AIRWORTHINESS BULLETIN

Precision Airmotive RSA-10AD1 Fuel Control Unit – Possible Fuel Flow Restriction

AWB 73-007 **Issue** : 1
Date : 21 July 2014

1. Effectivity

Precision Airmotive RSA-10AD1 Fuel Control Unit (FCU) installed on, but not limited to Robinson R44 II helicopters fitted with a Lycoming IO-540 engine.

2. Purpose

To advise aircraft owners, operators and maintainers of a possible defect with Precision Airmotive RSA-10AD1 Fuel Injection System which could result in restricted fuel flow and subsequent loss of engine power.

3. Background

This AWB is prompted by an incident reported to the New Zealand Civil Aviation Authority (NZ CAA) of a loss of engine power on a Robinson R44 II which resulted in the pilot carrying out a successful auto-rotation landing. A subsequent examination of the FCU revealed material disintegration from washer P/N 367757 which was ingested through the fuel system and resulted in a loss of engine power.

The material found was similar in appearance to Polytetrafluoroethylene (PTFE) thread-tape. A laboratory analysis determined that the composition of the material as PTFE, a thermoplastic polymer associated with washer P/N 367757. See figure 1.

This washer is fitted to the fuel cylinder injector in the FCU and is located downstream of the internal fuel strainer. Hence, any liberated washer material may be carried through the FCU and to the fuel nozzles without further filtration.

Since this incident, the NZ CAA has been advised of a further 19 defects associated with the FCU washer. As a result of these reports, the NZ CAA has released Emergency AD DCA/MA/17 to require operators to remove the FCU from the aircraft and inspect the idle valve shaft thrust washer P/N 367757 for defects.

Reports have been received against original manufacturer parts and PMA parts.

Precision Airmotive Service Bulletin PRS-109 dated 16 July 2014 provides inspection requirements at 500hrs intervals as a direct action against the issues found in New Zealand. In addition, Service Bulletin PRS-108 dated 26 January 2012 advises of the potential adverse consequences which may result from the use of unacceptable cleaning fluids on diaphragms, o-rings and other non-metallic components in RS and RSA series fuel injection systems manufactured by Precision Airmotive or Bendix.

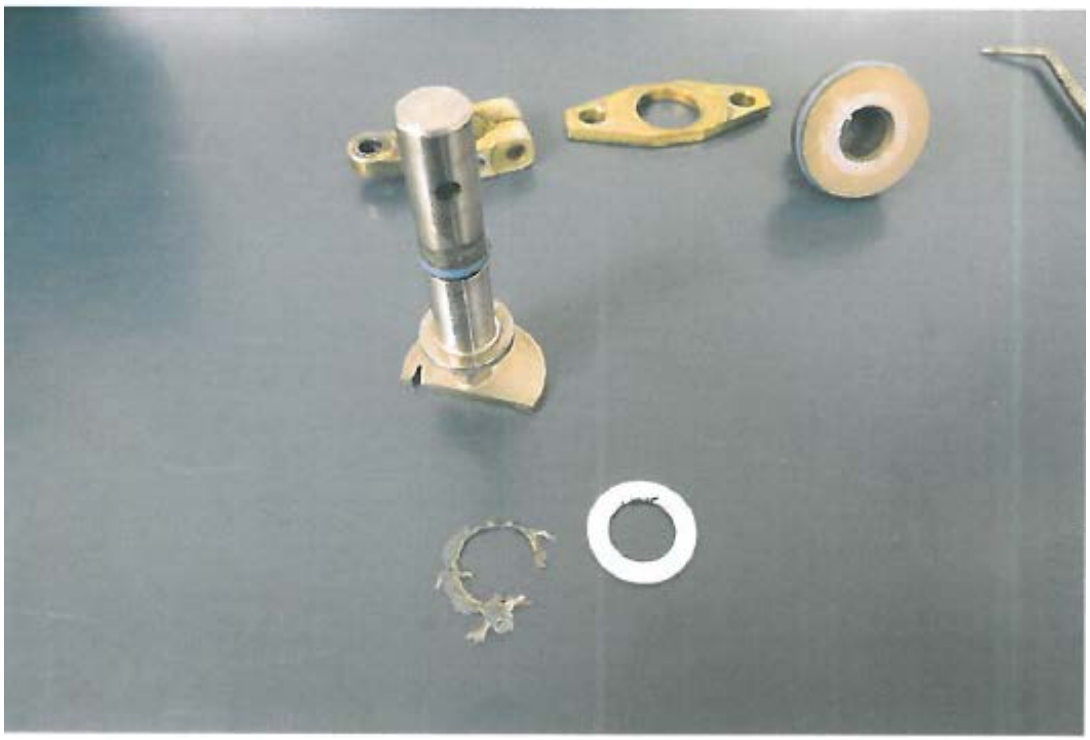

Figure 1 - Defective washer p/n 367757 with example of liberated material

4. Recommendations

Incorporate the inspection requirements of Precision Airmotive Service Bulletin PRS-109 into the elected R44 maintenance program. Note the corrective actions in section C.ii) of the document If the throttle control movement becomes excessively stiff at any time between the inspections.

To assist CASA and The NZ CAA with this investigation please report any incidents or defects found with Precision RSA-10AD1 FCUs to CASA through the Service Difficulty Reporting system.

Please provide as much engineering detail as possible, including the colour of the data plate as this distinguishes the repair status of the unit as follows:

Black – Original fitment

Blue – Factory Overhaul

Yellow – Field Repair

5. References

a. NZ CAA Airworthiness Directive DCA/MA/17

https://www.caa.govt.nz/Airworthiness_Directives/Emergency_Airworthiness_Directives/DCA-MA-17.pdf

b. NZ CAA Continuing Airworthiness Notice – 73-003

http://www.caa.govt.nz/Airworthiness_Directives/Continuing_Airworthiness_Notices/CAN_73-003.pdf

c. Precision Airmotive Service Bulletins PRS-108 & PRS-109

http://www.precisionairmotive.com/servpubs.htm

d. CASA Service Difficulty Reporting system

http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_90818

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6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

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