



# Aviation Investigation Final Report

<b>Location:</b>	Frederick, Oklahoma	<b>Accident Number:</b>	CEN11LA350
<b>Date &amp; Time:</b>	May 20, 2011, 15:13 Local	<b>Registration:</b>	N8957D
<b>Aircraft:</b>	Piper PA-22-160	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fire/smoke (non-impact)	<b>Injuries:</b>	1 Serious, 1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

About 20 minutes after the private pilot and his passenger departed on a local flight, the pilot noticed his feet were getting hot. He thought it might have been the cabin heat, but the heat grew more intense, and the cockpit began to fill with a gray/bluish-colored smoke. The pilot then observed black smoke and flames near his left foot. The pilot made a forced landing to a muddy field where he and his passenger were able to exit the airplane before it was rapidly consumed by fire. A postaccident examination of the airplane revealed that the entire fuselage, tail section, right wing, and the inboard section of the left wing were consumed by fire. The engine compartment also sustained extensive fire damage. The origin of the fire could not be determined due to the extensive damage.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An in-flight fire for undetermined reasons.

## Findings

<b>Not determined</b>	(general) - Unknown/Not determined
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## Factual Information

### History of Flight

<b>Maneuvering-low-alt flying</b>	Fire/smoke (non-impact) (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing

On May 20, 2011, at 1513 central daylight time, N8957D, a Piper PA-22-160 airplane, was substantially damaged from an in-flight fire. The pilot made a forced landing to a field and the airplane was consumed by fire. The private pilot was seriously injured and the passenger was not injured. The airplane was owned and operated by the pilot. Visual meteorological conditions prevailed and no flight plan was filed for the local flight conducted under 14 CFR Part 91.

According to the pilot, about 20 minutes after departure he was maneuvering at an altitude of 600 feet above ground level (agl) when he began to feel his feet getting hot. He thought it might have been the cabin heat, but the heat was getting more intense and the cockpit began to fill with a gray/bluish colored smoke. The pilot then observed black smoke and flames near his left foot, which he attempted to stomp out. The pilot made a forced landing to a muddy field where he and his passenger were able to exit the airplane before it was rapidly consumed by fire.

The airplane was examined by an inspector with the Federal Aviation Administration (FAA) the day after the accident. He stated that the entire fuselage, tail section, right wing and the inboard section of the left wing were consumed by fire. The engine compartment also sustained extensive fire damage.

Several photographs of the engine and airplane were sent to a National Transportation Safety Board Fire and Explosion Specialist. The specialist reviewed the photographs and was unable to determine the origin or cause of the fire due to the extensive damage and limited investigative materials.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	49, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Unknown	<b>Last FAA Medical Exam:</b>	January 2, 2009
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	February 15, 2011
<b>Flight Time:</b>	1150 hours (Total, all aircraft), 250 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N8957D
<b>Model/Series:</b>	PA-22-160	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	22-6120
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	May 2, 2011 Annual	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>	5 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2856 Hrs at time of accident	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	0-320 SERIES
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	FDR,1258 ft msl	<b>Distance from Accident Site:</b>	4 Nautical Miles
<b>Observation Time:</b>	15:53 Local	<b>Direction from Accident Site:</b>	90°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots / 14 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	210°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.67 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 13°C
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	Frederick, OK	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Frederick, OK	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	14:50 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	None	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	In-flight
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 1 None	<b>Latitude, Longitude:</b>	34.351112,-98.983612(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Yeager, Leah
<b>Additional Participating Persons:</b>	Don Doener; FAA/FSDO; Oklahoma City, OK
<b>Original Publish Date:</b>	May 21, 2012
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=79171">https://data.nts.gov/Docket?ProjectID=79171</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).