



AEROSPACE INFORMATION REPORT

AIR4286™

Issued 1990-11
Reaffirmed 2026-02

Maintenance of Ground Support Equipment

RATIONALE

AIR4286 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE:

The following are suggested policies, procedures, and practices required to maintain mobile and fixed ground support equipment at airport passenger and cargo terminals.

The principal purpose for ground support equipment maintenance is to provide the owner/user with safe, serviceable equipment, in good appearance, at minimal cost, and with minimum downtime. Maintenance programs initiated on ground support equipment must also conform to regulations controlling airport operations.

This document has been divided into three sections corresponding to the three stages of equipment life; acquisition, maintenance, and disposal.

2. APPLICABLE DOCUMENTS:

ARP1052	Selection Criteria for Reciprocating Prime Movers
ARP1247B	General Requirements for Aerospace Ground Support Equipment, Motorized and Non-Motorized
ARP1287	SAE Standards for Use in the Design of Aerospace Vehicular Ground Equipment
AIR1336	Vehicle Electrical Systems
AIR1375	Minimum Safety Requirements for Special Purpose Airline Ground Support Equipment
AIR1599	Ground Equipment Rebuild Program
ATA 101	Specification for Ground Equipment Technical Data

3. MAINTENANCE CONSIDERATIONS IN THE EQUIPMENT ACQUISITION PROCESS:

3.1 Setting Specifications:

During specification of needed ground equipment, maintenance personnel must ensure consideration of the following areas:

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2026 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, or used for text and data mining, AI training, or similar technologies, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER:
Tel: 1-877-606-7323 (U.S. and Canada only)
Tel: 1-724-776-4970 (outside U.S. and Canada)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE AIR4286

For more information on this standard, visit
<https://www.sae.org/standards/content/AIR4286/>

Documents

Standard, visit Sharing Hub

- 3.1.1 Standardization of equipment
- 3.1.2 Standardization of components to minimize the number of different spare parts required to be held in inventory
- 3.1.3 Maintainability; investigation of the equipment's record of previous usage is necessary to determine maintainability
- 3.1.4 Compare the level of maintenance skills required to the level of skills available

3.2 Evaluating Available Equipment:

- 3.2.1 Research reliability; establish the durability history of the unit and its components in ramp use; discuss this with other users
- 3.2.2 Evaluate the ease of maintenance repair of the unit and its components
- 3.2.3 Determine the scope of the warranty; read it carefully to determine exclusions
- 3.2.4 Make an equipment specification review and acceptance procedure
- 3.2.5 Determine availability of the specified fuel on the ramp; it is especially important to differentiate between jet fuel and diesel fuel
- 3.2.6 Determine type of fasteners; imperial versus metric, etc.
- 3.2.7 Determine availability of charging stations for electric powered equipment
- 3.2.8 Obtain applicable SAE standards for the equipment

3.3 Purchasing:

During the purchase cycle it is essential that maintenance personnel participate and plan for the following:

- 3.3.1 Initial inspection of offered equipment, and new equipment acceptance inspection at user's location
- 3.3.2 Training of maintenance personnel on the job or at the manufacturer's location prior to or upon the arrival of the new equipment
- 3.3.3 Training of operators
- 3.3.4 Availability of on site commissioning/set up by a manufacturer's representative

- 3.3.5 Repair parts/special tools provisioning - During the warranty period, only fast moving parts should be provisioned as spares; when the warranty has expired, provisioning for major components must be accomplished - These can be held on hand at the nearest maintenance facility or at the manufacturer's plant with a guarantee of availability
- 3.3.6 Modification of existing equipment for commonality with new equipment
- 3.3.7 Ensuring that suitable documentation is available at each location. All manuals should meet the intent of ATA 101 document.
 - a. Operator's Manuals
 - b. Maintenance of Parts Manuals

4. MAINTENANCE:

- 4.1 During the warranty period it is essential that all equipment be maintained in accordance with the manufacturer's specifications; once the warranty period has expired, maintenance programs can be implemented based on equipment environment.
- 4.2 Establishing Maintenance Practices:
 - 4.2.1 Inspections and Periodic Maintenance: Monitoring equipment readiness is accomplished through a series of inspections and check programs performed by the maintenance personnel based on local conditions and requirements. Essentially, these consist of:
 - a. Daily Inspections: On complex/specialized equipment, daily inspections should be performed by maintenance personnel. All other equipment daily inspections should be performed by trained operators.
 - b. Safety/Operational Checks and Service Checks: The frequency of these checks is determined by equipment environment. Mechanics should perform these checks to a prescribed format aimed at specific known maintenance problems.
 - c. Scheduled Maintenance: The frequency of scheduled maintenance is determined by equipment utilization (hours of operation) and/or calendar scheduling.
 - d. Preseasonal Checks: Carried out on seasonal types of equipment such as de-icers, heaters, and air conditioners.
 - e. Postseason Checks: Equipment must be prepared for extended storage in accordance with the manufacturer's recommendation.
 - f. Appearance Programs: The frequency of these programs is dependent upon environmental conditions and the nature of the operation.