Aviation Investigation Final Report

Location:	Louisville, Kentucky	**Accident Number:**	ERA24LA109
Date & Time:	February 1, 2024, 10:35 Local	**Registration:**	N1317P
Aircraft:	Piper PA23	**Aircraft Damage:**	Substantial
Defining Event:	Part(s) separation from AC	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Flight test		

Analysis

After recently completed maintenance, and the pilot and pilot-rated passenger decided to take the airplane for a test flight. Both occupants reported that a preflight inspection was completed and that no anomalies were noted during the preflight. Shortly after takeoff, the pilot and passenger noticed that a large part of the right engine nacelle cover had departed from the airplane. They requested to return to land at the airport and made a subsequent uneventful landing. The pilot reported that there were no adverse control issues observed during the return for landing. A subsequent inspection of the airplane revealed that the nacelle panel had impacted the right side of the horizontal stabilizer, resulting in substantial damage.

Postaccident examination of the right engine nacelle revealed that most of the inspection panel had separated from the nacelle and was not located; however, a small portion of the outboard section of the panel remained attached to the engine nacelle. The remaining portion of the panel displayed significant wear around the camlock and screw retention holes; at least one of the retention screw holes was significantly larger than the retention screw head. While the missing portion of the of the inspection panel was not available for examination, it is likely that the screw holes on this portion were similarly worn. This wear should have been apparent to maintenance personnel when inspecting the airplane (but likely would have been obscured by the engine cowling and not visible during a pilot's preflight inspection). Based on this information, it is likely, that when exposed to high airflow during departure, a portion of the panel pulled out of the retention fasteners and was pulled out into the airstream, resulting in most of the panel being torn from the airframe.

Probable Cause and Findings

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

The failure of maintenance personnel to thoroughly inspect and repair the worn-out panel fasteners and fastener holes.

Findings

Aircraft	(general) - Fatigue/wear/corrosion
Aircraft	Fasteners - Inadequate inspection
Personnel issues	Scheduled/routine inspection - Maintenance personnel

Factual Information

History of Flight

Prior to flight	Aircraft inspection event
Initial climb	Part(s) separation from AC (Defining event)
Initial climb	Miscellaneous/other

Pilot Information

Certificate:	Airline transport; Flight engineer; Flight instructor	**Age:**	53,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter; Unmanned (sUAS)	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	September 5, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	August 17, 2023
Flight Time:	(Estimated) 14000 hours (Total, all aircraft), 20 hours (Total, this make and model), 6000 hours (Pilot In Command, all aircraft), 80 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Pilot-rated passenger Information

Certificate:	Airline transport; Flight instructor; Remote	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Unmanned (sUAS)	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	February 1, 2024
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	August 15, 2023
Flight Time:	(Estimated) 12000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N1317P
Model/Series:	PA23 150	**Aircraft Category:**	Airplane
Year of Manufacture:	1955	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	23-357
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	December 29, 2023 Annual	**Certified Max Gross Wt.:**	3500 lbs
Time Since Last Inspection:	1 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	6417.6 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	O-360-A1D
Registered Owner:	On file	**Rated Power:**	180 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Not reported
Observation Facility, Elevation:	LOU,545 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	09:53 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	3°C / 0°C
Precipitation and Obscuration:			
Departure Point:	LOUISVILLE, KY (LOU)	**Type of Flight Plan Filed:**	None
Destination:	LOUISVILLE, KY (LOU)	**Type of Clearance:**	None
Departure Time:	10:35 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	BOWMAN FLD LOU	**Runway Surface Type:**	
Airport Elevation:	545 ft msl	**Runway Surface Condition:**	Dry
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Traffic pattern

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:**	38.227984,-85.663749(est)

Administrative Information

Investigator In Charge (IIC):	Gibson, Kurt
Additional Participating Persons:	Danny Gregory; FAA/FSDO; Louisville, KY
Original Publish Date:	June 13, 2024
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=193758