



# Aviation Investigation Final Report

<b>Location:</b>	MOSQUITO FLATS, Alaska	<b>Accident Number:</b>	ANC94LA097
<b>Date &amp; Time:</b>	August 5, 1994, 14:50 Local	<b>Registration:</b>	N5200X
<b>Aircraft:</b>	CESSNA 206	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 135: Air taxi & commuter - Non-scheduled		

## Analysis

THE ENGINE OIL PRESSURE BEGAN TO DROP AND THE TEMPERATURE BEGAN TO RISE. BEFORE THE PILOT COULD RETURN TO TOK, ALASKA, THE ENGINE STOPPED PRODUCING POWER AND WOULD NOT WINDMILL. THE ENGINE DISASSEMBLY SHOWED THAT THE NUMBER 6 CYLINDER PISTON PIN CAP WAS MISSING AND THAT THE NUMBER 6 CYLINDER CONNECTING ROD CAP WAS FRACTURED INTO THREE MAJOR PIECES. ALL BEARING SURFACES SHOWED SIGNS OF HEAT DAMAGE. THE AIRPLANE WAS FORCED TO LAND ON MUSKEG AND NOSED OVER DURING THE LANDING ROLL.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE MISSING NUMBER 6 CYLINDER PISTON PIN CAP AND THE SUBSEQUENT FAILURE OF THE NUMBER 6 CYLINDER CONNECTING ROD CAP. ALSO, THE LACK OF SUITABLE LANDING AREA FOR THE FORCED LANDING.

## Findings

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

### Findings

1. (C) ENGINE ASSEMBLY,OTHER - MISSING
2. (C) ENGINE ASSEMBLY,CONNECTING ROD CAP - FAILURE,TOTAL

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

Occurrence #3: NOSE OVER  
Phase of Operation: LANDING - ROLL

Findings

3. (C) TERRAIN CONDITION - NONE SUITABLE

## Factual Information

On August 5, 1994 at 1450 Alaska daylight time, a wheel equipped Cessna 206 airplane, N5200X, registered to and operated by 40 Mile Air LTD, of Tok, Alaska, experienced a rise in oil temperature, a drop in oil pressure, and a subsequent engine stoppage during cruise flight. The flight was forced to land on Mosquito Flats and nosed over during the landing roll. The air taxi flight, operating under 14 CFR Part 135, departed Tok for a local flight. Visual meteorological conditions prevailed and a company flight plan was in effect. The pilot and the passenger were not injured and the airplane received substantial damage.

According to the pilot, he saw a rise in oil temperature and a drop in oil pressure. He immediately reversed course to return to Tok. The engine stopped producing power before reaching the airport and he was forced to land on the muskeg.

Examination of the engine showed that the number 6 cylinder piston pin cap was missing. The number 6 connecting rod cap was found broken in three major pieces and numerous smaller pieces. According to John Lauer, Customer Service Representative for Superior Air Parts, the number on the piston pin identifies the pin as a German manufactured piston pin and the Service Bulletin, which recalls the Superior Air Parts Piston Pin number SA520046, does not apply to that installed piston pin.

Mr. Lauer stated that in the past, and as a result of his experiences, the reasons for piston pin failures could be misalignment, rod fit/pin fit in small end of rod bushing, a bent or twisted connecting rod, too much endplay (thrust washer), infrequent oil changes which would allow the pin to bind up, and wear in the bushing in the rod. The examination of the engine could not show which of these situations applied. Mr. Lauer stated that this event occurred in a relatively brief period of time, and that the metal introduced into the engine resulted in oil starvation.

## Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	28, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical—no waivers/lim.	<b>Last FAA Medical Exam:</b>	December 30, 1993
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1400 hours (Total, all aircraft), 210 hours (Total, this make and model), 1030 hours (Pilot In Command, all aircraft), 210 hours (Last 90 days, all aircraft), 80 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	CESSNA	<b>Registration:</b>	N5200X
<b>Model/Series:</b>	206 206	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	206005591
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	July 24, 1994 100 hour	<b>Certified Max Gross Wt.:</b>	3600 lbs
<b>Time Since Last Inspection:</b>	32 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	7597 Hrs	<b>Engine Manufacturer:</b>	CONTINENTAL
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	IO-520-F
<b>Registered Owner:</b>	40 MILE AIR LTD	<b>Rated Power:</b>	300 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	FMAA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	40 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 10°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	TOK , AK (TKJ)	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	14:10 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	63.17995,-143.10028(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Kobelnyk, George
<b>Additional Participating Persons:</b>	CLIFF SMART; FAIRBANKS , AK MIKE STOCKHILL; SEATTLE , WA
<b>Original Publish Date:</b>	May 9, 1995
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=2534">https://data.nts.gov/Docket?ProjectID=2534</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).