AWB 73-1 Issue 1, Fuel Vaporisation

Fuel Vaporisation

AWB 73-1 Issue 1, 30 March 2004

Effectivity

To all owners, operators and maintainers of Cessna C172R, C172S and Piper Seneca V model aircraft

Background

CASA is currently responding to 12 Australian industry reports received since February 2003 of engine rough running and stopping in flight events in Cessna C172R model aircraft. In addition to those 12 reports, there is anecdotal evidence of Piper Seneca V model aircraft experiencing similar engine abnormal operation events. A consistent factor in all of the reports is high ambient temperatures.

The CASA investigation of the reports suggests a possible cause could be fuel vaporization. The Precision Airmotive Corporation (Bendix) RSA fuel injection system in these aircraft is susceptible to fuel vaporization when operated at low engine power settings in high ambient temperatures. The majority of the reports involve aircraft conducting airline ab-initio flying training in high ambient temperatures.

The aircraft, engine and fuel injection system manufacturers have issued a number of service instructions addressing similar events that have occurred in the world fleet. The FAA, and CASA, has mandated a number of those instructions. However, the 12 Australian industry reports suggest the engine fuel system modifications introduced by those instructions have not proven fully effective. As of this date, CASA is not able to determine an action to effectively address the reported engine rough running and stopping in flight events in new model Cessna C172 and Piper Seneca V model aircraft.

Recommendations

Until a full understanding of the prime cause of the abnormal engine operation reports is obtained, CASA recommends incorporation of the following service instructions:

New model Cessna Singles

- Cessna Single Engine Service Bulletin Number SB03-71-01
- Textron Lycoming Service Instruction Number 1489B

Textron Lycoming Service Instruction Number 1502A
Textron Lycoming Service Instruction Number 1497
Textron Lycoming Service Instruction Number 1498
Precision Airmotive Service Information Letter Number RS-40
Precision Airmotive Service Information Letter Number RS-71

Piper Seneca V

Piper Service Letter Number 1036 "Instruction 2"
Precision Airmotive Service Information Letter Number RS-60

Service Difficulty Report System

Abnormal engine operation in new model Cessna singles and Piper Seneca V model aircraft should be reported to CASA on the Service Difficulty Reporting program available on the CASA website www.casa.gov.au. In submitting such defect reports, please include all available information. Information of importance is:

Aircraft registration and operator name
Aircraft make, model and time since new
Engine make, model and time since new or overhaul
Incorporation of service instructions detailed in this bulletin
Ambient temperature at the time of the event
Phase of flight
Type of operation
Description of event

Enquiries

Enquiries with regard to the content of Airworthiness Bulletins should be made via the direct link e-mail address included on the Airworthiness Bulletin web site, AirworthinessBulletin@casa.gov.au

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