



AEROSPACE RECOMMENDED PRACTICE

ARP4101™/2

REV. A

Issued 1989-02
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Revised 2025-05

Superseding ARP4101/2

(R) Pilot Visibility from the Flight Deck

RATIONALE

ARP4101/2A adds ASTM publications (see 2.1.2), adds FAA and EASA publications (see 2.1.3 and 2.2.2), updates and details method for the line-of-sight analysis (see 2.3.1), updates landing vision (see 3.2), updates the windows optical properties (see 3.4), adds alternatives to direct visibility (see 3.6), adds background (see Section 4), and updates Figure 2 to correct a plot error (use same view as FAA AC 25.773-1).

1. SCOPE

This document recommends criteria to assure adequate visibility from the flight deck. The flight-deck windshield must provide sufficient external vision to permit the pilot to perform any maneuvers within the operating limits of the aircraft safely and, at the same time, afford an unobstructed internal view of the flight instruments and other critical components and displays from the same eye position.

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.

ARP4101/1 Seats and Restraint Systems for the Flight Deck

ARP4102 Flight Deck Panels, Controls, and Displays

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For more information on this standard, visit
<https://www.sae.org/standards/content/ARP4101/2A/>

Documents

Standard, visit Sharing Hub

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM F733 Standard Practice for Optical Distortion and Deviation of Transparent Parts Using the Double-Exposure Method

2.1.3 FAA Publications

Available from Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, Tel: 866-835-5322, www.faa.gov.

AC 25.773-1 Advisory Circular for Pilot Compartment View Design Considerations

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.

ARP4105 Abbreviations, Acronyms, and Terms for Use on the Flight Deck

2.2.2 EASA Publications

Available from European Union Aviation Safety Agency, Konrad-Adenauer-Ufer 3, D-50668 Cologne, Germany, Tel: +49 221 8999 000, www.easa.europa.eu.

AMC 25.773 Acceptable Means of Compliance for Pilot Compartment View

2.3 Definitions

2.3.1 DESIGN EYE POSITION

A point at which the pilots' eyes should be located when seated at the normal position. The DEP is the principal dimensional reference point for the location of flight-deck panels, controls, displays, and external vision.

The design eye position shall be in accordance with ARP4102. Means within the aircraft shall be provided to facilitate and guide the pilot to the design eye position.

For the right seat pilot, all dimensions are opposite.

2.3.2 IMPAIRMENT

Masking of external vision due to physical obstacles between windows: typically, structural posts between windows.