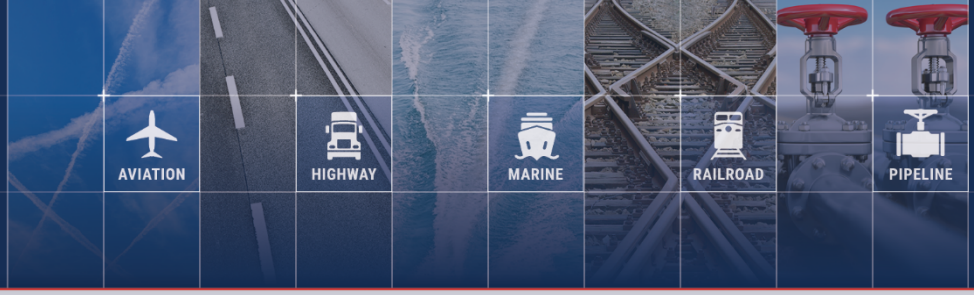

Aviation Investigation Final Report

Location:	Ulysses, Kansas	**Accident Number:**	CEN13LA561
Date & Time:	September 25, 2013, 18:30 Local	**Registration:**	N4623M
Aircraft:	Weatherly 620	**Aircraft Damage:**	Destroyed
Defining Event:	Fire/smoke (non-impact)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Ferry		

Analysis

The pilot reported that, about 10 minutes after takeoff while in cruise flight at 200 feet above ground level, he smelled smoke in the cockpit. Within 10 seconds, dark smoke filled the cockpit. He turned the master switch to the "off" position, and the engine subsequently stopped producing power. He turned on the master switch and the fuel boost pump to restart the engine, but the engine did not restart. He executed a forced landing to a cornfield, and fire consumed most of the airplane. The examination of the wreckage revealed that the radial engine and the components located forward of the firewall exhibited minimal fire damage. The area that exhibited the most extensive fire damage was located between the chemical hopper and aft of the engine firewall; this area included the fuel boost pump, fuel strainer, and fuel lines. The source of the fire and the reason for the loss of engine power could not be determined due to the extensive fire damage to the airplane's fuel and electrical systems.

Probable Cause and Findings

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

An in-flight fire and subsequent loss of engine power for reasons that could not be determined due to extensive fire damage to the airplane and it s fuel and electrical systems.

Findings

Aircraft	(general) - Not specified
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute	Fire/smoke (non-impact) (Defining event)
Enroute	Loss of engine power (total)
Standing-engine(s) shutdown	Fire/smoke (non-impact)

On September 25, 2013, about 1830 central daylight time, a Weatherly 620 airplane, N4623M, was destroyed as a result of an in-flight fire and a forced landing near Ulysses, Kansas. The commercial pilot, the sole occupant, was not injured. The airplane was registered to and operated by a private individual under the provisions of the 14 Code of Federal Regulations Part 91 as a ferry flight. Visual meteorological conditions prevailed at the time of the accident, and no flight plan was filed. The flight originated from the Ulysses Airport (ULS) about 1820 with Eads Municipal Airport, Eads, Colorado, as the destination.

The pilot reported that about 10 minutes after departing ULS he was in cruise flight at 200 feet above ground level, and he smelled smoke in the cockpit. Within 10 seconds, the smoke filled the cockpit and it was very dark. He stated that it did not smell like an electrical fire. He reported that he turned the master switch to the OFF position, and the engine subsequently stopped producing power. He turned on the master switch and the fuel boost pump to in an attempt to restart the engine, but without success. He executed a forced landing to a corn field. He exited the airplane, and the fire consumed most of the airplane excluding the radial engine, empennage, and right wing.

According to the airplane's owner, the airplane had not been flown for about two to three years. The maintenance records indicated that the airplane had undergone an annual maintenance inspection on April 20, 2012. The airplane had a total of 2,099.1 hours at the time of the inspection.

After the annual inspection was completed, the airplane was flown to another maintenance facility to get GPS database updates installed. During the flight, an oil leak was discovered. The engine was removed and an overhauled engine was installed. A ground run about one hour in length was conducted to check for leaks and none were found. The airplane had a total of 2,101.6 hours. The maintenance facility manager reported that the area behind the engine firewall was not accessed during the engine replacement.

The examination of the wreckage revealed that the radial engine and the components located forward of the firewall exhibited minimal fire damage. However, the area that appeared to have the most intense fire damage was located between the chemical hopper and aft of the engine firewall, which included the fuel boost pump, fuel strainer, and fuel lines. A section of the fuel line that connected the right fuel tank to the fuel pump exhibited cracks and areas of incipient melting. A metallurgical examination of the fuel line by the National Transportation Safety Board's Materials Laboratory determined that it was the result of the post impact fire. No evidence of pre-existing cracks was observed. The examination of the airplane's fuel and electrical systems revealed extensive fire damage that precluded further examination.

Pilot Information

Certificate:	Commercial	**Age:**	64
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Center
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	January 9, 2013
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	November 15, 2012
Flight Time:	(Estimated) 12000 hours (Total, all aircraft), 1500 hours (Total, this make and model), 300 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Weatherly	**Registration:**	N4623M
Model/Series:	620	**Aircraft Category:**	Airplane
Year of Manufacture:	1986	**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	1520
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	April 20, 2013 Annual	**Certified Max Gross Wt.:**	10582 lbs
Time Since Last Inspection:	2.5 Hrs	**Engines:**	Reciprocating
Airframe Total Time:	2099.1 Hrs as of last inspection	**Engine Manufacturer:**	Pratt and Whitney
ELT:	Not installed	**Engine Model/Series:**	R-985
Registered Owner:	LINNEBUR GENE L	**Rated Power:**	450 Horsepower
Operator:	LINNEBUR GENE L	**Operating Certificate(s) Held:**	Agricultural aircraft (137)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	20 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	20 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	32°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ulysses, KS (ULS)	**Type of Flight Plan Filed:**	None
Destination:	Eads, CO (9V7)	**Type of Clearance:**	None
Departure Time:	18:20 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	In-flight
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	37.68222,-101.453613

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Ken Simonian; FAA Wichita FSDO; Wichita, KS
Original Publish Date:	December 15, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88132