



RECORD OF EXAMINATION

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NTSB Accident Number: CEN15LA276

Narrative:

The engine was removed and shipped to Pratt & Whitney Canada where a post-accident examination of the engine was performed under the supervision of a Transportation Safety Board of Canada Senior Investigator. The examination revealed that the engine displayed minimal impact damage, with light impact deformation of the exhaust duct, and water immersion damage.

Circumferential contact signatures were displayed by the compressor turbine, first stage power turbine vane ring, first stage power turbine shroud, first stage power turbine, second stage power turbine vane ring and interstage abradable air seal, second stage power turbine shroud, and second stage power turbine due to their making contact under impact loads and external housing deformation. The interstage abradable air seal displayed more severe circumferential rubbing and scoring, with frictional heat discoloration and material smearing, due to contact with the air seal rotor.

Post-accident functional testing of the high pressure fuel pump, fuel control unit, compressor bleed valve, fuel heater, and fuel nozzles, and disassembly inspection of the compressor bleed valve, showed no conditions that would have precluded normal operation prior to impact. None of the engine components displayed any indications of any pre-impact anomalies or distress. The bleed valve displayed water immersion damage and no apparent impact damage. The normal lock wire with lead seal to the secondary orifice plug was in place. During installation of the unit for functional testing it was noted that the secondary exit orifice plug showed no appreciable torque. Functional testing showed leakage at the piston damper pins, however the bleed valve closing point was normal. Disassembly and inspection showed the condition of all components to be satisfactory.

The unit showed water immersion damage and no apparent impact damage. Functional testing of the unit was satisfactory with minor variations not affecting normal operation including full fuel flow and normal response to power lever inputs.