Aviation Investigation Final Report

Location:	CORDOVA, Alaska	**Accident Number:**	ANC99LA114
Date & Time:	August 15, 1999, 13:00 Local	**Registration:**	N4605F
Aircraft:	Cessna 206A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

The commercial certificated pilot departed from his company's fishing lodge to begin a cross-country business flight. About 300 feet above the ground, the engine suddenly quit. The pilot switched fuel tanks, activated the engine boost pump, and began a turn into the wind. The engine did not restart. The pilot selected an open area of marsh for an emergency landing area. When the airplane touched down, the nose wheel separated from the nose wheel strut, and the airplane nosed down in the soft terrain. The airplane received damage to the engine, propeller, and the left wing. A postaccident examination of the engine by a mechanic found corrosion, and blockage of the vent hole of the engine manifold valve housing. The manifold valve is comprised of a fuel inlet, a diaphragm chamber, and outlet ports for fuel lines to each cylinder. The spring loaded diaphragm operates a valve in the central bore of the lower chamber of the valve body. Fuel pressure below the diaphragm opens the valve to allow fuel to flow to each cylinder. A spring above the diaphragm retains the valve in the closed position, absent any fuel pressure. The upper chamber of the valve housing, containing the spring, is vented to the atmosphere.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power due to corrosion/blockage of the fuel flow divider vent hole. A factor was unsuitable terrain for a forced landing.

Findings

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

Findings
1. (C) FUEL SYSTEM,FUEL FLOW DIVIDER/DISTRIBUTOR - CORRODED

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
2. (F) TERRAIN CONDITION - NONE SUITABLE

Occurrence #4: NOSE DOWN
Phase of Operation: EMERGENCY DESCENT/LANDING

Factual Information

On August 15, 1999, about 1300 Alaska daylight time, a tundra tire equipped Cessna 206A airplane, N4605F, sustained substantial damage during a forced landing in a remote area, about 85 miles east of Cordova, Alaska. The airplane was being operated as a visual flight rules (VFR) cross-country business flight under Title 14 CFR Part 91 when the accident occurred. The airplane was operated by Alaska Expedition Company, Cordova. The commercial certificated pilot, the sole occupant, was not injured. Visual meteorological conditions prevailed. The flight originated at the company's fishing lodge, about 2 minutes before the accident.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on August 15, 1999, the pilot reported he was returning to Cordova from his fishing lodge. About 300 feet above the ground, the engine suddenly quit. The pilot switched fuel tanks, activated the engine boost pump, and began a turn into the wind. The engine did not restart. The pilot said he selected an open area of marsh for an emergency landing area. When the airplane touched down, the nose wheel separated from the nose wheel strut, and the airplane nosed down in the soft terrain. The airplane received damage to the engine, propeller, and the left wing.

Following the accident, the airplane was ferried to Merrill Field, Anchorage, Alaska, by a mechanic/pilot from Ward's Aero, Anchorage. On September 8, 1999, the mechanic notified the NTSB IIC that he found corrosion, and blockage of the vent hole of the engine manifold valve housing. The manifold valve is comprised of a fuel inlet, a diaphragm chamber, and outlet ports for fuel lines to each cylinder. The spring loaded diaphragm operates a valve in the central bore of the lower chamber of the valve body. Fuel pressure below the diaphragm opens the valve to allow fuel to flow to each cylinder. A spring above the diaphragm retains the valve in the closed position, absent any fuel pressure. The upper chamber of the valve housing, containing the spring, is vented to the atmosphere.

The mechanic/pilot said that when he landed in Anchorage at the completion of the ferry flight, he pulled the throttle to idle during the flair. At that time, the engine quit running.

Pilot Information

Certificate:	Commercial	**Age:**	50,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 12, 1999
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1967 hours (Total, all aircraft), 1725 hours (Total, this make and model), 1934 hours (Pilot In Command, all aircraft), 43 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N4605F
Model/Series:	206A 206A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	P206-0205
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	March 26, 1999 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	35 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	7260 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	IO-520-F
Registered Owner:	CHARLES E. ALLEN	**Rated Power:**	300 Horsepower
Operator:	ALASKA EXPEDITION COMPANY	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

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:	Unknown	**Visibility**	3 miles
Lowest Ceiling:	Overcast / 600 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	20 knots / 35 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	135°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	10°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:	(PACV)	**Type of Clearance:**	None
Departure Time:	12:58 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:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	60.789859,-145.609848(est)

Administrative Information

Investigator In Charge (IIC):	Erickson, Scott
Additional Participating Persons:	DOUG VAUBEL (FAA); JUNEAU , AK
Original Publish Date:	January 18, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=47160