



Aviation Investigation Final Report

Location:	Bay St Louis, Mississippi	Accident Number:	ERA14LA178
Date & Time:	March 30, 2014, 14:15 Local	Registration:	N11FS
Aircraft:	Bellanca 8KCAB	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, after the airplane lifted off after several touch-and-go landings, he suddenly smelled fuel and observed streaming fuel. The fuel appeared to come from the fuel system header tank area and streamed onto the cockpit floor between his feet. He landed the airplane straight ahead and taxied clear of the active runway. The airplane caught fire, and the pilot exited through the cockpit door. Within a minute, the airplane was engulfed in flames. Airport rescue personnel responded and extinguished the fire. Postaccident examination of the airplane revealed that almost all of the fuel lines going to or coming from the header tank were completely burned away. Two sections of fuel and vent lines remained attached to the header tank and were examined; no evidence of pre-existing fatigue or cracking was observed. According to the pilot, who was also the owner, no recent maintenance had been performed in the area of the header tank. It is likely that a sudden leak occurred at a line to or from the header tank; however, the fire destroyed all evidence of its origin.

Probable Cause and Findings

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

A sudden fuel leak, which resulted in a postlanding fire; the origin of the leak could not be determined due to fire damage.

Findings

Aircraft	Fuel storage - Malfunction
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Initial climb	Sys/Comp malf/fail (non-power) (Defining event)
Emergency descent	Off-field or emergency landing
Taxi-from runway	Fire/smoke (non-impact)

On March 30, 2014, about 1415 central daylight time (CDT), a Bellanca 8KCAB, N11FS, caught fire after landing at Stennis International Airport (HSA), Bay St. Louis, Mississippi. The private pilot received minor injuries and the airplane was substantially damaged. The airplane was operated by the pilot. Day, visual meteorological conditions prevailed for the 14 CFR Part 91 personal flight, and no flight plan was filed. The flight originated at Gulfport, Mississippi (MS82) about 1315.

The pilot reported the following. He was flying in the local traffic pattern at HSA and performing touch-and-go landings on runway 18. After the 14th touch-and-go landing, he climbed straight ahead over the runway. About 200 feet above the ground, he suddenly smelled fuel fumes, and observed fuel streaming onto the cockpit floor, between his feet. The fuel stream appeared to originate from the header tank. He turned off the magnetos and electrical master switch and landed straight ahead on the runway. He taxied clear of the runway and observed fire. He exited through the cockpit door and, within about a minute, the airplane was engulfed in flames. Airport rescue fire fighter personnel responded to the scene and extinguished the fire.

On March 31, 2014, an inspector with the Federal Aviation Administration responded to the accident site and examined the wreckage. He reported that the right wing was totally destroyed by the fire. The airplane was equipped with a header tank in the fuel system. All lines to and from the header tank were completely or partially burned away. The tank has numerous holes which appeared to have resulted from the fire and heat.

On April 8, 2014, the NTSB Investigator-in-Charge (IIC) traveled to the hangar where the wreckage was stored and examined the wreckage. The purpose of the examination was to look for potential sources of a fuel leak. With the pilot present, the header tank was removed from the airframe and examined. The tank sustained significant heat and fire damage and numerous holes in the tank walls were observed. A section of the fuel pickup line (part number 1-10089) and its fitting and a section of a fuel vent line (part number 7-1414-10) and its fitting remained attached to the tank; however, they were damaged from heat and fire. All other fuel lines associated with the header tank were completely burned away. The damaged lines and fittings were removed from the tank and forwarded to the NTSB Materials Laboratory, Washington, DC for further examination.

The fuel lines and fittings that were removed from the header tank were examined at the NTSB Materials Laboratory on June 3, 2014. Optical examinations of the two fuel line fractures revealed features consistent with overstress separations while the lines were at elevated temperatures. No indications of fatigue or other preexisting cracking was uncovered.

According to the pilot, who was also the airplane owner, no recent maintenance in the area of the header tank had been performed.

Pilot Information

Certificate:	Private	Age:	60
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	February 20, 2014
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	February 15, 2014
Flight Time:	8070 hours (Total, all aircraft), 275 hours (Total, this make and model), 955 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	Registration:	N11FS
Model/Series:	8KCAB	Aircraft Category:	Airplane
Year of Manufacture:	1972	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	17-72
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	January 6, 2014 Annual	Certified Max Gross Wt.:	1850 lbs
Time Since Last Inspection:	8 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1837 Hrs at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	AEIO-320-E1A
Registered Owner:	LOEDING LAWRENCE E	Rated Power:	150 Horsepower
Operator:	LOEDING LAWRENCE E	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	HSA,22 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	13:51 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 12000 ft AGL	Visibility	7 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	80°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.2 inches Hg	Temperature/Dew Point:	22°C / -2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bay St Louis, MS (HSA)	Type of Flight Plan Filed:	None
Destination:	Bay St Louis, MS (HSA)	Type of Clearance:	VFR
Departure Time:	14:15 Local	Type of Airspace:	

Airport Information

Airport:	STENNIS INTL HSA	Runway Surface Type:	Asphalt
Airport Elevation:	23 ft msl	Runway Surface Condition:	Dry
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	8497 ft / 150 ft	VFR Approach/Landing:	Touch and go

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	30.367776,-89.454719(est)

Administrative Information

Investigator In Charge (IIC): Hicks, Ralph

Additional Participating Persons:

Original Publish Date: October 27, 2014

Last Revision Date:

Investigation Class: [Class](#)

Note: The NTSB traveled to the scene of this accident.

Investigation Docket: <https://data.ntsb.gov/Docket?ProjectID=88990>

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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](#).