



National Transportation Safety Board Aviation Accident Data Summary

Location:	Hammonton, NJ	Accident Number:	NYC07LA001
Date & Time:	10/03/2006, 1230 EDT	Registration:	N5097P
Aircraft:	Piper PA-24-250	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The airplane was on a base leg to the airport when the engine lost power, and the pilot performed a forced landing to a swampy area short of the runway. A subsequent examination of the engine revealed that within the accessory section, the idler gear assembly, which normally transferred power from the crankshaft to the left magneto and the camshaft, had been displaced. The mounting shaft had also been displaced, and the shaft hole was elongated. The upper portions of both shaft mounting plate retaining screws were missing. The lower screw appeared to be sheared, while the remnant of the upper screw exhibited mechanical damage. The crankcase surface area around the upper screw hole exhibited fretting, and the idler gear had missing and damaged gear teeth. Remnants of the shaft mounting plate retaining screws and screw lockplate were found in the bottom of the crankcase. The engine operating time was below the recommended time between overhaul (TBO). However, the manufacturer also recommended an overhaul if the TBO was not reached within the previous 12 years, and the accident engine had not been overhauled in over 30 years. The failure sequence could not be determined, and although an excessive amount of time had passed since the previous overhaul, the lack of an overhaul could not be correlated to the displacement of the idler gear assembly.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Displacement of the idler gear assembly, which resulted in a loss of camshaft timing, and a subsequent engine failure. Contributing to the accident was the swampy terrain condition.

Findings

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

Findings

1. (C) ACCESSORY DRIVE ASSY,DRIVE GEAR - SHIFTED
2. ENGINE ASSEMBLY,CAMSHAFT - TIMING IMPROPER

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - EMERGENCY

Findings

3. (F) TERRAIN CONDITION - SWAMPY

Pilot Information

Certificate:	Private	Age:	73
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	Instrument Airplane
Flight Time:	1050 hours (Total, all aircraft), 230 hours (Total, this make and model), 3 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Piper	Registration:	N5097P
Model/Series:	PA-24-250	Engines:	1 Reciprocating
Operator:	Frank L. Greiner	Engine Manufacturer:	Lycoming
Air Carrier Operating Certificate:	None	Engine Model/Series:	O-540A1A
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	ACY, 75 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	None
Condition of Light:	Day	Wind Speed/Gusts, Direction:	9 knots, 210°
Temperature:	27° C / 12° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cross Keys, NJ (17N)	Destination:	Hammonton, NJ (N81)

Airport Information

Airport:	Hammonton Muni (N81)	Runway Surface Type:	Asphalt
Runway Used:	23	Runway Surface Condition:	Dry
Runway Length/Width:	3600 ft / 75 ft		

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None

Administrative Information

Investigator In Charge (IIC): Paul R Cox

Adopted Date: 04/30/2008

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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