



National Transportation Safety Board Aviation Incident Final Report

Location:	FAIRBANKS, AK	Incident Number:	ANC921A001
Date & Time:	10/02/1991, 1320 AKD	Registration:	N200AK
Aircraft:	PIPER PA-31-350	Aircraft Damage:	Minor
Defining Event:		Injuries:	5 None

Flight Conducted Under: Part 135: Air Taxi & Commuter - Scheduled

Analysis

DURING CRUISE FLIGHT, THE LEFT ENGINE LOST POWER AND OIL PRESSURE. AN ENGINE TEARDOWN ANALYSIS SHOWED THAT THE CRANKSHAFT COUNTERWEIGHTS HAD TWO INCORRECT OF THE FOUR INSTALLED ROLLERS. ALL FOUR ROLLERS WERE PART NO. 73648. ACCORDING TO TEXTRON LYCOMING, THE CORRECT ROLLER CONFIGURATION SHOULD HAVE BEEN 'TWO PART NO. 73648 5.1 ORDER AND TWO PART NO. 76788 6.3 ORDER ROLLERS.' AS CONFIGURED, THE ENGINE WOULD EXPERIENCE UNACCEPTABLE 6TH ORDER TORSIONAL VIBRATIONS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: INCORRECT INSTALLATION OF CRANKSHAFT COUNTERWEIGHT ROLLERS BY THE MANUFACTURER DURING REMANUFACTURE OF THE ENGINE. FACTOR WAS THE INADEQUATE SURVEILLANCE OF THE ENGINE ASSEMBLY PROCESS BY THE MANUFACTURER.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: CRUISE

Findings

1. (C) ENG ASSEMBLY, CRANKSHAFT COUNTERWEIGHTS/VIB DAMPER - IMPROPER
2. (C) MAINTENANCE, REBUILD/REMANUFACTURE - IMPROPER - MANUFACTURER
3. (F) INADEQUATE SURVEILLANCE OF OPERATION - MANUFACTURER

Factual Information

Pilot Information

Certificate:	Airline Transport; Private	Age:	35, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	08/30/1991
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	8000 hours (Total, all aircraft), 6000 hours (Total, this make and model), 7800 hours (Pilot In Command, all aircraft), 300 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N200AK
Model/Series:	PA-31-350 PA-31-350	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	31-8052180
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	09/27/1991, AAIP	Certified Max Gross Wt.:	7000 lbs
Time Since Last Inspection:	26 Hours	Engines:	2 Reciprocating
Airframe Total Time:	1763 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	TIO-540J2BD
Registered Owner:	FRONTIER FLYING SERVICE INC.	Rated Power:	350 hp
Operator:	FRONTIER FLYING SERVICE INC.	Operating Certificate(s) Held:	Commuter Air Carrier (135)
Operator Does Business As:		Operator Designator Code:	FFSA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	99 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	4° C
Precipitation and Obscuration:			
Departure Point:	FAIRBANKS, AK (FAI)	Type of Flight Plan Filed:	VFR
Destination:	COLDFOOT, AK (CXF)	Type of Clearance:	None
Departure Time:	1315 ADT	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	N/A
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Precautionary Landing; Straight-in

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Minor
Passenger Injuries:	4 None	Aircraft Fire:	In-Flight
Ground Injuries:	N/A	Aircraft Explosion:	In-Flight
Total Injuries:	5 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	GEORGE KOBELNYK	Report Date:	05/05/1993
Additional Participating Persons:	CHARLIE ADAMS; FAIRBANKS, AK THOMAS DUDDY; WILLIAMSPORT, PA ASI JAMES GAMBELL; FAIRBANKS, AK		
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 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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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).