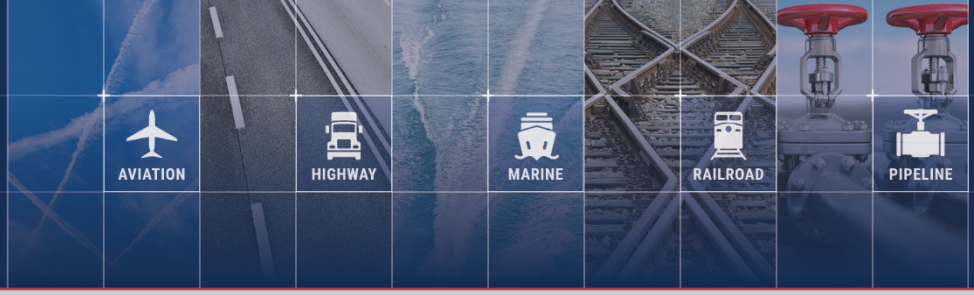

Aviation Investigation Final Report

Location:	Tappahannock, Virginia	**Accident Number:**	IAD02LA022
Date & Time:	December 30, 2001, 11:10 Local	**Registration:**	N10MS
Aircraft:	Cessna 310H	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

While in cruise flight, the airplane's left engine lost total power. The pilot elected to perform a single-engine landing at the nearest airport, on runway 02. During the landing flare, a gust of wind forced the left wing down and it struck the runway. The airplane continued off the left side of the runway and came to rest in the grass area. The winds reported by an air traffic controller from an airport 30 miles to the southwest, were from 330 degrees at 6 knots, gusting to 22 knots. The airport where the winds were reported from had six runways, one of which was oriented on a heading of 340 degrees. Examination of the engine revealed that the alternate air valve had broken off and was observed embedded in the fuel injector servo. According to the Cessna 310H Pilot Operating Handbook, the last item under the Engine Failure During Flight Checklist, was to land at the nearest suitable airport. The pilot reported 5,117 hours of total flight experience, 10 of which were in make and model. He additionally reported 38 hours of multi-engine flight experience.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate compensation for the gusty wind conditions. Factors in the accident were the gusty wind conditions and the total loss of left engine power due to the alternate air valve becoming disconnected and embedded in the fuel injector servo.

Findings

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

Findings
1. 1 ENGINE
2. (F) INDUCTION AIR CONTROL,ALTERNATE AIR/DOOR - DISCONNECTED

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
3. (F) WEATHER CONDITION - GUSTS
4. (C) COMPENSATION FOR WIND CONDITIONS - INADEQUATE - PILOT IN COMMAND

Factual Information

On December 30, 2001, about 1110 eastern standard time, a Cessna 310H, N10MS, was substantially damaged while landing at the Tappahannock Airport (W79), Tappahannock, Virginia, following a total loss of left engine power, during cruise flight. The certificated commercial pilot and two passengers were not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, between Asheville Regional Airport (AVL), Asheville, North Carolina, and Laurence G. Hanscom Field (BED), Bedford, Massachusetts. The personal flight was conducted under 14 CFR Part 91.

According to the pilot, he departed Asheville about 0900. The flight was "uneventful" until about 30 miles northeast of Richmond, Virginia, when the left engine lost power. The pilot attempted to restart the engine, but was unsuccessful. He secured the engine, and contacted Richmond Approach Control for information on the closest airport. The pilot was informed that Tappahannock Airport was 10 miles ahead, and he prepared for a landing on runway 02, a 2,785-foot-long, 75-foot-wide runway.

After a "normal" approach to the runway, during the landing flare, a gust of wind forced the left wing down. The wing struck the runway, and the airplane slid to a stop off the left side, coming to rest in the grass area.

The pilot stated that Richmond Approach reported the winds from 330 degrees at 6 knots, gusting to 22 knots.

An examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed substantial damage to the left wing and engine firewall. Examination of the engine revealed that the alternate air valve had broken off and was observed embedded in the fuel injector servo. The aluminum hinge which connected the alternate air valve to the airbox assembly remained attached to the valve and appeared worn where a steel cotter pin had connected the two pieces. The steel cotter pin remained attached to the airbox assembly and the holes in which it was housed appeared elongated.

A review of the airplane and engine logbooks by the FAA inspector revealed that the last annual inspection was performed in May 2001. No work entries pertaining to the alternate air valve were observed in the logbooks.

The pilot reported 5,117 hours of total flight time, 10 of which were in make and model. He additionally reported 38 hours of multi-engine flight experience.

The winds reported at 1055, at Patuxent Naval Air Station, located 30 miles to the northeast, were from 230 degrees at 8 knots. The winds reported at 1155, were from 230 degrees at 9

knots, gusting to 14 knots. The winds reported at 1054, at Richmond International Airport (RIC), Richmond, Virginia, 30 miles to the southwest, were variable at 5 knots.

Richmond International Airport consisted of 6 runways, one of which was oriented on a heading of 340 degrees.

According to the Cessna 310H Pilot Operating Handbook, the last item under the Engine Failure During Flight Checklist was to "land at the nearest suitable airport."

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	67,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 single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	July 3, 2001
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	September 17, 2001
Flight Time:	5117 hours (Total, all aircraft), 10 hours (Total, this make and model), 4888 hours (Pilot In Command, all aircraft), 11 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N10MS
Model/Series:	310H	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	310H0006
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 1, 2001 Annual	**Certified Max Gross Wt.:**	5100 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470
Registered Owner:	Micheal Mitchell	**Rated Power:**	260 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:	NHK,40 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	10:55 Local	**Direction from Accident Site:**	40°
Lowest Cloud Condition:	Few / 3000 ft AGL	**Visibility**	7 miles
Lowest Ceiling:	Broken / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.77 inches Hg	**Temperature/Dew Point:**	7°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Asheville, NC (AVL)	**Type of Flight Plan Filed:**	None
Destination:	Bedford, MA (BED)	**Type of Clearance:**	None
Departure Time:	09:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Tappahannock Muni Airport W79	**Runway Surface Type:**	Asphalt
Airport Elevation:	31 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	02	**IFR Approach:**	None
Runway Length/Width:	2785 ft / 75 ft	**VFR Approach/Landing:**	Forced landing;Straight-in

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:**	37.924999,-76.871391

Administrative Information

Investigator In Charge (IIC):	Andrews, Jill
Additional Participating Persons:	John Keymont; Federal Aviation Administration; Richmond, VA
Original Publish Date:	April 8, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=53972