



AEROSPACE RECOMMENDED PRACTICE

ARP4014™**REV. A**

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Superseding ARP4014

Aircraft Turbine Engine Pneumatic Component Contaminated Air Endurance Test

RATIONALE

This revision was published to update the document references, test schematic diagram and to better align the test procedure with current best practices.

ARP4014A has been reaffirmed to comply with the SAE Five-Year Review policy.

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1. SCOPE

This SAE Aerospace Recommended Practice (ARP) describes a method of conducting an endurance test using contaminated air when the applicable specification requires non-recirculation of the contaminants. The objective of the test is to determine the resistance of the engine mounted components to wear or damage caused by the contaminated air.

The method described herein calls for non-recirculation of the contaminants and is intended to provide a uniform distribution of the contaminant at the inlet to the Unit Under Test (UUT).

The UUT may require the use of a hydraulic fluid for actuation of components within the test unit. Contamination of the test hydraulic fluid is not part of this recommended practice. If contaminated hydraulic fluid is required by the applicable test specification, refer to MAP749.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

MAP749 Aircraft Turbine Engine Fuel System Component Endurance Test Procedure (Room Temperature Contaminated Fuel)

2.2 Military Specifications

Copies of these documents are available online at <http://quicksearch.dla.mil>.

JSSG-2007 Department of Defense Joint Service Guide Specification, Engines, Aircraft, Turbine

3. TEST SETUP

The following subsections describe the recommended test setup. Reference Figure 1.

3.1 Air Contamination

The air contamination requirements should be as specified in the applicable specification. Typical military requirements for pneumatic components are given in JSSG-2007.

3.2 Test Actuation Fluid

Actuation Fluid, if required, should conform to the applicable specification. The engine primary fuel is recommended, however, if the test facility cannot be safely operated using fuel at high temperature, then the use of a silicone fluid having a specific gravity or viscosity, or both, similar to the engine fluid is recommended.

3.3 Test Actuation Fluid Temperature

Control is required as necessary to keep the UUT within its operational limits. If the UUT's operational limits are subject to condensation of water or other material such as oil decomposition products or refrigerants, then care should be taken to control the phase distribution.