operated for several months by the time the test was performed. Magneto timing was checked and found to be within specifications. The fuel control unit was removed and retained for further testing. Testing of the fuel control unit on a test flow bench at a certified repair station revealed that all measurements were within service limits.

The right engine was examined and could be rotated by hand. Suction and compression was verified on all cylinders during rotation. During rotation, spark was observed on all magneto leads. A differential compression test was performed with all cylinders exhibiting compression readings exceeding 65/80. Magneto timing was checked and found to be within specifications. The fuel control unit was removed and retained for further testing. Testing of the fuel control unit on a test flow bench at a certified repair station revealed that all measurements were within service limits.

The airplane's fuel system was examined. Compressed air was used to blow through the fuel lines with a catch bottle used to recover any expelled fuel or contaminants. The fuel recovered was a pale blue color consistent with 100LL aviation gasoline, and no contaminants were noted. The operation of the fuel selector valves was confirmed during testing and no anomalies in operation were noted. The fuel strainer bowls were removed and were found free of debris.

Pilot Information

Certificate:	Airline transport	**Age:**	73
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	January 6, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	4410 hours (Total, all aircraft), 3796 hours (Total, this make and model), 4246 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7768Y
Model/Series:	PA 30 NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	1965	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	30-854
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 7, 2015 Annual	**Certified Max Gross Wt.:**	2381 lbs
Time Since Last Inspection:	0 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	5867 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-320-B1A
Registered Owner:	On file	**Rated Power:**	160 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:	ACT,516 ft msl	**Distance from Accident Site:**	21 Nautical Miles
Observation Time:	19:51 Local	**Direction from Accident Site:**	135°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.9 inches Hg	**Temperature/Dew Point:**	35°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Clifton, TX (7F7)	**Type of Flight Plan Filed:**	None
Destination:	SAN ANTONIO, TX (SAT)	**Type of Clearance:**	None
Departure Time:	15:20 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	CLIFTON MUNI/ISENHOWER FIELD 7F7	**Runway Surface Type:**	Asphalt
Airport Elevation:	760 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	14	**IFR Approach:**	None
Runway Length/Width:	3000 ft / 50 ft	**VFR Approach/Landing:**	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	31.817222,-97.569442

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Jesse Leos; FAA- North Texas FSDO; Irving, TX
Original Publish Date:	November 28, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=91775