



EASA Safety Information Bulletin

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Subject: LPT Disk 1 failure on CFM56-5-A1 engine

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Description: On 30 June 2009, a CFM56-5A engine experienced a stall during take-off, EGT over limit, high vibrations and N1 spool down to zero (IFSD). Air turn back was completed without further incident. Borescope inspection revealed LPT damage with several blades broken off. The engine had a time since new of 39 808 hours/30 980 cycles and time since shop visit was 21 hours/15 cycles.

Disassembly revealed the LPT stage 1 disk fractured with one full radial separation. The disk remained in one piece, expanded but fully contained. Additionally, the disk displayed evidence indicating an over-heat condition.

Preliminary examination of the LPT and HPT modules has revealed rotor cavities overheat suggesting cooling deficiency, by hot gas ingestion into the turbine rotor air cooling system (LPT rotor forward cavity, and HPT disk rear cavity). The cause of this overheat condition has not yet been identified.

EASA and FAA are actively involved in the investigation, with full support of the relevant design, production and maintenance organisations, as well as the operator. This investigation will determine whether any recommendations or mandatory actions are necessary

Applicability: CFM56-5-A1 engines

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