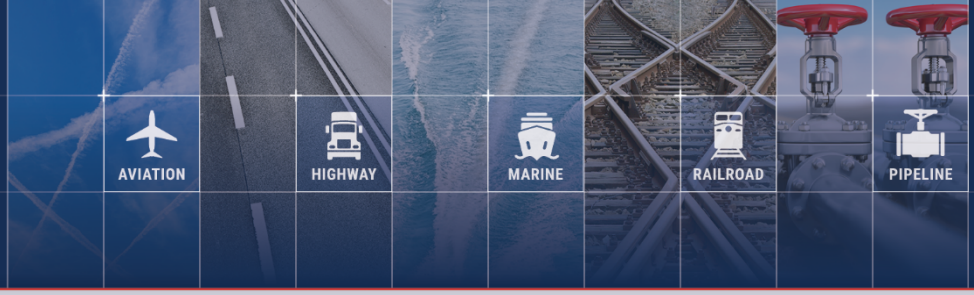

Aviation Investigation Final Report

Location:	Merrickville, New York	**Accident Number:**	ERA23LA351
Date & Time:	August 26, 2023, 17:38 Local	**Registration:**	N114DZ
Aircraft:	NANCHANG CHINA CJ-6A	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, during a cross-country flight, he chose to divert to a closer airport due to weather and air traffic control delays. About 40 nautical miles from the diversion airport, the engine lost total power. The pilot attempted to restart the engine, but was unsuccessful in restoring power and chose to conduct a forced landing into trees. The airplane impacted the trees and sustained substantial damage to both wings, the fuselage, and the left horizontal stabilizer.

A video recorded by a witness near the accident site captured the sound of the engine cutting in and out before ultimately going silent, which was consistent with an additional witness report.

Based upon fueling records and the pilot's report of his fuel planning and the airplane's fuel consumption rate, the airplane should have had about one hour of fuel remaining at the time of the loss of power. Due to the airplane damage, the total fuel quantity on board could not be established; however, the smell of fuel was present at the accident site.

Examination of the engine found that a small piece of the intake duct work of a cylinder was missing. While having this piece missing could have resulted in under-performance of the engine or a partial loss of power, it is unlikely this would have resulted in a total loss of engine power. There were no other preaccident mechanical malfunctions or failures found with the airplane that would have precluded normal operation and the reason for the loss of power could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A total loss of engine power while enroute for reasons that could not be determined.

Findings

Aircraft	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute	Unknown or undetermined (Defining event)
Enroute	Off-field or emergency landing
Enroute	Collision with terr/obj (non-CFIT)

On August 26, 2023, at 1738 eastern daylight time, a Nanchang CJ-6A, N114DZ, was substantially damaged when it was involved in an accident near Merrickville, New York. The airline transport pilot and pilot-rated passenger sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The airplane departed Dewitt Field/Old Town Municipal Airport (OLD), Old Town, Maine, at 1518 with a destination of State College Regional Airport (UNV), State College, Pennsylvania, which was about 473 miles southwest. While enroute, the pilot realized that due to weather and air traffic control (ATC) deviations, he would not have the required fuel reserves to continue the flight to UNV. He decided to divert to Greater Binghamton Airport/Edwin A Link Field (BGM), Binghamton, New York, which was 117 nautical miles northeast of UNV. Subsequently, about 40 nautical miles from BGM, the engine sustained a total loss of power.

The pilot reported completing the engine failure in flight emergency procedure. He reported that the airplane had about 1 hour of fuel remaining on board at the time of the loss of power. He switched the magneto from right to left multiple times and both were only effective for a few seconds each before the engine lost power again. The pilot-rated passenger reported that, while the pilot began to address the engine failure, he called ATC and declared an emergency. ATC gave the pilot a radar vector to the closest airport, but the pilot determined that they would not be able to glide that distance and began to look for a place to make a forced landing. With no suitable fields in the vicinity, the pilot reported that, “I felt the safest course of action was to ditch into trees.” The airplane impacted multiple trees and came to rest on its right side. The impact resulted in substantial damage to both wings, the fuselage, and left horizontal stabilizer.

A witness who lived near the accident site was outside her home when she saw a “small green airplane descending.” She stated that, “There was no sound whatsoever coming from the plane, he quickly lost altitude and descended into the tree line.” She also reported that, about 200 yards from the accident site, there was a “slight smell of fuel,” which she followed to find the site. A video was recorded by another witness near the accident site that recorded the sound of the airplane’s engine cutting in and out before ultimately going silent.

Postaccident examination of the wreckage found that the flight control stick moved freely by hand with no binding. The throttle control was full open, the mixture control was 3/4 toward the full rich position, the carburetor heat was on, and the fuel selector was on. There were no residual fuel vapors in either of the wing fuel tanks; however, the smell of fuel was present at the site. The front spark plugs were removed and about 2 quarts of fuel ran out of the spark plug hole of one cylinder. Compression and suction were confirmed on all cylinders when the crankshaft was rotated by hand using the propeller. Valvetrain continuity was confirmed on all but one cylinder, which exhibited impact damage to the push rods, when the crankshaft was rotated by hand using the propeller. Both magnetos were removed and produced spark on all leads when rotated using an electric drill. The fuel screen was removed and exhibited no debris; there was slight corrosion inside the fuel screen housing. The oil filter was removed and cut open; the filter pleats contained a small number of metallic fragments. The cylinders were not labeled and were marked arbitrarily; there was a hole on the No. 1 cylinder intake tube with a piece missing; this piece was not found during the examination.

Review of maintenance records indicated that the airplane's fuel capacity was increased in 2014 to 64 gallons total, with 2 gallons of unusable fuel. The pilot reported that they had departed on the flight with 62 gallons of 100 low-lead (100LL) aviation fuel on board. Fuel records showed that the pilot purchased 28.9 gallons of 100LL two days before the accident flight. The pilot reported that he used a fuel consumption rate of 16 gallons per hour while flight planning and that he did not operate the airplane for more than 3 hours. This would result in the airplane having an endurance of about 3.8 hours; the accident occurred about 2.6 hours into the flight.

Pilot Information

Certificate:	Airline transport; Flight engineer; Remote	**Age:**	59,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	March 13, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	March 5, 2023
Flight Time:	15000 hours (Total, all aircraft), 60 hours (Total, this make and model), 6000 hours (Pilot In Command, all aircraft), 220 hours (Last 90 days, all aircraft), 90 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Pilot-rated passenger Information

Certificate:	Commercial	**Age:**	22,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1	**Last FAA Medical Exam:**	
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	NANCHANG CHINA	**Registration:**	N114DZ
Model/Series:	CJ-6A	**Aircraft Category:**	Airplane
Year of Manufacture:	1967	**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	2132018
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	May 21, 2023 Condition	**Certified Max Gross Wt.:**	3080 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4207.6 Hrs as of last inspection	**Engine Manufacturer:**	Vedeneyev
ELT:	C126 installed, activated, aided in locating accident	**Engine Model/Series:**	M14P
Registered Owner:	On file	**Rated Power:**	360 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	OIC,1024 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	17:35 Local	**Direction from Accident Site:**	355°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	330°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.92 inches Hg	**Temperature/Dew Point:**	24°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Old Town, ME (OLD)	**Type of Flight Plan Filed:**	None
Destination:	State College, PA (UNV)	**Type of Clearance:**	VFR flight following
Departure Time:	15:18 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	42.265667,-75.168543(est)

Administrative Information

Investigator In Charge (IIC):	Young, Joshua
Additional Participating Persons:	Christopher Coleman; FAA/FSDO; Albany, NY
Original Publish Date:	July 17, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=192948