National Transportation Safety Board Washington, DC 20594

Brief of Accident

Adopted 07/18/2013

CEN11LA182 File No. 31294	02/12/2011	Trepton MI	Aircraft Reg No. N6622G		Time (Local): 11:50 EST	
Make/Model Engine Make/Model Aircraft Damage Number of Engines Operating Certificate(s) Type of Flight Operation Reg. Flight Conducted Under	Cessna/150L Lycoming / O-360-A4A Substantial 1 None Banner Tow Part 91: General Aviation	Henton , wi	Crew Pass	Fatal 0 0	Serious 0 0	Minor/None 1 0
Last Depart. Point Destination Airport Proximity	: Troy, MI : Grosse IIe, MI : Off Airport/Airstrip			Conditie Weath Basi Low Wind Temper Precip/O	on of Light: Da er Info Src: W c Weather: Vi est Ceiling: Na Visibility: 10 Dir/Speed: 27 rature (°C): -1 bscuration: Na	ay eather Observation Facility sual Conditions one 0.00 SM 70 / 015 kts o Obscuration; No Precipitation
Pilot-in-Command Age: 39 Certificate(s)/Rating(s) Flight Instructor; Commercial; Multi-engine Land; Single-engine Land; Glider Instrument Ratings Airplane		Flight Time (Hours) Total All Aircraft: 2200 Last 90 Days: 20 Total Make/Model: 800 Total Instrument Time: UnK/Nr				

*** Note: NTSB investigators may not have traveled in support of this investigation and used data provided by various sources to prepare this aircraft accident report. ***

The pilot had been conducting a banner towing operation for about 55 minutes when he felt a heavy vibration and heard a "loud bang." The airplane's engine subsequently lost power, and the pilot executed a forced landing. During the forced landing, the nose landing gear collapsed when it contacted "heavy snow and unimproved terrain," resulting in substantial damage to the firewall. A postaccident examination of the engine revealed that one of the connecting rods had separated from the crankshaft. Metallurgical examination determined that one of the two connecting rod bolts had failed in overstress. The second connecting rod bolt was deformed but otherwise intact; its associated nut had separated from the bolt and was undamaged. The lack of damage to one of the connecting rod nuts in conjunction with the overstress failure of the opposing bolt was consistent with a loss of installation torque on the intact nut. The engine had accumulated 2,836 hours since overhaul. The operator did not supply engine overhaul maintenance records but provided a statement indicating that the installed bolts and nuts were new at the engine cylinder's last maintenance (an engine manufacturer service bulletin instructs that connecting rod bolts and nuts be replaced any time they are removed). However, due to the lack of maintenance records and the number of hours since last overhaul, the investigation could not conclusively attribute the loss of preload torque to the overhaul operation. Updated at Jul 18 2013 11:15AM

CEN11LA182				
File No. 31294	02/12/2011	Trenton ,MI	Aircraft Reg No. N6622G	Time (Local): 11:50 EST

OCCURRENCES

Prior to flight - Aircraft maintenance event Maneuvering - Loss of engine power (total) Emergency descent - Off-field or emergency landing

FINDINGS

Aircraft-Aircraft power plant-Engine (reciprocating)-Recip eng cyl section-Failure - C Aircraft-Aircraft handling/service-Maintenance/inspections-(general)-Incorrect service/maintenance

Findings Legend: (C) = Cause, (F) = Factor

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

The loss of preload torque on a connecting rod nut and bolt, which precipitated a separation of the connecting rod from the engine's crankshaft and resulted in the total loss of engine power.