Aviation Investigation Final Report

Location:	Fort Lauderdale, Florida	**Accident Number:**	NYC07LA183
Date & Time:	August 1, 2007, 20:00 Local	**Registration:**	N60801
Aircraft:	Piper Aerostar 601P	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

As the airplane turned onto final approach in the traffic pattern, at an altitude of 1,000 feet, the right engine began a violent vibration and started to lose power. The airplane was unable to maintain altitude, and the pilot attempted a forced landing to a road. As the airplane reached an altitude of approximately 300 feet, it began to lose directional control and impacted a traffic light. After touchdown, the airplane began to skid and impacted several objects on the ground before coming to rest. Metallurgical examination of the right engine revealed that it lost power due to a fatigue-fractured crankshaft. The pilot had positioned the right propeller control to feather, but the right propeller did not feather due to the fractured crankshaft. The engine was most recently overhauled 11 years prior to the accident, and the engine had accumulated 471 hours since then.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The total loss of power in one engine during approach, due to a fatigue fracture of the crankshaft.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings
1. 1 ENGINE - FAILURE
2. (C) ENGINE ASSEMBLY,CRANKSHAFT - FATIGUE

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: EMERGENCY LANDING

Occurrence #4: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING

Findings
3. OBJECT - TREE(S)

Factual Information

On August 1, 2007, at approximately 2000 eastern daylight time, a Piper Aerostar 601P, N60801, was substantially damaged during a forced landing to a road in Fort Lauderdale, Florida. The certificated commercial pilot and two passengers were not injured. Visual meteorological conditions prevailed and no flight plan was filed for the local flight, which departed from Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, Florida. The personal flight was conducted under 14 Code of Federal Regulations Part 91.

According to the pilot, after departing runway 26, he remained in the traffic pattern for a landing. As he turned the airplane onto the final approach, at an altitude of 1,000 feet mean sea level, the right engine began a violent vibration and started to lose power. The pilot stated he advanced the mixture, propeller, and throttle levers to the full forward position, and turned the fuel boost pump on. The right engine then completely lost power and the pilot placed the propeller lever in the feathered position. He advanced the left engine throttle to full power, retracted the landing gear and established the aircraft on final approach. The airplane was unable to maintain airspeed and altitude, and the pilot decided to perform a forced landing to a road parallel to runway 26. As the airplane reached an altitude of approximately 300 feet, it began to "lose directional control," and the pilot reduced power to the left engine. The airplane impacted a traffic light prior to landing on the road. After touchdown, the airplane began to skid to the right and impacted several objects before it came to rest, and a postcrash fire ensued.

Examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed the right engine cockpit controls were in the "aft position," (right propeller lever in feather position) and the right propeller was not feathered. Both wing fuel tanks were ruptured; however, evidence of fuel was present in both wings.

The right engine was disassembled, under the supervision of an FAA inspector. According to the FAA inspector, the engine crankshaft had sheared between the No. 2 and No. 3 main bearings. The engine camshaft had also sheared at the No. 5 cylinder.

The crankshaft and camshaft were sent to the National Transportation Safety Board's Materials Laboratory. Examination of the components revealed fatigue propagation over the majority of the crankshaft fracture surface. The camshaft sustained impact damage and was completely fractured in overstress bending and torsion.

Examination of the aircraft and engine logbooks revealed the most recent 100-hour inspection was completed on January 16, 2007. The most recent overhaul of the right engine was completed in July 1996, after a propeller strike incident. During the overhaul, the cylinders were "cermichrome" processed, repaired and certified. The crankshaft was "inspected and certified,"

and the crankcase was "repaired and certified." Since the overhaul, 11 years prior to the accident, the engine accumulated 471 hours.

Weather reported at FXE, at 1953, included wind from 240 degrees at 3 knots, 10 miles visibility, scattered clouds at 2,500 feet, overcast clouds at 15,000 feet, temperature 27 degrees Celsius (C), dew point 23 degrees C, and barometric pressure setting of 29.90 inches mercury.

Pilot Information

Certificate:	Commercial	**Age:**	24,Male
Airplane Rating(s):	Single-engine land; Multi-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 1 Without waivers/limitations	**Last FAA Medical Exam:**	December 1, 2006
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1950 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N60801
Model/Series:	Aerostar 601P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	61P07448063366
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	January 1, 2007 100 hour	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	2514 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-540
Registered Owner:	Gerald Tillman	**Rated Power:**	300 Lbs thrust
Operator:	Austin Brennen	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	FXE,13 ft msl	**Distance from Accident Site:**	
Observation Time:	19:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 2500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 15000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.89 inches Hg	**Temperature/Dew Point:**	27°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Fort Lauderdale, FL (FXE)	**Type of Flight Plan Filed:**	None
Destination:	(FXE)	**Type of Clearance:**	None
Departure Time:	19:55 Local	**Type of Airspace:**	

Airport Information

Airport:	Fort Lauderdale Executive FXE	**Runway Surface Type:**	Asphalt
Airport Elevation:	13 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	26	**IFR Approach:**	None
Runway Length/Width:	6001 ft / 100 ft	**VFR Approach/Landing:**	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	26.197221,-80.170555

Administrative Information

Investigator In Charge (IIC):	Andrews, Jill
Additional Participating Persons:	Carlton Kitchen; FAA/FSDO; Fort Lauderdale, FL
Original Publish Date:	July 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=66384