Continuing Airworthiness Notice 85-011

Continental CD-135 (TAE 125-01) and CD-155 (TAE 125-02) Engines - Piston Cracking

06 September 2023

Issued by the Civil Aviation Authority of New Zealand in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains information and guidance about an airworthiness concern that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91.

CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

Applicability:

All Continental CD-135 and CD-155 engines.

These engines are also known as TAE 125-01 and TAE 125-02.

Purpose:

The CAA has received several reports from operators of Continental CD-135 and CD-155 engines experiencing power loss in flight with associated engine vibrations and a loss of oil pressure.

The intent of this CAN is to raise awareness of these occurrences and draw attention to the possible early warning signs of engine failure.

Background:

The CAA is aware of six Continental CD-135/CD-155 engines which have been removed from service due to a loss of performance and compression in at least one cylinder.

In every case, further investigation has found a crack in the crown area of the piston (Refer to the photo below of a typical cracked piston).

Affected engines have predominantly been used for flight training operations, and failures have occurred at various times throughout the lives of the engines, ranging from 950 hours TSN to 2160 hours TSN.

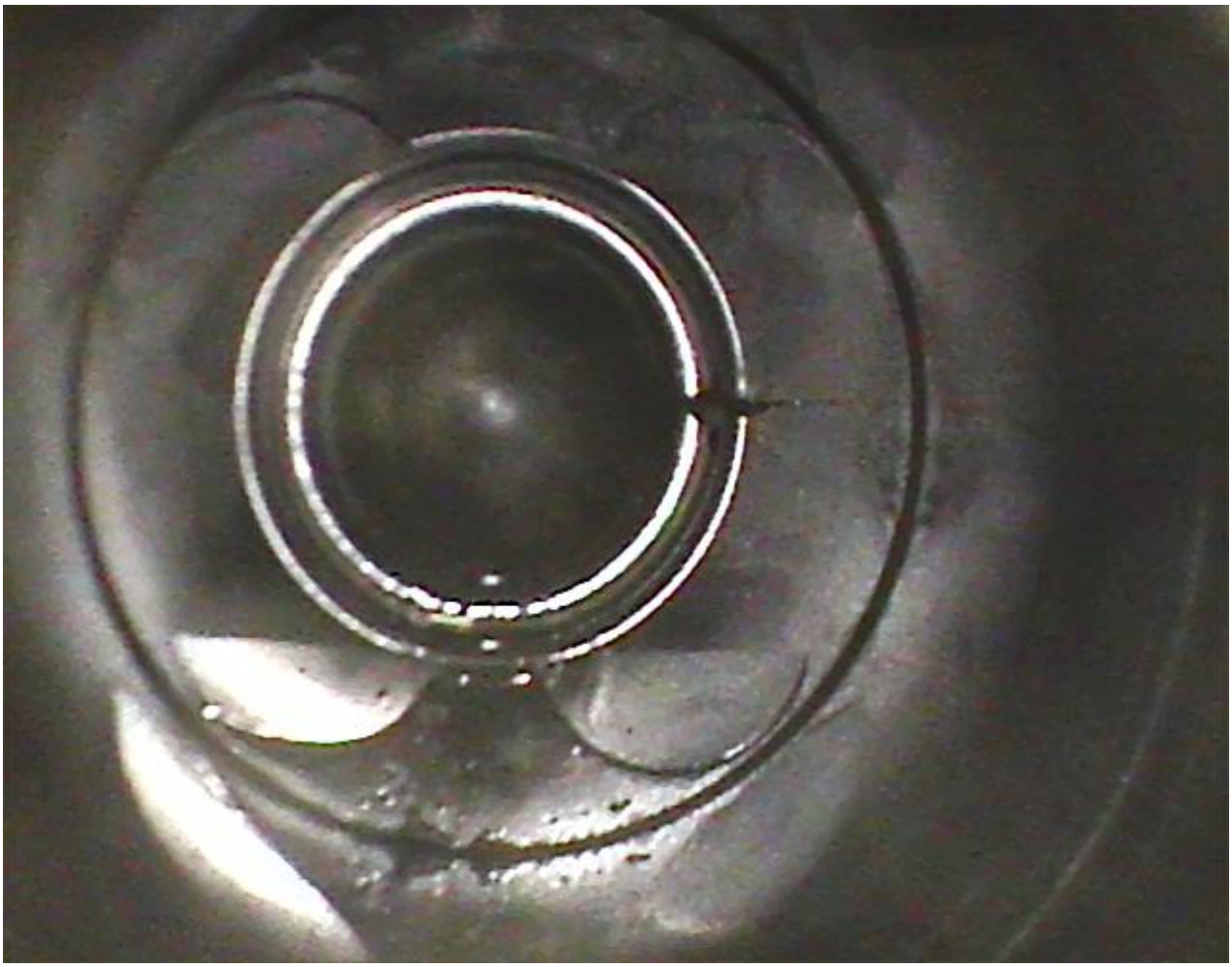
Operator reports state that the engines perform as expected in flight, up to the point at which they begin to experience vibration, a loss of oil pressure and engine performance.

Early indications of a problem with the engine may be a sudden increase in oil consumption, which may also be accompanied by evidence of oil in or around the engine cowls.

The engine manufacturer is investigating these findings to identify the root cause.

Recommendation

Pilots, operators, and maintenance providers should take care when checking engine oil levels on aircraft fitted with an affected engine. Any oil uplift should be discussed with the operator's maintenance provider and recorded for reference in the appropriate aircraft records. The appearance of engine oil on the engine cowls, or any apparent oil leak, or smoke from the engine exhaust should also be discussed with the operator's maintenance provider.



Typical crack found in a piston using borescope equipment.