



National Transportation Safety Board Aviation Accident Final Report

Location:	KENAI, AK	Accident Number:	DCA88MA011
Date & Time:	12/23/1987, 0611 AST	Registration:	N496SC
Aircraft:	PIPER PA-31-350	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	6 Fatal, 2 Serious, 2 Minor

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

Analysis

THE PILOT HAD JUST DEPARTED THE RUNWAY WHEN HE REPORTED TO THE FLIGHT SERVICE STATION THAT HE HAD ENGINE PROBLEMS. THE AIRCRAFT WAS OBSERVED BY WITNESSES TO BE ABOUT 300 FT ON A DESCENDING DOWNWIND. THE PILOT STATED THAT HE WAS CIRCLING FOR RUNWAY ONE. SURVIVING PASSENGERS DESCRIBED THE ENGINES AS RUNNING ROUGH AND UNEVEN. THE INVESTIGATION REVEALED THAT THE AIRCRAFT'S WEIGHT WAS MORE THAN THE PILOT HAD CALCULATED AND THE C.G. WAS 3.4 INCHES FURTHER AFT THAN WAS CALCULATED. HOWEVER, THE WEIGHT AND C.G. WERE WITHIN LIMITS. EXAMINATION OF THE ENGINE DISCLOSED THAT THE RIGHT ENGINE HAD AN EXTENSIVE CYLINDER HEAD CRACK, A PARTIALLY DISCONNECTED INTAKE PIPE, AND WAS CAPABLE OF PRODUCING 55% OF RATED POWER. THE LEFT ENGINE HAD SEVEN SEVERLY WORN CAM LOBES. THE RUDDER TRIM WAS DEFLECTED FULL LEFT AT IMPACT. THE EVIDENCE INDICATED THAT THE PILOT HAD RETARDED THE THROTTLE FOR THE LEFT ENGINE AND WAS USING ONLY THE RIGHT ENGINE TO SUSTAIN FLIGHT. EXAM OF COMPANY CHECKLIST USAGE REVEALED SEVERAL DIFFERENT IMPROPER VERSIONS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF

Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. 1 ENGINE - FAILURE,PARTIAL
 2. (C) ENGINE ASSEMBLY,CYLINDER - FAILURE,TOTAL
 3. (C) ENGINE ASSEMBLY,CYLINDER - FATIGUE
 4. (F) INDUCTION AIR CONTROL,INTAKE MANIFOLD - SEPARATION
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Occurrence #2: LOSS OF ENGINE POWER

Phase of Operation: MANEUVERING

Findings

5. (F) 1 ENGINE - FAILURE,PARTIAL
 6. (F) ENGINE ASSEMBLY,CAMSHAFT - WORN
 7. (F) MAINTENANCE,100-HOUR INSPECTION - INADEQUATE - COMPANY MAINTENANCE PERSONNEL
 8. (C) EMERGENCY PROCEDURE - IMPROPER - PILOT IN COMMAND
 9. (C) THROTTLE/POWER CONTROL - IMPROPER USE OF - PILOT IN COMMAND
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Occurrence #3: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - EMERGENCY

Findings

10. (F) TRIM SETTING - IMPROPER - PILOT IN COMMAND
11. LOWERING OF FLAPS - PERFORMED
12. OBJECT - TREE(S)
13. OBJECT - RESIDENCE

Factual Information

Pilot Information

Certificate:	Airline Transport	Age:	54, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	08/20/1987
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	14500 hours (Total, all aircraft), 11600 hours (Pilot In Command, all aircraft), 86 hours (Last 90 days, all aircraft), 62 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N496SC
Model/Series:	PA-31-350 PA-31-350	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31.7752077
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	12/16/1987, AAIP	Certified Max Gross Wt.:	7000 lbs
Time Since Last Inspection:	45 Hours	Engines:	2 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	TIO-540
Registered Owner:	SOUTH CENTRAL AIR, INC.	Rated Power:	350 hp
Operator:	SOUTH CENTRAL AIR, INC.	Operating Certificate(s) Held:	Commuter Air Carrier (135); On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	XE

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	ENA, 92 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	0600 AST	Direction from Accident Site:	70°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	7 Miles
Lowest Ceiling:	Overcast / 1500 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	20°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	1° C / -2° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	IFR
Destination:	ANCHORAGE, AK (ANC)	Type of Clearance:	IFR
Departure Time:	0000	Type of Airspace:	Class D; Class E

Airport Information

Airport:	KENAI MUNI (EMA)	Runway Surface Type:	Asphalt
Airport Elevation:	92 ft	Runway Surface Condition:	Ice
Runway Used:	1	IFR Approach:	None
Runway Length/Width:	7600 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	5 Fatal, 2 Serious	Aircraft Fire:	On-Ground
Ground Injuries:	2 Minor	Aircraft Explosion:	On-Ground
Total Injuries:	6 Fatal, 2 Serious, 2 Minor	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	THOMAS HAUETER	Report Date:	08/02/1989
Additional Participating Persons:	KEN JONES; WILLIAMSPORT, PA RODGER STILLKAMP; PIQUA, OH		
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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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](#).