



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Huron, South Dakota	Accident Number:	CEN16LA275
Date & Time:	July 19, 2016 19:00 Local	Registration:	N229RS
Aircraft:	Meyers 200	Aircraft Damage:	Substantial
Defining Event	Loss of engine power (partial)	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

****This report was modified on August 9, 2024. Please see the public docket for this accident to view the original report.****

The pilot and passenger were on a cross-country personal flight when the pilot noticed oil on the airplane's windscreen. The pilot subsequently landed and had maintenance personnel inspect the airplane. Maintenance personnel noted that the crankshaft seal was leaking and identified several other discrepancies. The pilot chose to have the repairs completed. During the repairs, maintenance personnel noticed that the bolt holding the throttle cable bracket was loose, worn, and not safety wired. The maintenance facility did not have an exact replacement bolt, so the mechanic found a similar bolt, drilled a hole in the bolt head for the safety wire, and installed the bolt. The mechanic reported that he installed the safety wire through the throttle bolt and then down to the mixture control bolt. Photographic stills from the maintenance shop security camera showed ~~the~~ the pilot periodically inspected or observed the work as maintenance personnel finished the repairs on the airplane. The pilot also took a photograph ~~of the throttle linkage area~~ fuel mixture cable and bolt during the repair process, which showed that the safety wire was installed.

After the repairs were completed, the pilot conducted a local test flight. No problems were noted, and the pilot and passenger continued their flight. After an en route fuel stop, the airplane departed and reached 2,300 ft, at which point the engine lost power. Although the engine remained at idle, it would not respond to the pilot's throttle inputs. The pilot subsequently conducted a forced landing to a field.

Following the forced landing, the pilot re-entered the airplane to ensure that the electrical power and fuel ~~and~~ were off and that there was no fire. He then removed the engine cowling and found the throttle linkage "disconnected or broken."

A postcrash examination of the airplane, revealed that the bolt holding the throttle cable bracket was missing, which had allowed the throttle cable to "float," meaning that manipulating the throttle control from the cabin would not govern the engine's throttle position. The examination also revealed that the mixture control bolt was in place. However, the throttle cable bolt and associated safety wire were not found; a bolt that was later found in the engine compartment after the airplane was transported to a salvage yard could not be positively identified as the missing bolt. Thus, based on the available information, it could not be determined how the throttle cable became unsecured.

Probable Cause and Findings

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

The partial loss of engine power due an unsecured throttle cable. ~~Contributing to the unsecured throttle cable was the missing bolt and associated safety wire; t~~The reason for the ~~missing unsecured throttle cable bolt and safety wire~~ could not be determined.

Findings

Aircraft (A1)	Fasteners - Not specified
Not determined (A1)	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute-climb to cruise	Miscellaneous/other
Enroute-climb to cruise	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing

On July 19, 2016, about 1900 central daylight time, a Meyers 200B airplane, N229RS, conducted a forced landing to a field near Huron, South Dakota. The airline transport rated pilot was not injured and passenger received minor injuries. The airplane was substantially damaged during the landing. The airplane was registered to and operated by a private individual, under the provisions of 14 *Code of Federal Regulations* Part 91 as a cross country flight. Visual meteorological conditions prevailed at the time.

The pilot reported the cross-county flight had an en route stop at the Wendover Airport (KENV), Wendover, Utah, on July 17, 2016. During flight, he noted oil on the windshield, so he stopped in Casper, Wyoming, for maintenance personnel to look at the airplane. The pilot reported that maintenance personnel identified several discrepancies; the crankshaft seal was leaking, the propeller bolts did not have enough threads showing through the crankshaft flange, the throttle linkage connecting the landing gear warning horn was loose, and the fuel distributor drain fitting did not have an overboard line.

In addition, maintenance personnel also noted that a bolt holding the throttle cable bracket was loose. The bolt was worn and not safetied to the mixture control bolt. During postaccident interviews, the mechanic stated that, Ssince the maintenance facility did not have an exact replacement bolt, the mechanic selected a bolt, absent that did not have holes in the bolt head intended for a safety wire. He stated that he then drilled a hole in the bolt head for the safety wire, and installed the bolt. The mechanic added that he installed the safety wire through the throttle bolt head, then down to the mixture control bolt. However, the maintenance facility did not subsequently charge the owner for this new bolt or for the work on the throttle cable.

During the maintenance work, the airplane pilot/owner periodically inspected or observed work as noted by maintenance personnel and security camera footage provided by the maintenance facility. After the accident, the pilot provided the Federal Aviation Administration (FAA) inspector a photo of the throttle linkage area fuel mixture cable and bolt, and the photo confirmed that the safety wire was in place during that maintenance.

On July 19, 2016, after maintenance personnel completed work on the airplane, the pilot started the engine and completed an engine run-up. The pilot then took the airplane on a test flight around the traffic pattern, and after landing, the airplane was checked for leaks.

The pilot and passenger then continued their flight, stopping for fuel about 1830 at the Huron Regional Airport, (KHON), Huron, South Dakota. After departing and reaching an altitude of 2,300 ft, the pilot reduced the throttle, and the engine lost power. The engine then continued to run at idle power. The pilot manipulated the throttle; however, the engine only responded with momentary increases in rpms. Subsequently, the pilot conducted a forced landing in a field, and the airplane came to rest upright. Substantial damage was noted to the airplane's fuselage.

Following the forced landing, the pilot added that after a period of time, he re-entered the airplane to ensure the electrical power and fuel and were off and there was no fire. In addition, he removed the engine cowling and found the throttle linkage was "disconnected or broken."

A post-crash examination of the airplane by an FAA inspector, noted that the bolt holding the throttle cable was missing. This was the bolt that the maintenance personnel reportedly installed with the safety wire earlier that day. The absence of the bolt allowed the throttle cable to "float", meaning, manipulating the throttle control from the cabin, would not govern the engine's throttle position. The throttle bolt was not located. The mixture control bolt was in place; however, the safety wire which ran from the mixture control bolt to the throttle bracket bolt was also missing and not recovered.

The airplane was recovered to the salvage yard located at Beegles Aircraft Service, Greeley, Colorado. During an inspection there, Beegles personnel reported that after removing the top cowling, they found a bolt, laying in a bottom area of the cowling. The bolt; however, had manufactured holes in the head ~~and was~~, not new in appearance, ~~and was not the missing bolt~~. It could not be determined whether this was the missing bolt.

A review of FAA records revealed that the airplane's original Continental IO-470 engine was replaced with a Continental IO-550 engine under a field approval. The last annual inspection was completed on May 2, 2016, and the airplane had accumulated 10.44 hours, since the annual inspection.

Occupant Information

Certificate:	Airline transport, Flight instructor	Age:	64
Airplane Rating(s):	Multi-engine sea, Single-engine land, Single-engine sea	Seat Occupied:	Left
Other Aircraft Rating(s):	Glider, Gyroplane, Helicopter	Restraint Used:	3-point
Instrument Rating(s):	Airplane, Helicopter	Second Pilot Present:	[SAFTISSecondPilot Present]
Instructor Rating(s):	Airplane multi-engine, Airplane single-engine, Glider, Gyroplane, Helicopter, Instrument airplane, Instrument helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	November 1, 2015
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 14, 2016
Flight Time:	21100 hours (Total, all aircraft), 50 hours (Total, this make and model), 20000 hours (Pilot In Command, all aircraft), 36 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Meyers	Registration:	N229RS
Model/Series:	200 B	Aircraft Category:	Airplane
Year of Manufacture:	1963	Amateur Built:	[SAFTIAmateurBuilt]
Airworthiness Certificate:	Normal	Serial Number:	280
Landing Gear Type:	Retractable - Tricycle;	Seats:	[SAFTITotalSeats]
Date/Type of Last Inspection:	May 2, 2016 Annual	Certified Max Gross Wt.:	[SAFTICertifiedMaxGrossWt]
Time Since Last Inspection:	[SAFTITimeSinceLastInspectionHrs]	Engines:	Reciprocating
Airframe Total Time:	3487 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	C126 Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-550
Registered Owner:	On file	Rated Power:	[SAFTIEngineRatedPower]
Operator:	On file	Operating Certificate(s) Held:	None
Operator Does Business As:	[SAFTIOperatorDoesBusinessAs]	Operator Designator Code:	[SAFTIOperatorDesignatorCode]

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KHON, ft msl	Distance from Accident Site:	[SAFTIObservationFacilityDistanceNM]
Observation Time:	18:55:00 Local	Direction from Accident Site:	[SAFTIObservationFacilityDirectionDeg]
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	[SAFTIVisualRangeFT]
Wind Speed/Gusts:	15 knots / 21 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.95 inches Hg	Temperature/Dew Point:	31°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Huron, SD (KHON)	Type of Flight Plan Filed:	VFR
Destination:	Minneapolis, MN (KFCM)	Type of Clearance:	None
Departure Time:	[SAFTIDepartureTime]	Type of Airspace:	[SAFTIAirspaceType]

Airport Information

Airport:	[SAFTIAirportNameAirportID]	Runway Surface Type:	[SAFTIRunwaySurfaceType]
Airport Elevation:	ft msl	Runway Surface Condition:	Rough
Runway Used:	[SAFTIRunwayID]	IFR Approach:	None
Runway Length/Width:	[SAFTIRunwayLengthFTRunwayWidthFT]	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	[SAFTIInjuryGroundTotal]	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	44.376945°, -98.197219° estimated

[SAFTISafetyMessage]

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	William Howell; FAA FSDO; Rapid City, SD
Original Publish Date:	September 6, 2017
Investigation Class:	Class [SAFTIInvestigationClassNum]
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=93645

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](#).