



AEROSPACE RECOMMENDED PRACTICE

ARP5283™

REV. B

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Superseding ARP5283A

Nose Gear Towbarless Tow Vehicle Basic Test Requirements

RATIONALE

Clarification on precedence if equivalent airframe manufacturer documentation exists, publications address updates, and minor editorial changes.

FOREWORD

In this ARP, the minimum essential criteria are identified by the use of the key word "shall". Other recommended criteria are identified by the use of the key word "should" and, while not mandatory, are considered to be of primary importance in providing safe and serviceable towbarless tractors. Alternative solutions may be adopted only after thorough evaluation has shown them to be equivalent.

The testing requirements listed here within are minimum testing requirements and may not satisfy all of the airframe manufacturer's requirements for tow vehicle assessment. Some airframe manufacturers have their own documents which are provided for tow vehicle assessment. Any additional test requirements from the airframe manufacturer's documents shall be included in the test program for the given airframe

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1. SCOPE

The purpose of this specification is to provide airplane operators and tow vehicle manufacturers with:

- a. General design and operating requirements pertinent to test and evaluation of towbarless tow vehicles. Specific design requirements are provided in ARP4852 and ARP4853.
- b. Test and evaluation requirements. The results of these test evaluations will determine if the loads induced by the tow vehicle will exceed the design loads of the nose gear, or are within the aircraft manufacturer's limits so that they do not affect the certified safe limit of the nose gear. The results of these test evaluations will also determine if a stability problem may occur during pushback and/or maintenance towing operations with the tested airplane/tow vehicle combination.

This document specifies general test requirements and a test evaluation procedure for towbarless tow vehicles (TLTV) intended for pushback and maintenance towing only. It is not meant for dispatch (operational) towing (see definitions in 2.3). Dispatch towing imposes more fatigue cycles on nose gears and structure due to additional passenger, cargo, and fuel loads, as well as more starts, stops and turns. Airframe manufacturers may require submittal of test results for evaluation or may provide information which allows TLTV manufacturers or airlines to self-test or evaluate the towbarless tow vehicles themselves. Refer to the airframe manufacturer's documentation for evaluation requirements and detailed testing procedures that may be different than contained in this specification. In the event of a difference in requirements, airframe manufacturer documentation takes precedence over this Recommended Practice.

TLTV manufacturers may elect to prepare and provide customers or regulatory agencies with a "Certificate of Compliance" or equivalent documentation as evidence that successful testing and evaluation of a specific tow vehicle/airplane type combination has been completed in accordance with this ARP and/or the applicable detailed airframe manufacturer's documentation. This certification will allow usage of the vehicle on specifically designated airplane model types. The certificate should be established under an appropriate quality control program meeting the requirements of ISO 9000 Series or equivalent.

This specification requires that the TLTVs under consideration be maintained and operated in a serviceable condition. In addition, the vehicle to airplane interface protection system shall be calibrated periodically. This information is defined in ARP5284 and ARP5285.

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 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.

ARP4852	Design Specification for Towbarless Push-Back Tow Vehicles
ARP4853	Design Specification for Towbarless Tow Vehicles
ARP5284	TLTV - Aircraft NLG Steering and Tractive Force Protection Systems or Alerting Devices - Inspection, Maintenance and Calibration Requirements
ARP5285	Towbarless Towing Vehicle Operating Procedure