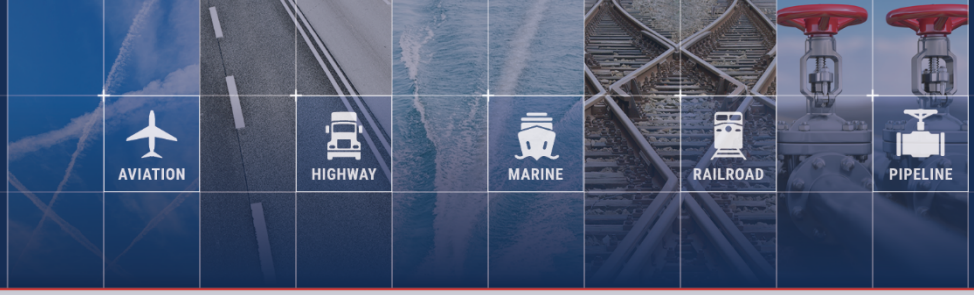

Aviation Investigation Final Report

Location:	Willow, Alaska	**Accident Number:**	ANC01TA087
Date & Time:	July 18, 2001, 14:30 Local	**Registration:**	N9262Z
Aircraft:	de Havilland DHC-2	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Public aircraft		

Analysis

The certificated airline transport pilot, with two passengers aboard, was conducting an aerial timber survey. While in cruise flight about 1,000 feet above the ground, the engine began to backfire, run rough, and lose power. The engine then quit, and the pilot selected a gravel bar along a glacial fed river as an emergency landing area. During the emergency approach to landing, the airplane landed short of the intended landing site, touched down in about 3 feet of water, and nosed over. After recovery, an FAA airworthiness inspector examined the airplane. The inspector reported that the number seven cylinder was cracked, the number nine cylinder had no compression, and that about one cup of clear water was found within the carburetor float bowl. The inspector said that he was unable to determine if the cylinder damage, or the presence of water in the carburetor was a result of impact damage with the river water. When the engine was disassembled the number nine cylinder head was found separated from the cylinder barrel.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power during cruise due to the separation of an engine cylinder.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings
1. (C) ENGINE ASSEMBLY,CYLINDER - SEPARATION

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

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

Factual Information

On July 18, 2001, about 1430 Alaska daylight time, a wheel-equipped de Havilland DHC-2 airplane, N9262Z, sustained substantial damage during a forced landing, about 3 miles west of Willow, Alaska. The airplane was being operated as a visual flight rules (VFR) cross-country government flight under Title 14, CFR Part 91, when the accident occurred. The airplane was owned by the USDA Forest Service, and operated by the State of Alaska, Department of Natural Resources, Forestry Division. The certificated airline transport pilot and the two passengers aboard were not injured. Visual meteorological conditions prevailed, and VFR flight following procedures were in effect. The flight originated at the Lake Hood Airstrip, Anchorage, Alaska, about 1230.

During a telephone conversation with the National Transportation Safety Board investigator-in-charge on July 19, the pilot reported he was conducting an aerial timber survey. While in cruise flight about 1,000 feet above the ground, the pilot said the engine began to backfire, run rough, and lose power. He said he activated the engine wobble pump fuel pump, and switched fuel tanks, even though each fuel tank contained adequate fuel. The engine then quit, and the pilot said he selected a gravel bar along a glacial fed river as an emergency landing area. He said that during the emergency approach to landing, the airplane landed short of the intended landing site, touched down in about 3 feet of water, and nosed over. The airplane sustained substantial damage to the wings and vertical stabilizer.

After the airplane was recovered, a Federal Aviation Administration (FAA) airworthiness inspector from the Anchorage Flight Standards District Office (FSDO), examined the airplane in Palmer, Alaska, on July 19. The inspector reported that the number seven cylinder was cracked, the number nine cylinder had no compression, and that about one cup of clear water was found within the carburetor float bowl. The inspector reported that he was unable to determine if the cylinder damage, or the presence of water in the carburetor was a result of postimpact damage with the river water. The engine was sent to Tulsa Aircraft Engines, Inc., Tulsa, Oklahoma, for inspection and repairs.

In a letter dated October 29, 2001, a representative from Tulsa Aircraft Engines, Inc., reported that when the engine was disassembled, the number nine cylinder head was found separated from the cylinder barrel.

Pilot Information

Certificate:	Airline transport	**Age:**	46,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; 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 multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	May 3, 2001
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	June 26, 2001
Flight Time:	20000 hours (Total, all aircraft), 35 hours (Total, this make and model), 16000 hours (Pilot In Command, all aircraft), 75 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	de Havilland	**Registration:**	N9262Z
Model/Series:	DHC-2	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1266
Landing Gear Type:	Tailwheel	**Seats:**	6
Date/Type of Last Inspection:	July 2, 2001 100 hour	**Certified Max Gross Wt.:**	5300 lbs
Time Since Last Inspection:	12.4 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	9549.5 Hrs at time of accident	**Engine Manufacturer:**	P&W
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	R-985-14B
Registered Owner:	USDA Forest Service	**Rated Power:**	450 Horsepower
Operator:	State of Alaska Dept. of Natural Resources	**Operating Certificate(s) Held:**	None
Operator Does Business As:	Division of Forestry	**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:	Clear	**Visibility**	90 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lake Hood Strip, AK (Z41)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Lake Hood Strip, AK (Z41)	**Type of Clearance:**	None
Departure Time:	12:30 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	61.757499,-150.05278

Administrative Information

Investigator In Charge (IIC):	Johnson, Clinton
Additional Participating Persons:	Ted J Novotney ; Federal Aviation Administration ; Anchorage , AK
Original Publish Date:	July 2, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52770