



# Aviation Investigation Factual Report

<b>Location:</b>	Zeeland, Michigan	<b>Incident Number:</b>	CEN16IA238
<b>Date &amp; Time:</b>	June 27, 2016, 14:30 Local	<b>Registration:</b>	N518EG
<b>Aircraft:</b>	Enstrom 280	<b>Aircraft Damage:</b>	Minor
<b>Defining Event:</b>	Fire/smoke (non-impact)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Factual Information

On June 27, 2016, about 1430 eastern daylight time, an Enstrom 208FX helicopter, N518EG, experienced an engine fire while preparing for departure from the Ottawa Executive airport (Z98), Zeeland, Michigan. The flight instructor and student pilot were not injured and the helicopter sustained minor fire damage. The helicopter was registered to and operated by Blue Sun Air, LLC, Zeeland, Michigan, under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Day visual meteorological conditions prevailed at the time.

The flight instructor reported that the student pilot was on his first flight. After a preflight inspection, they started the helicopter's engine and prepared for takeoff. Before increasing collective, the instructor noticed the lights on the panel flicker and smelled smoke. About the same time, the instructor also observed ground personnel running toward the helicopter. Both he and the student exited the helicopter and ground personnel were able to extinguish an engine fire.

An examination by a Federal Aviation Administration (FAA) inspector noted that the exhaust pipe had separated from the engine turbocharger. The helicopter had sustained damage to the engine access door, electrical wires, and smoke/thermal damage to the engine compartment.

The helicopter's turbocharger, exhaust clamp, and scavenge pump were sent to the National Transportation Safety Board (NTSB) Materials Laboratory in Washington, DC for further examination.

The materials laboratory noted that the band clamp assembly contained a strap portion and two U-shaped retainers. The bottom end of each U-shaped retainer were joined by several spot welds to the inner side of the strap portion. Examination of the band clamp assembly revealed the two U-shaped retainer portions fractured at the spot weld locations.

The NTSB's Materials Laboratory's Factual report is located in the public docket for this accident.

## Flight instructor Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	39
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument airplane; Instrument helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 3, 2016
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	March 22, 2016
<b>Flight Time:</b>	6500 hours (Total, all aircraft), 150 hours (Total, this make and model), 5280 hours (Pilot In Command, all aircraft)		

## Student pilot Information

<b>Certificate:</b>	<b>Age:</b>
<b>Airplane Rating(s):</b>	<b>Seat Occupied:</b> Left
<b>Other Aircraft Rating(s):</b>	<b>Restraint Used:</b>
<b>Instrument Rating(s):</b>	<b>Second Pilot Present:</b> Yes
<b>Instructor Rating(s):</b>	<b>Toxicology Performed:</b> No
<b>Medical Certification:</b>	<b>Last FAA Medical Exam:</b>
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>
<b>Flight Time:</b>	0 hours (Total, all aircraft), 0 hours (Total, this make and model)

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Enstrom	<b>Registration:</b>	N518EG
<b>Model/Series:</b>	280 FX	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2003	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	2101
<b>Landing Gear Type:</b>	N/A; Ski	<b>Seats:</b>	
<b>Date/Type of Last Inspection:</b>	January 22, 2016 Annual	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	533 Hrs at time of accident	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	HIO-360 SER
<b>Registered Owner:</b>	BLUE SUN AIR LLC	<b>Rated Power:</b>	205 Horsepower
<b>Operator:</b>	BLUE SUN AIR LLC	<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>	Z98	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	13:53 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	13 knots / 21 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	300°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.01 inches Hg	<b>Temperature/Dew Point:</b>	26°C / 15°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Zeeland, MI (Z98 )	<b>Type of Flight Plan Filed:</b>	
<b>Destination:</b>	Zeeland, MI (Z98 )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Ottawa Executive Z98	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	740 ft msl	<b>Runway Surface Condition:</b>	Unknown
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Minor
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	42.809444,-85.981666(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hatch, Craig
<b>Additional Participating Persons:</b>	Michael Costallos; FAA FSDO; Grand Rapids, MI
<b>Report Date:</b>	January 30, 2017
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB did not travel to the scene of this incident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=93509">https://data.nts.gov/Docket?ProjectID=93509</a>

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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](#).