

Engine Exam C85-12, sn 23193-6-12

08/20-21/2019

Continental Motors, Mobile, AL



Summary & Factual Information: At the time of the accident, the engine total time was calculated to be 3,556.0 hours and the time since overhaul was 1,933.8 hours. The last annual inspection took place on March 22, 2019. The engine was uncrated and examined. The No. 1 connecting rod end was separated from its crankshaft journal and the rod end exhibited discoloration consistent with lubrication distress. Liberated sections of the No. 1 connecting rod bearing were found in the oil sump and those sections exhibited discoloration consistent with lubrication distress. The oil transfer tube orifice for the No. 1 connecting rod bearing was smeared over with migrated connecting rod journal material. The other oil transfer tube orifices were checked for blockages and no blockages were found. The oil galleys were checked for blockages and no blockages were found. The remaining three connecting rods remained attached to the crankshaft. However, the connecting rod ends, and rod bearings all exhibited discoloration consistent with lubrication distress. Scoring consistent with hard particle passage was observed within the oil pump housing. The camshaft was fractured in the area abeam the separated connecting rod and the camshaft fractures surfaces appeared grainy and dull consistent with overload. The filter, hand dated March 22, 2019, was cut open and had one spot of dark colored debris and no other debris found within the filter pleats. The oil suction pickup tube that extends into the sump was disassembled and it did not contain any debris. The migrated and smeared metal was drilled through to see if any debris was present. Only metallic particles were present that were attracted by a magnet. The cause of the rod end separation is consistent with oil starvation heating/discoloration/deformation of the rod end. The reason for the oil starvation could not be determined.

I can attest that the above summary is correct to the best of my knowledge:

Edward F. Malinowski
National Transportation Safety Board
Air Safety Investigator