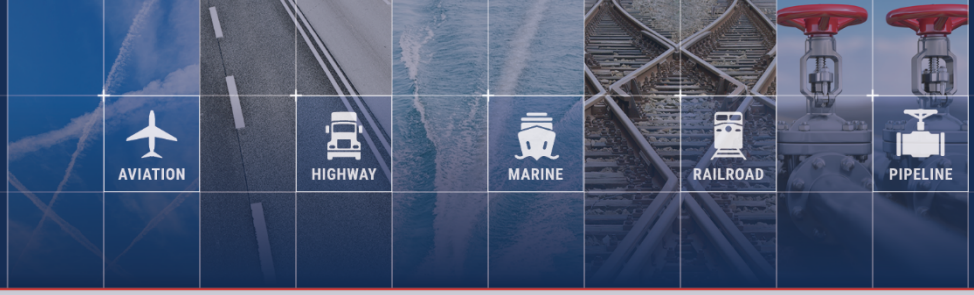

Aviation Investigation Final Report

Location:	Bloomington, Indiana	**Accident Number:**	CEN14LA504
Date & Time:	September 18, 2014, 11:45 Local	**Registration:**	N516SW
Aircraft:	SACCIO THOMAS A SEAWIND 3000	**Aircraft Damage:**	Destroyed
Defining Event:	Fire/smoke (non-impact)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and one passenger were on a cross-country flight in a single-engine amphibian airplane. The pilot reported to an airport tower air traffic controller that the airplane had a low fuel pressure indication and that he planned to fly directly to the airport. However, the airplane impacted terrain about 3 miles north of the airport. One witness reported seeing the airplane on fire before it crashed. A postcrash fire consumed most of the composite-frame airplane.

An examination of the engine's accessories was not performed due to fire and thermal damage. Although the engine sustained fire damage, compression and continuity through the engine drive train was established, and no preimpact abnormalities were noted. A section of an alternator cable and a section of a fuel line that had signatures consistent with fraying and thermal damage, respectively, were examined to determine if chafing and electrical arcing had occurred between them. However, the examined sections exhibited no evidence of chafing and arcing. The accident is consistent with an in-flight fire; however, the source of the fire could not be determined because the examination did not reveal any preimpact abnormities.

Probable Cause and Findings

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

An in-flight fire for reasons that could not be determined because the examination of the airplane did not reveal the source of the fire.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute	Unknown or undetermined
Enroute	Fire/smoke (non-impact) (Defining event)
Emergency descent	Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

On September 18, 2014, about 1145 central daylight time, a kit-built Seawind 3000 seaplane, N516SW, impacted terrain near Bloomington, Indiana. The private rated pilot and pilot rated passenger were fatally injured, and the seaplane was destroyed. The seaplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and a flight plan was not filed.

The pilot contacted the control tower operator at Monroe Country Airport (KBMG) and reported he had a low fuel pressure indicator problem and they planned to fly directly to the airport.

Several witnesses reported seeing the seaplane flying, with one witness noting that the seaplane was on fire prior to the aircraft impacting terrain.

Pilot Information

Certificate:	Private	**Age:**	72
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	November 21, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	765 hours (Total, all aircraft)		

Passenger Information

Certificate:		**Age:**	51
Airplane Rating(s):		**Seat Occupied:**	Unknown
Other Aircraft Rating(s):		**Restraint Used:**	Unknown
Instrument Rating(s):		**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

The pilot held a private pilot certificate with ratings for airplane single-engine land and sea. He also held instrument-airplane and repairman experimental aircraft builder ratings. The pilot's last class 3 medical exam was conducted on November 21, 2012. At the time of the exam, the pilot reported his flight experience as 765 total flight hours and 20 hours in last six months.

The passenger held a private pilot certificate with ratings for airplane single-engine land and sea. The passenger's last class 3 medical exam was conducted on December 12, 2012. At the time of the exam, the passenger reported his flight experience as 3,400 total flight hours and 50 hours in last six months.

Aircraft and Owner/Operator Information

Aircraft Make:	SACCIO THOMAS A	**Registration:**	N516SW
Model/Series:	SEAWIND 3000	**Aircraft Category:**	Airplane
Year of Manufacture:	2007	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	061
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:		**Engine Model/Series:**	IO-540-K1A5
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The Seawind is a kit built, composite structure, four seat, amphibian airplane, with a single tail-mounted engine. The airplane was powered by a 300 horsepower (HP) Lycoming IO-540-K1A5 reciprocating engine, which drove a Hartzell, 3 blade, constant speed propeller. A review of Federal Aviation Administration (FAA) records revealed the accident airplane received its special airworthiness certificate in the experimental amateur-built category on September 20, 2007.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KBMG	**Distance from Accident Site:**	
Observation Time:	11:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	110°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	20°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Madison, WI (KMSN)	**Type of Flight Plan Filed:**	None
Destination:	Bloomington, IN (KBMG)	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	

At 1153, the automated weather observation facility located at KBMG, reported wind from 110 degrees at 4 knots, visibility 10 miles, a clear sky, temperature 68 Fahrenheit (F), dew point 50 F, and a barometric pressure of 30.09 inches of mercury.

Airport Information

Airport:	Monroe County Airport KBMG	**Runway Surface Type:**	
Airport Elevation:	845 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing;Precautionary landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	Both in-flight and on-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	Unknown
Total Injuries:	2 Fatal	**Latitude, Longitude:**	39.164722,-86.618888(est)

The seaplane impacted terrain about 3 miles north of KBMG, in a lightly wooded area. A post-crash fire consumed much of the composite structure. Several pieces of composite material were located along the airplane's flight path; the material pieces had evidence of burn areas, consistent with an in-flight fire. After an initial documentation and examination of the wreckage site, the wreckage was removed for examination at a nearby facility.

Medical and Pathological Information

The Lawrence County Coroner's Office, Bedford, Indiana, conducted an autopsy on the pilot and pilot rated passenger. The cause of death on both occupants was determined to be injuries sustained in an aircraft crash.

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, conducted toxicologically testing on the on both occupants. The specimens were negative for tested items.

TEST and RESEARCH

Examination of the airplane was conducted; the fire had destroyed the majority of the airplane. The engine's 3-bladed propeller remained attached to the crankshaft. All three blades exhibited signs of fire/thermal damage, with one blade missing the outboard tip. One blade exhibited slight aft bending, starting about 12 inches from the tip. The engine's fuel servo and fuel pump were destroyed by the fire, and identification part and serial numbers could not be found. The fuel flow divider was dissembled and had suffered thermal damage to the diaphragm. The fuel nozzles and lines to the flow divider were secure. Both magnetos sustained thermal damaged and could not be tested. The sparkplugs were removed and appeared to have normal wear.

On the initial attempt to rotate the engine by manually rotating the propeller, the engine would only turn about 100 degrees before binding. The accessory case was removed and a large amount of melted aluminum was found within the gear train consistent with a melted aluminum case of a magneto. The melted aluminum was removed, and the crankshaft was able to rotate. Thumb compression and valve action was confirmed at each cylinder. The rear accessory gears rotated and mechanical continuity was

established throughout the engine drive train. The fire/thermal damage limited a complete examination of the engine; however, based on the limited examination, there was no evidence of pre-impact mechanical malfunctions noted.

During the examination, an electrical wire was found within the wreckage that had signatures consistent with fraying and a piece of metal attached. A fuel line was also found in the same area of the electrical wire that had signatures consistent with thermal damage. Both pieces would have been located in the vicinity of the tail and engine nacelle, a confined area of the tail structure near the engine nacelle.

Sections of both materials were sent to the NTSB Materials Laboratory in Washington DC for further examination. The purpose of examining sections of the fuel line and electrical wire was to identify a potential source of an in-flight fire. The laboratory investigation consequently tried to find evidence of chafing and electrical arcing between the alternator cable and the fuel line. While the laboratory found some evidence of electrical arcing, the tested section was absent evidence of chafing and arcing between the two.

A source of the in-flight fire was not found.

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Steven A Burnham; FAA FSDO; Indianapolis , IN Judson Rupert; Lycoming engines; Williamsport, PA
Original Publish Date:	January 5, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=90102