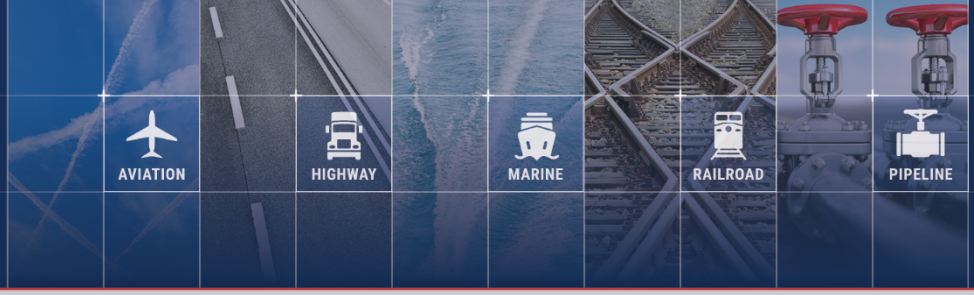

Aviation Investigation Final Report

Location:	North Pole, Alaska	**Accident Number:**	ANC05LA006
Date & Time:	October 13, 2004, 18:05 Local	**Registration:**	N92469
Aircraft:	Piper J-3	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The commercial certificated flight instructor was giving flight instruction for a tailwheel endorsement to the commercial certificated airplane owner. Shortly after takeoff from the private airstrip, the airplane lost all engine power. The flight instructor assumed control of the airplane, and made a forced landing into adjacent trees. The airplane received structural damage to both wings and the rudder. Postaccident inspection of the airplane by an FAA airworthiness inspector disclosed that the airplane had completed an annual inspection about 9 flight hours prior to the accident flight. The inspector discovered that an incorrect size carburetor had been installed by the mechanic who did the annual inspection, and that the center fuel tank had corrosion and rust contamination, and was missing its outlet fuel screen. The inspector disassembled the fuel gascolator screen, and discovered it was clogged with foreign debris. After the gascolator was cleaned, the inspector reported that "the engine started and ran fine."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An inadequate annual inspection by other maintenance personnel, which resulted in a loss of engine power during takeoff-initial climb, and subsequent collision with trees during the ensuing emergency landing. Factors associated with the accident are a contaminated fuel system, a missing fuel screen, and a clogged fuel gascolator.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (F) FUEL SYSTEM - CONTAMINATION,OTHER THAN WATER
2. (F) FUEL SYSTEM,SCREEN - MISSING
3. (F) FUEL SYSTEM,GASCOLATOR - FOREIGN MATERIAL/SUBSTANCE
4. FUEL SYSTEM,GASCOLATOR - FLOW RESTRICTED
5. FUEL SYSTEM,CARBURETOR - INCORRECT
6. (C) MAINTENANCE,100-HOUR INSPECTION - INADEQUATE - OTHER MAINTENANCE PERSONNEL

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings
7. OBJECT - TREE(S)

Factual Information

On October 13, 2004, about 1805 Alaska daylight time, a wheel equipped Piper J-3 airplane, N92469, received substantial damage when it collided with trees following a loss of engine power during the initial climb after takeoff from Wright Field, a private airstrip at North Pole, Alaska. The certificated flight instructor and the commercial pilot were not injured. The local instructional flight was operated under Title 14, CFR Part 91, by the airplane owner/commercial pilot. Visual meteorological conditions prevailed, and no flight plan was in effect.

During a telephone conversation with the NTSB investigator-in-charge (IIC) on October 14, the flight instructor related that he was giving instruction to the commercial pilot for a tailwheel endorsement. He related that he had observed the commercial pilot preflight the airplane, which included a check of the center fuel tank for water. He said they started the engine, warmed it up, and taxied to the opposite end of the field where a complete run-up was accomplished, and no anomalies noted. During the ensuing takeoff to the south, the instructor reported the commercial pilot allowed the airplane to drift slightly to the right, over the adjacent trees. About 200 feet above the ground (agl), he said the engine suddenly stopped running. Emergency procedures failed to restart the engine, and the instructor turned the airplane to the left, towards the runway. He was unable to complete the 180 degree turn without risk of stalling the airplane, and he elected to fly into the trees alongside the runway. The airplane received damage to the wings and fuselage during the collision.

An FAA inspector from the Fairbanks Flight Standards District Office traveled to the site on October 13 and 14, and interviewed both pilots and inspected the airplane. During an inspection of the engine's fuel system, he discovered that the fuel gascolator was contaminated with rust-like particulate matter and other foreign debris, effectively clogging the fuel outlet screen to the engine, and depriving the engine of fuel. He cleaned the gascolator screen, and the engine "started and ran fine." The inspector noted that the interior of the nose (center) fuel tank had some internal corrosion and debris, and that it was missing its outlet fuel screen. He also discovered that the engine was a C-90 Continental, but that a C-85 carburetor was installed. According to the inspector, the airplane was operating on aviation 100 octane low-lead fuel, and had undergone an annual inspection October 1, 2004, about nine flight hours prior to the accident. He reported that the aviation mechanic who conducted the annual inspection had also installed the incorrect size carburetor (C-85).

Flight instructor Information

Certificate:	Commercial; Flight instructor; Military	**Age:**	43,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	May 8, 2003
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 9, 2003
Flight Time:	7000 hours (Total, all aircraft), 200 hours (Total, this make and model), 100 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Commercial; Military	**Age:**	33,Female
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	April 16, 2002
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	1600 hours (Total, all aircraft), 740 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N92469
Model/Series:	J-3	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	16939
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	September 30, 2004 Annual	**Certified Max Gross Wt.:**	1220 lbs
Time Since Last Inspection:	9 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3482 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-200ACC90
Registered Owner:	Adria Zuccaro	**Rated Power:**	90 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

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:		**Visibility**	7 miles
Lowest Ceiling:	Overcast / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	North Pole, AK	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	18:05 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Wright Field	**Runway Surface Type:**	Gravel
Airport Elevation:	480 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	2500 ft / 100 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	64.833335,-147.449996

Administrative Information

Investigator In Charge (IIC):	LaBelle, James
Additional Participating Persons:	Mark Smith; FAA, Fairbanks Flight Standards District Office; Fairbanks, AK
Original Publish Date:	June 8, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=60407