



National Transportation Safety Board Aviation Accident Final Report

Location:	WILKES-BARRE, PA	Accident Number:	NYC94LA039
Date & Time:	12/15/1993, 1745 EST	Registration:	N92GP
Aircraft:	PIPER PA-46	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

WHILE CRUISING AT FL 240, THE PILOT OBSERVED THE ENGINE OIL PRESSURE GRADUALLY DECREASE FROM THE NORMAL TO THE CAUTION RANGE AND A DROP IN MANIFOLD PRESSURE. HE REQUESTED AND RECEIVED VECTORS FOR A PRECAUTIONARY LANDING AT AN AIRPORT SHORT OF HIS DESTINATION. DURING THE DESCENT, THE OIL PRESSURE CONTINUED TO DROP TO ZERO AND ENGINE POWER WAS LOST. HE WAS ABLE TO LOCATE THE AIRPORT UNDERNEATH THE OVERCAST, BUT LOSS OF ENGINE POWER PREVENTED HIM FROM REACHING THE RUNWAY. THE AIRPLANE IMPACTED TREES 1200 FEET FROM THE AIRPORT. THE 6 ENGINE CYLINDER ASSEMBLIES WERE CHANGED 7 HOURS PRIOR TO THE ACCIDENT. EXAMINATION OF THE ENGINE AND TURBOCHARGERS DID NOT REVEAL THE SOURCE OF THE OIL LOSS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: was the loss of engine oil for undetermined reasons and the subsequent engine failure, resulting in a forced landing and collision with trees.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: CRUISE

Findings

1. (C) FLUID,OIL - LOSS,TOTAL
2. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: DESCENT - EMERGENCY

Findings

3. (C) OBJECT - TREE(S)

Factual Information

On Wednesday, December 15, 1993, at 1745 eastern standard time, a Piper PA-46, N92GP, registered to and piloted by John F. Burton, was destroyed during a forced landing near Wilkes-Barre, Pennsylvania. The pilot was not injured. Visual meteorological conditions prevailed, and an IFR flight plan was filed. The flight was being conducted under 14 CFR Part 91.

The airplane departed Bedford, Massachusetts, destined for Leesburg, Virginia. While cruising at 24,000 feet, the pilot observed a decrease in engine oil pressure, followed by a decrease in manifold pressure. He requested Air Route Traffic Control to provide vectors to land at the Wilkes-Barre/Scranton International Airport. During the descent, the available engine power continued to decrease.

An overcast cloud condition existed at the airport, but the pilot was able to visually locate the runway and maneuver for a landing. While attempting to land on runway 22, the continued loss of engine power prevented the pilot from completing the landing, and the airplane impacted trees approximately 1/4 mile east of the airport.

On January 11, 1994, the engine was examined at the Textron Lycoming Aircraft Engine facility, Williamsport, Pennsylvania, under the supervision of the Safety Board Investigator-In-Charge. During this examination, the following observations were noted:

- * The engine could not be rotated.
- * There were two holes in the top of the crankcase. One was near the No.1 cylinder exhaust cam lobe. The other was near the No. 2 cylinder exhaust cam lobe.
- * There were other cracks/bulges near the No. 5 cylinder exhaust lobe, and the bottom of the crankcase near No. 1 and 2 cylinders.
- * The No. 2 cylinder oil return line was not secured by the adjustable clamp to the hex fitting. The hose was on the fitting, but the clamp was not holding it.
- * The oil sump and the oil suction screen contained metal debris.
- * The No. 5 cylinder connecting rod was fractured. Pieces of connecting rod and bearing were found in the oil sump.
- * The exhaust tappets for cylinders No.'s 1, 2, 3 and 4, and the No. 4 intake tappet were fractured.

The Textron Lycoming report stated:

From the evidence...it appears that the No. 5 connecting rod bearing deteriorated as a result of a lubrication interruption which resulted in the No. 5 connecting rod failure. The heat discolorization observed on both the connecting rod and crankcase journal in addition to the surface smearing and deformation would be consistent with a lubrication interruption type of failure. Fragments of the broken connecting rod migrated throughout the engine colliding with rotating and reciprocating components creating additional debris. This migration and collision of debris resulted in the engine sustaining extensive damage.

The two turbochargers and the turbocharger wastegate were examined at the Allied Signal

facility in Torrence, California, on February 3, 1994, under the supervision of investigators from the National Transportation Safety Board. A report of this examination prepared by Allied Signal stated:

The teardown and examination of both turbochargers revealed...that either/or both had been operated at an elevated operating temperature and/or with little or no oil due to the damage observed to the bearings....

- * The wastegate was functional with no oil leaks.

- * All seals in the turbochargers and the wastegate were functional. There were no indications of any leakage that would cause a complete loss of engine oil.

On December 7, 1993, when the engine had a total of 200 hours, 6 new cylinder assemblies were installed in the engine, including pistons, rings, valves and springs. The engine failure occurred approximately 7 hours after this installation.

Pilot Information

Certificate:	Private	Age:	42, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	11/12/1993
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	675 hours (Total, all aircraft), 175 hours (Total, this make and model), 575 hours (Pilot In Command, all aircraft), 34 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N92GP
Model/Series:	PA-46 PA-46	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	4622120
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	12/07/1993, Annual	Certified Max Gross Wt.:	4318 lbs
Time Since Last Inspection:	7 Hours	Engines:	1 Reciprocating
Airframe Total Time:	206 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	TIO-540-AE2A
Registered Owner:	JOHN F. BURTON	Rated Power:	350 hp
Operator:	JOHN F. BURTON	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	AVP, 962 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1750 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	Overcast / 2400 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	50°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	7° C / 4° C
Precipitation and Obscuration:			
Departure Point:	BEDFORD, MA (BED)	Type of Flight Plan Filed:	IFR
Destination:	LEESBURG, VA (JYO)	Type of Clearance:	IFR
Departure Time:	1635 EST	Type of Airspace:	Class D

Airport Information

Airport:	WILKES-BARRE/SCRANTON (AVP)	Runway Surface Type:	
Airport Elevation:	962 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	CHARLES F LEONARD	Report Date:	10/20/1994
Additional Participating Persons:	RAYMOND L KUBA; ALLENTOWN, PA JAMES F BROWN; WILLIAMSPORT, PA STEVEN G MACON; PHOENIX, AZ DAVID E CONOVER; BALTIMORE, MD		
Publish Date:			
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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