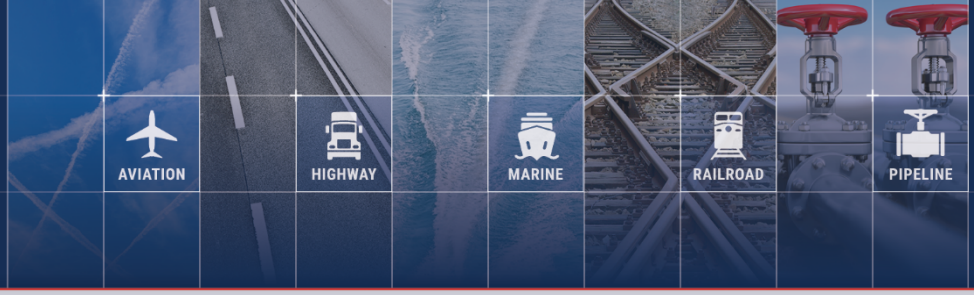

Aviation Investigation Final Report

Location:	PICKENS, South Carolina	**Accident Number:**	ATL95LA131
Date & Time:	July 8, 1995, 19:30 Local	**Registration:**	N150AE
Aircraft:	PZL KOLIBER -150A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Serious, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that he was flying over mountainous terrain in cruise flight when the engine began to lose power. He followed emergency procedures and switched on the boost pump. The engine regained full power momentarily, but then experienced a gradual loss of power. The airplane was brought to minimum controllable airspeed (MCA), and settled in the tree tops. There was a post crash fire following the collision. According to the pilot, emergency procedures were followed, and the carburetor temperature gauge appeared normal from a glance. The weather conditions were favorable for the formation of carburetor ice, and the pilot reported that he did not use the carburetor heat. Conversations with other operators of the same type aircraft and the engine manufacturer revealed that there is a problem with the aircraft induction airbox. The airbox problem causes the engine to run rough. Leaning of the engine exacerbates the condition, and introduction of carburetor heat increases engine RPM rather than decreasing RPM.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the inadequate design and operation of the induction airbox. A factor in the accident was the carburetor icing weather conditions.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL
Phase of Operation: CRUISE - NORMAL

Findings
1. (F) WEATHER CONDITION - CARBURETOR ICING CONDITIONS
2. (C) INDUCTION AIR DUCTING - INADEQUATE
3. (C) ACFT/EQUIP,INADEQUATE DESIGN - MANUFACTURER

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

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

Findings
4. OBJECT - TREE(S)

Factual Information

On July 8, 1995, at 1930 eastern daylight time, a PZL Koliber -150A, N150AE, was destroyed following a collision with terrain, and subsequent explosion, during a forced landing attempt near Pickens, South Carolina. The commercial pilot and one passenger received minor injuries, the other passenger recieved serious injury in the accident; the aircraft was destroyed. Visual meteorological conditions existed at the time, and no flight plan had been filed for the personal flight. The aircraft was being operated under the provisions of 14 CFR Part 91 by the pilot. The flight departed Camden, South Carolina at 1715, and the flight was intended to return to Camden.

The pilot reported that he received a weather briefing from a Federal Aviation Administration Flight Service Station (FSS). The conditions were favorable for the formation of carburetor ice (see attached Weather Information (page 4), and Icing Probability Curves). He glanced at the Carburetor Temperature Gauge and it appeared normal "although the impending situation became the main focus of attention." According to the pilot, carburetor heat was not used. During cruise flight over the mountainous terrain, the aircraft engine began to lose power. He turned on the electric fuel boost pump, and the engine regained power momentarily. The engine then began a "slow steady decrease from 2500 RPM to 1700 RPM where it was to stabilize." He reported that, with the reduced power, he could not clear the mountain ridges and elected to execute a forced landing into the tree tops. The aircraft impacted the trees and terrain at minimum controllable airspeed (MCA), and there was a post crash fire and an explosion. The occupants were forced to remain with the aircraft until the following morning, and then walked down the mountain, and found assistance about 1800 on the afternoon of July 9.

Examination of the airplane failed to disclose a mechanical malfunction or a component failure. The functional engine examination revealed that there was continuity in the engine drive train. There was strong evidence of a post-crash fire, both magneto housings were melted along with the vacuum pump and engine fuel pump. The on-scene FAA Safety Inspector stated, "The final outcome of this tear down is no evidence of engine failure or anything that could cause a loss of power."

A mechanic, who maintains another PZL Koliber 150A, called to report that he had been having trouble with the aircraft engine running rough. He stated that he had made several efforts to correct the problem by adjusting, and attempting to have the carburetor rebuilt. He stated that he could not correct the problem in this manner, so he replaced the induction airbox with and airbox from a Piper PA-140. After the airbox change, the aircraft engine ran smoothly through all power configurations.

The aircraft engine manufacturer, who does not build the airbox, sent a representative to the

factory in Poland to test a new aircraft in order to attempt to identify the problem. The Product Service Representative from the engine manufacturer reported that the new aircraft engine began to run rough at about 1800 revolutions per minute (RPM). He stated that leaning the engine exacerbated the condition, and that the addition of carburetor heat resulted in a rise in engine RPM rather than a decrease.

Pilot Information

Certificate:	Commercial	**Age:**	21,Male
Airplane Rating(s):	Single-engine land; 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 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	February 16, 1995
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1100 hours (Total, all aircraft), 26 hours (Total, this make and model), 871 hours (Pilot In Command, all aircraft), 64 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PZL	**Registration:**	N150AE
Model/Series:	KOLIBER -150A KOLIBER -1	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	04940070
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 5, 1995 100 hour	**Certified Max Gross Wt.:**	1874 lbs
Time Since Last Inspection:	7 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	108 Hrs	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-E2A
Registered Owner:	FRANK MOONEYHAN	**Rated Power:**	150 Horsepower
Operator:	ANDREW J. SHAKESPEARE	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GSP ,972 ft msl	**Distance from Accident Site:**	25 Nautical Miles
Observation Time:	19:50 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Scattered / 13000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	26°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CAMDEN , SC (CDN)	**Type of Flight Plan Filed:**	None
Destination:	(CDN)	**Type of Clearance:**	None
Departure Time:	17:15 Local	**Type of Airspace:**	

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Serious, 1 Minor	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	1 Serious, 2 Minor	**Latitude, Longitude:**	34.880062,-82.700073(est)

Administrative Information

Investigator In Charge (IIC):	Sasser, Roff
Additional Participating Persons:	JOSEPH STUPPIELLO; WEST COLUMBIA , SC
Original Publish Date:	November 25, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=3591