



MEMORANDUM FOR RECORD

Brian C. Rayner
Senior Air Safety Investigator
Eastern Region Aviation

March 26, 2018

Subject: ERA17LA044 Miami, FL
Name: Thomas Kuhns – Federal Aviation Administration

Mr. Kuhns participated in the on-scene portion of the investigation, as well as off-site examination of the engine and the airplane's maintenance records. He provided information through email and telephone calls, and the following was excerpted from a long email chain.

The crankcase halves were released to the operator before the metallurgical examination of the area surrounding the weld repairs could be completed.

11/17/2016 - The engine was removed and disassembled by the mechanics who overhauled and installed the engine. They are employed by C&G Aircraft Maintenance who performs all of the aircraft maintenance for Dean International Flight School. Once disassembled, it was noted that the case was cracked in several locations and the crankshaft was broken at the #3 rod journal with evidence of severe heat. The #3 rod end cap was found at the bottom of the engine as a balled up molten piece of metal.

11/22/2016 - The remaining 1, 2 and 4 rods were removed from the crankshaft. Part numbers on the crankshaft, bearings and rods were all indicating a standard sized configuration. Additionally, physical measurements were taken to confirm that. Due to the fact that only the #3 rod showed evidence of extreme heat, it is suspected that the oil passage way within the crankshaft was restricted or blocked to that #3 crankshaft rod pin. The other engine damage and oil loss may have been caused by the broken crankshaft and #3 rod bouncing around.

11/23/2016 - A review of the engine records indicating that his engine had 246.5 hours accumulated since overhaul. The crankshaft, rods and bearings were replaced new at the time of overhaul. These findings were forwarded to Mike Caldera, Manager Air Safety, Lycoming and Brian Rayner, NTSB.

12/01/2016 - Per phone conversation with Mike Caldera (Lycoming) and Brian Rayner (NTSB), primary failure was excessive heat at the #3 rod journal; however, due to numerous variables, it is not feasible to continue with the investigation to try and determine an exact cause. The accident investigation has concluded and it is acceptable to release the aircraft and engine back to the owner.