



AEROSPACE RECOMMENDED PRACTICE

ARP6951™

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Storage, Handling, and Shipping of Aircraft Wheel and Tire Assemblies

RATIONALE

There is a need for a document that provides generally accepted recommendations for the storage, handling, and shipping of aircraft wheel and tire (W/T) assemblies. This is because compliance with these recommendations will promote the operational readiness of each W/T assembly and yield increased safety through all phases of these actions. This document meets this need.

FOREWORD

Aircraft owners/operators are faced with the technical and logistical considerations of storing, handling, and shipping airworthy W/T assemblies. Before the publication of this information, there were no SAE or industry documents specific to this subject. This document captures generally accepted best practices but is not intended to supersede component-specific guidance provided by wheel or tire manufacturers.

1. SCOPE

This SAE Aerospace Recommended Practice (ARP) identifies the best practices to reduce damage and promote safety during the storage, handling, and shipping of W/T assemblies.

2. REFERENCES

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 Code of Federal Regulations (CFR) Publications

Available from United States Government Printing Office, 732 North Capitol Street, NW, Washington, DC 20401, Tel: 202-512-1800, www.gpo.gov.

49 CFR Title 11 Transportation

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Full document details: SAE ARP6951

For more information on this standard, visit
<https://www.sae.org/standards/content/ARP6951/>

Documents

Document Sharing Hub

2.1.2 IATA Publications

Available from International Air Transport Association, Publications Assistant, 800 Place Victoria, P.O. Box 113, Montreal, Quebec H4Z 1M1, Canada, Tel: 1-514-874-0202, www.iata.org.

IATA Provision A59

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 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.

ARP6225 Aircraft Tire Inspection - In-Service Removal Criteria

2.2.2 Other Publications

DM1172 Tyre Guide. Dunlop Aircraft Tyres. Available at <https://www.dunlopaircrafttyres.co.uk/technical/dm1172-tire-care-manual-download/>.

Documents - All the Michelin Aircraft Tyre Related Downloadable Documents. Michelin. Available at <https://aircraft.michelin.com/documents>.

Goodyear Tire Care & Maintenance Manual. Goodyear. Available at <https://www.goodyearaviation.com/resources/tirecare.html>.

Maintaining Tires. Bridgestone Americas, Inc. Available at <https://www.bridgestoneamericas.com/en/company/safety/maintaining-tires>.

USTMA Issues Seven Aircraft Tire Service Bulletins. U.S. Tire Manufacturers Association. Available at <https://www.ustires.org/ustma-issues-seven-aircraft-tire-service-bulletins>.

3. STORAGE OF AIRCRAFT W/T ASSEMBLIES

Use nitrogen as the inflation pressure medium for all aircraft W/T assemblies. The inflation pressure should be set at the rated inflation pressure of the desired tire to stretch the tire and accomplish an assembly leak check. Once the assembly is deemed serviceable, the assembly can be stored at full-service pressure or at a reduced pressure knowing that additional inflation pressure (nitrogen gas only) will be required before use. Reducing and maintaining the storage pressure at 50 psi (345 kPa) or 25% of the service pressure (whichever is less) will keep the tire seated on the wheel and may help to reduce the aging/ozone cracking of the tire.

The assemblies should be stored in a cool (between 32 and 95 °F [0 and 35 °C]), dry, dust-free location out of direct sunlight in a vertical position. The assemblies should not be stored near electrical equipment such as generators or fluorescent lighting. Again, these actions are recommended to reduce the aging process of the tire rubber. The surface of the rack on which the assembly is stored should be flat to prevent distortion of the tire. The assemblies should be protected so they get no contact with contaminants such as oil, grease, jet fuel, and other hydrocarbon-based materials. The assemblies can be stored in this condition for up to 12 months. If stored outside, they should be covered with a tarpaulin or placed in a sealed plastic bag for not more than 6 months. After that time, inflated assemblies that have not been used should be re-inspected by a qualified inspector. To maximize tire life, it is recommended to rotate inventory on a first-in-first-out (FIFO) basis. W/T assemblies in outstations that are returned for inspection should then be fitted on aircraft and not returned to outstations.

Before installing assemblies on an aircraft, a pressure retention check may be necessary if the pressure loss cannot be attributed to the expected storage period pressure drop or voluntary pressure reduction for storage.