



National Transportation Safety Board Aviation Accident Final Report

Location:	ONTARIO, CA	Accident Number:	LAX89FA314
Date & Time:	09/15/1989, 0652 PDT	Registration:	N70PE
Aircraft:	PIPER PA-31-350	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

THE PROPELLER SEPARATED FROM THE RIGHT ENGINE DURING THE INITIAL CLIMB. EXAMINATION OF THE WRECKAGE REVEALED THE PROPELLER HUB FRACTURE RESULTED IN ONE OF THE THREE PROPELLER BLADES DETACHING FROM THE HUB. THE REST OF THE PROPELLER HUB THEN SEPARATED STRIKING THE RIGHT FRONT OF THE FUSELAGE. OIL WAS SPREAD ACROSS THE AIRCRAFT NOSE AND WINDSHEILD. THE FUSELAGE RIGHT SIDE DAMAGE INCREASED AERODYNAMIC DRAG. WITNESSES REPORTED THE ENGINE COWLING WAS TORN. THE AIRCRAFT ENTERED A RIGHT TURN AND DIVE. IT IMPACTED THE GROUND IN A NEAR INVERTED ATTITUDE. METALLURGICAL EXAMINATION OF THE FAILED PROP HUB REVEALED METAL FATIGUE EMANATING FROM THE THREADED HOLE FOR THE GREASE FITTING. THE THREADS HAD BEEN DEFORMED BY SHOT PEENING, RESULTING IN INCREASED STRESS CONCENTRATIONS AT THE THREADS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE RIGHT PROPELLER HUB DUE TO METAL FATIGUE WHICH RESULTED IN CATASTROPHIC SEPARATION OF THE PROPELLER. CONTRIBUTING TO THE ACCIDENT WAS DAMAGE DONE TO THE AIRCRAFT AIRFRAME IN FLIGHT BY THE SEPARATING PROPELLER MAKING THE AIRCRAFT UNCONTROLLABLE.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) PROPELLER SYSTEM/ACCESSORIES,HUB - FATIGUE
 2. (C) PROPELLER SYSTEM/ACCESSORIES,HUB - FRACTURED
 3. (F) PROPELLER SYSTEM/ACCESSORIES - SEPARATION
 4. MAINTENANCE,OVERHAUL - IMPROPER - OTHER MAINTENANCE PERSONNEL
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Occurrence #2: ALTITUDE DEVIATION,UNCONTROLLED
Phase of Operation: DESCENT - EMERGENCY

Findings

5. REMEDIAL ACTION - ATTEMPTED - PILOT IN COMMAND
 6. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND
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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	24
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	03/16/1989
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	1916 hours (Total, all aircraft), 89 hours (Last 90 days, all aircraft), 49 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N70PE
Model/Series:	PA-31-350 PA-31-350	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31-805 2137
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	08/22/1989, AAIP	Certified Max Gross Wt.:	7000 lbs
Time Since Last Inspection:	39 Hours	Engines:	2 Reciprocating
Airframe Total Time:	3118 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TIO-540-J2BD
Registered Owner:	JACK WALL AIRCRAFT SALES INC.	Rated Power:	350 hp
Operator:	AMERIFLIGHT	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	JIKA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ONT, 943 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	0650 PDT	Direction from Accident Site:	142°
Lowest Cloud Condition:	Scattered / 200 ft agl	Visibility	7 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	21° C / 7° C
Precipitation and Obscuration:			
Departure Point:	ONTARIO, CA (ONT)	Type of Flight Plan Filed:	VFR
Destination:	SANTA BARBARA, CA (SBA)	Type of Clearance:	VFR
Departure Time:	0650 PDT	Type of Airspace:	Class D

Airport Information

Airport:	ONTARIO INTL (ONT)	Runway Surface Type:	
Airport Elevation:	943 ft	Runway Surface Condition:	
Runway Used:	0R	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	THOMAS H WILCOX	Report Date:	09/09/1992
Additional Participating Persons:	JAMES R GREEN; RIVERSIDE, CA		
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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