



AEROSPACE INFORMATION REPORT

AIR5317™

REV. A

Issued 2006-03
Revised 2018-04

Superseding AIR5317

(R) A Guide to APU Health Management

RATIONALE

This SAE Aerospace Information Report (AIR) provides insight and guidance into the best practices for implementing a health management capability for Auxiliary Power Units (APU) installed on commercial or military aircraft. With the considerable advancement of prognostics and health management (PHM) tools and capabilities in the past 10 years, operators expect that the value proposition for such a system can easily be demonstrated for APUs. This AIR aims to assist operators in building the PHM capability such that the value can be achieved.

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1. SCOPE

AIR5317 establishes the foundation for developing a successful APU health management capability for any commercial or military operator, flying fixed wing aircraft or rotorcraft. This AIR provides guidance for demonstrating business value through improved dispatch reliability, fewer service interruptions, and lower maintenance costs and for satisfying Extended Operations (ETOPS) availability and compliance requirements.

1.1 Purpose

As aircraft technology has evolved, the ability and the desire to monitor the health of the APU has also evolved. This report will identify the unique characteristics of a successful APU health management capability and the best practices for establishing such a system. The purpose of this report is to guide the development and use of a successful APU health management effort in a practical, cost effective method.

This report will:

- Identify the costs and benefits associated with developing an effective APU health management capability
- Identify the best practices and technologies for developing and implementing an APU health management capability
- Identify the best practices for using APU health management to prevent failures and disruptions to operations
- Identify a recommended collection of data, including recommended measurements and recommended events

2. REFERENCES

These references contain useful information that may have been used in this report or may be beneficial in understanding the subject.

2.1 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.

2.1.1 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.

AIR1828	Guide to Engine Lubrication System Monitoring
ARP1587	Aircraft Gas Turbine Engine Monitoring System Guide
ARP1839	A Guide to Aircraft Turbine Engine Vibration Monitoring
ARP4176	Determination of Costs and Benefits from Implementing an Engine Health Management System
ARP4754	Certification Considerations for Highly Integrated or Complex Aircraft Systems
ARP5120	Aircraft Gas Turbine Health Management System Development and Integration Guide
ARP6275	Determination of Cost Benefits from Implementing an Integrated Vehicle Health Management System
ARP6803	IVHM Concepts, Technology, and Implementation Overview