Aviation Investigation Final Report

Location:	MOSQUITO FLATS, Alaska	**Accident Number:**	ANC94LA097
Date & Time:	August 5, 1994, 14:50 Local	**Registration:**	N5200X
Aircraft:	CESSNA 206	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	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

Certificate:	Commercial; Flight instructor	**Age:**	28,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	December 30, 1993
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	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

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

Meteorological Information and Flight Plan

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

Airport Information

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

Wreckage and Impact Information

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

Administrative Information

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