



NATIONAL TRANSPORTATION SAFETY BOARD

Western Pacific Regional Office

Gardena, California

Exam Report

October 11, 2011

Pleasant Grove, CA

This report contains 11 embedded photographs

Accident

NTSB Accident Number: WPR11FA230
IIC: T. Cornejo
Aircraft: N121J - Lancair Legacy

Summary

On May 18, 2011, about 1545 Pacific daylight time, an experimental amateur built Cameron Lancair Legacy airplane, N121J, impacted a snow-covered mountain under unknown circumstances near Pioneer, California. The pilot/owner operated the airplane under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. The pilot, the sole occupant, was fatally injured. The airplane sustained substantial damage during the accident sequence. Visual meteorological conditions (VMC) prevailed for the flight that departed Minden, Nevada, at an undetermined time. No flight plan had been filed. The flight was destined for Tracy, California.

The flight was the subject of a family concerned alert notification (ALNOT), when the pilot did not arrive at his destination. Amador County Sheriff's Department was notified and commenced a search in the area of Bear River Reservoir, and located the airplane at 1545 on May 20, 2011. According to a Sergeant for Amador County, the accident site was situated in mountainous terrain at the 6,500 foot level in 10 feet of snow.



Photo 1 – Picture of Accident Airplane from www.airport-data.com

Examination

The exam commenced on the morning of October 12, 2011 at Plain Parts, Pleasant Grove, CA. The airplane was a 2004 experimental amateur built Cameron Lancair Legacy, and engine, a CMI IO-550-EXPERIMENTAL, serial number EXP687922, were transported from the accident site and was in storage at Plain Parts. The wreckage consisted of 8 large-white canvas bags.



Photo 2 – Airplane Wreckage (NTSB)

Airframe

The airframe was heavily fragmented and impact related damage was noted throughout. Due to the heavy fragmentation, pieces of flight control surfaces were located and accounted for. All of the cockpit components and instrumentation were severely fragmented and crushed.



Photo 3 – Airplane Layout Examination (NTSB)

Photo 4 – Instrument Panel (NTSB)

Engine

The engine was separated from the bags, and placed on a hoist to facilitate the exam and disassembly.



Photo 5 – Engine (CMI)

The engine separated from the airframe and had extensive impact damage. The propeller hub and partial blades remained attached to the crankshaft propeller flange.



Photo 6 – Front View of Engine (CMI)



Photo 7 – Left Side View of Engine (CMI)

The accessory section of the crankcase, oil sump and attachment flange, upper crankshaft surfaces and cylinders 2, 4 and 6 separated from the engine and sections were found with the wreckage debris. The crankshaft was visible and all connecting rods remained intact and 2, 4, and 6 were bent in the forward direction. Main bearing journals were visible and no thermal discoloration was noted. The camshaft separated forward of the number 4 cam lobes.



Photo 8 – Top View of Engine (CMI)



Photo 9 – Right Side View of Engine (CMI)

The remainder of the camshaft was found in the wreckage debris. The induction and exhaust assemblies were found with the wreckage debris and had impact damage. The spark plugs were removed from cylinders 1, 2, 4 and 5. Cylinder 3 spark plugs could not be removed from the cylinder due to impact damage. The no. 6 cylinder head had impact damage and separated from the cylinder barrel. The spark plugs for cylinder 6 were visible and undamaged. The spark plugs had (Worn out-Normal) wear conditions when compared to a Champion AV-27 comparison chart.



Photo 10 – Spark Plugs (CMI)

One magneto was found in the wreckage debris. The magneto impulse coupling engaged and spark was obtained from the damaged leads and distributor cap. The internal coil of the other magneto was found with the main wreckage.



Photo 11 – Magnetos (CMI)

The no. 2, 4, and 6 cylinders were found in the wreckage debris and the combustion chambers had light grey deposits and the valve heads had no abnormal thermal discoloration. The no. 1, 2, and 4 cylinder overhead components were lubricated and showed normal operating signatures.

The remaining overhead components had impact damage. The engine had an experimental supercharger assembly. The supercharger compressor was not found during the inspection. The drive pulley and support brackets were found in several sections. The oil pump, starter adapter, crankshaft gear cluster and idler gear remained attached to the separated accessory section. The oil pump was disassembled and the gears and cavity had light scratches from hard particle passage. The cavity contained pump gear impact marks. The engine accessory gears were undamaged and had a light residue of oil. The fuel pump and manifold valve was found in the wreckage debris and had impact damage. The fuel pump was disassembled and no anomalies were noted. The fuel manifold valve was disassembled. The inlet screen was damaged and a wood fragments were found in the cavity. The propeller governor, starter and alternator had impact damage and were found in the wreckage debris. The propeller governor housing was found in two sections. The starter housing had impact damage and the driveshaft could be rotated by hand. The alternator motor and drive separated from the housing.