

RECORD OF ☒ VISIT ☐ CONFERENCE OR ☐ TELEPHONE CALL		TIME 7:30 AM	DATE 06/12/2017
NAME (S) OF PERSON (S) CONTACTED OR IN CONFERENCE AND LOCATION Mark F. Burnett PMI / AEA-11, Matthew Cady ASI AEA-11		ROUTING	
		SYMBOL	INITIALS
Bellport Country Club Bellport NY			
SUBJECT Accident investigation N13306 a CE172M s/n 1726254, reported engine			
shutdown in flight and landed off airport on a golf course fairway			
DIGEST *Received call from AEA - ROC at 0645 EDT reporting that an aircraft had landed on the			
Bellport Country Club Gold Course and that there were no reported injuries. Suffolk County			
Police had responded and would wait on site with pilot and aircraft. Proceeded from AEA-11			
office Farmingdale NY to the Bellport Country club with ASI Cady arriving on site at			
approximately 0730 EDT. Found aircraft CE172M registration N13306 at location 40 44 46 N /			
72 57 16W The aircraft has substantially damaged right wing leading and trailing edges			
due to striking a tree during landing roll out on the golf course fairway. Damage also			
noted to fuselage wing attachment area and rear and side windows on the right side of the			
aircraft. Panels on the inside the aircraft headliner both left and right sides have been			
distorted indicating fuselage has been twisted due to impacting the tree with Right wing.			
Pilot interviewed he indicates he had started the day at 23N (Bayport NY) flown to HWV			
(Brookhaven NY) to purchase fuel and was on his way back to 23N when during normal cruise			
the engine gave a couple of "POPS" and then shut down the pilot saw the golf course near by			
and elected to land on the fairway as his best alternative. During the process of landing			
the pilot states he made one attempt to re-start the engine which was unsuccessful.			
***** see next page*****			
CONCLUSION, ACTION TAKEN, OR REQUIRED Further investigation needed to determine cause of engine shutdown in flight.			
DATE 06/13/2017	TITLE Mark F. Burnett	SIGNATURE	

DIGEST (CONT)

***** Continued from Prior page*****

Performed aircraft fuel sump sample from Left wing of aircraft. Since pilot reported just having purchased fuel. Traveled from accident site to HWV (Brookhaven Airport) approx. 20 minutes away to check fuel storage and perform a fuel sample inspection at Northeast Air Park fuel provider used by the pilot. There were no issues noted with fuel either in the aircraft or at the fuel storage and dispensing pumps.

Returned back to accident site, meet with Mid Island Air Service technicians whom had been sent to recover the aircraft. All fuel was drained from both wings, and both wings were to be removed in order to reposition the aircraft to Mid Island Service ISP facility where the aircraft was to remain secured until further FAA and or NTSB investigation.

Left accident site and returned to AEA-11 office at 1045 EDT.

RECORD OF ☒ VISIT ☐ CONFERENCE OR ☐ TELEPHONE CALL		TIME 10:00 AM	DATE 06/13/2017
NAME (S) OF PERSON (S) CONTACTED OR IN CONFERENCE AND LOCATION Mark F. Burnett FAA AEA-11 / PMI, Matthew Cady AEA-11 ASI, John Coluccio		ROUTING	
		SYMBOL	INITIALS
Director of Maintenance Mid Island Air Service			
SUBJECT CE172M s/n 17262654 registration N13306 cause of engine shutdown in flight			
ACTT 4746.2 aircraft Tach 20131.7 Engine TT 4746.2 Engine TSMO 409.2			
DIGEST Arrived at Mid Island Air Services facility Islip MacArthur Airport (KISP), Mid Island Air Services technicians had performed the aircraft recovery two day prior on Monday June 12. Assisted Mid Island Director of Maintenance in disconnecting fuel line from aircraft engine carburetor and connecting a fuel supply line directly from a gas can to the engine. three attempts were made to start the engine all were unsuccessful, at which point upper spark plug wires were removed and grounded out to the engine in an effort to see if magnetos were creating any spark to the ground none was noted when the engine was turned through by hand or when engine was turned over with the starter motor. Removed the Left magneto from the back of the engine drive pad and hand turned engine through, no rotation of the Left magneto drive gear was seen. Removed the Right magneto and engine turned through also produced no magneto drive gear rotation. Upon further inspection with a mirror the crankshaft drive gear is seen backed away from the aft end of the crankshaft and is also not rotating when the engine is turned through. Without further engine disassembly it is not possible to see if the crankshaft drive gear retaining bolt has backed out or if the bolt head has failed, but at this point the cause of the engine shutdown in flight has been determined. *****see next page*****			
CONCLUSION, ACTION TAKEN, OR REQUIRED Cause of the engine shutdown in flight was lack of ignition caused by both magnetos not having been drive by the engine, due to a backed off crankshaft drive gear. Due to substantial Right wing damage and wing mount structural damage it is expected this aircraft and engine will be considered a total loss by the owners Insurance Co. The engine will most likely not be torn down further unless requested by NTSB.			
DATE 06/14/2017	TITLE Mark F. Burnett	SIGNATURE	

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Note: the Crankshaft gear in question Part # 61155 and the crankshaft had both both been inspected and repaired to overhauled condition during the last engine overhaul performed 04/09/2011. Inspection requirements of Lycoming MSB 475C had been complied with on both the gear and the crankshaft, However these parts were shipped to the technician performing the overhaul separately and the final portion of MSB 475C paragraph 6 which is retaining bolt replacement and gear installation is not recorded as being completed at the time of overhaul in 2011.

The associated FAA AD 2004-10-14 only becomes applicable to this engine if it had experienced a propeller strike which maintenance records do not indicate and the aircraft owner also claims to never have had a propeller strike with this engine. Confirmed that the propeller installed s/n 725854 is the same one installed since 11/29/1976 and there is no record of an propeller major repairs or overhauls.

RECORD OF ☒ VISIT ☐ CONFERENCE OR ☐ TELEPHONE CALL		TIME 9:00 AM	DATE 07/11/2017
NAME (S) OF PERSON (S) CONTACTED OR IN CONFERENCE AND LOCATION Mark Burnett (ASI AEA-11), Thomas McDougal (ASI-AEA-11), John Coluccio		ROUTING	
		SYMBOL	INITIALS
Director of Maintenance Mid Island Air Service, Arthur Johansen & Robert			
Johansen (co-owners of N13306)			
SUBJECT Disassembly of Engine model O-320-E2D serial number L36031-27A aft			
accessory drive area only			
DIGEST Arrived at the Mid Island facility at 0900 removed both left and right magnetos which had been previously removed and reinstalled during earlier investigation. removed engine oil filter and strained oil, cut open oil filter and examined filter element, no metal or debris noted in the paper filter element. Removed engine rear accessory drive cover. Upon removal of the rear accessory drive cover noted Crankshaft drive gear p/n 61155 retention bolt has backed out approximately 1/4 inch but bolt does still have some thread engagement into the crankshaft. removed both left and right idler gears, no abnormal wear or damage was noted on either of the idler gears. Removed crankshaft drive gear retention bolt by hand, found lock tab in place and appears to have been properly bent to lock upon the bolt flat surface. Removed the crankshaft drive gear by hand, noted the STD-1065 Dowel pin has sheared flush with the mating surface of the crankshaft, both halves of the dowel pin remain intact. Dowel pin hole on the drive gear does appear to be worn and the remaining piece of dowel pin can be moved slightly from side to side within its hole. Measured diameter of crankshaft gear pilot flange (measures 2.126 in unworn area which is acceptable per Lycoming s/b 475C), wear groove is noted on most forward portion of the pilot flange caused by spinning within the crankshaft counterbore. *****continued next page **			
CONCLUSION, ACTION TAKEN, OR REQUIRED Provided results of engine disassembly to NTSB investigator, FAA NYACO and FAA AEG.			
DATE 07/11/2017	TITLE Mark F. Burnett AEA-11 FSDO ASI	SIGNATURE	

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Measured worn portion of crankshaft drive gear pilot flange (measures 2.124 which is below minimum allowable dimension per s/b 475C.

Measured crankshaft counterbore diameter at the rear of the crankshaft (measures 2.124 which is within the allowable dimension per s/b 475C.

The dowel pin is confirmed to be a part # STD-1065 by measurement of the remaining portions of the dowel pin found in the drive gear (measures at various spots 0.245, 0.241, 0.240, 0.234 due to noted wear within the drive gear) These measurements all are below in minimum diameter per s/b 475C .

The crankshaft drive gear retention bolt does NOT have head markings consistent with a STD-2246 bolt which is the part number for the bolt required per s/b 475C table 2 (see figure 6 for head marking requirement). The bolt found does have markings that indicate it is a SL grade 8 bolt. Although this maybe in incorrect bolt for this installation no thread damage was apparent on either the bolt or the threaded portion of the aft crankshaft counterbore.

Since the lock tab was in place and there is no marking or damage from the bolt or gear spinning on the lock tab which would occur if the bolt had been slowly backing off. It is my conclusion that the crankshaft drive gear dowel pin (P/N STD 1065) failed first causing the drive gear to spin within the counterbore of the crankshaft, this spinning in turn loosened the drive gear retention bolt as the gear turned.

Engine shutdown was very soon if not immediately after the dowel pin failure, when the crankshaft drive gear stopped turning in sync with the crankshaft, and stopped driving both idler gears which in turn drive both left and right magnetos.