

**AEROSPACE
RECOMMENDED
PRACTICE**

SAE ARP4102-7
Appendix A

Issued 1991-12
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Appendix A
Electronic Display Symbology for EADI/PFD

RATIONALE

This document has been reaffirmed to comply with the SAE 5-Year Review policy.

FOREWORD

Changes in this reaffirm are format/editorial only.

This document is an Appendix to ARP4102-7 - Electronic Displays issued July 1988.

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SAE ARP4102-7

APPENDIX A ELECTRONIC DISPLAY SYMBOLOGY FOR EADI/PFD

A.1 SCOPE:


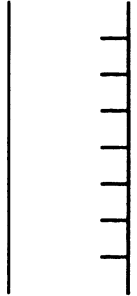

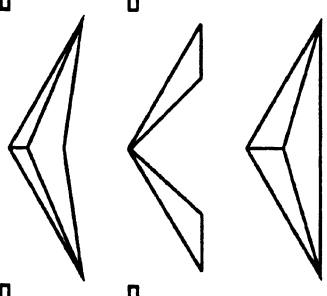
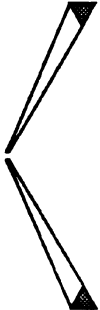

This appendix recommends symbols for Electronic Attitude Director Indicators (EADI) or Primary Flight Displays (PFD) used in the flight deck of transport aircraft. An attachment recommends location of these symbols on the displays.

A.2 GENERAL:

- A.2.1 EADIs or PFDs should incorporate only those symbols appropriate for the design function. It is not intended that these displays should use all of the named symbols.
- A.2.2 Symbols shall be displayed during appropriate phases of flight, e.g., "V" speeds shall be shown during takeoff, initial climb, approach, and landing. They should be removed from the display at other times to reduce clutter.
- A.2.3 The total symbology content of a display shall not result in uncontrollable clutter, close proximity of unrelated data, or use of alphanumeric and other symbols that are not easily distinguished by a pilot whose eye is at the Design Eye Point. Thus, small display formats should not be designed to contain all the symbology that can be satisfactorily included in larger displays.
- A.2.4 Symbols shall be grouped so that pertinent information is presented clearly and unambiguously; e.g., the airspeed tape, selected airspeed symbol, and actual airspeed symbol shall be presented so that they interact properly.
- A.2.5 Displays shall be evaluated in a dynamic environment to ensure they perform their intended function throughout the entire operating envelope, that there is proper integration between individual symbols, and do not contain human factor deficiencies.
- A.2.6 Recommended symbols should be used wherever possible; however, symbols may be refined as a result of dynamic testing or developed to display new functions.
- A.2.7 Symbols representing the same functions on more than one display on the same flight deck should be the same shape and color. Symbols of the same size, shape, and color may be used for more than one function, provided the distinction between functions is obvious and there is no risk of misinterpretation.
- A.2.8 Symbol geometry shown in Appendix A is typical. Specific dimensions are left to the designer.

PREPARED BY SAE COMMITTEE S-7,
FLIGHT DECK AND HANDLING QUALITIES STANDARDS FOR TRANSPORT AIRCRAFT

EADI / PFD

NAME	RECOMMENDED SYMBOL	ACCEPTABLE ALTERNATIVES	REMARKS
1. HORIZON LINE			<ul style="list-style-type: none"> • LINE SHOULD GO ACROSS THE ENTIRE ATTITUDE DISPLAY • TICS MARKS ARE RECOMMENDED WHEN A FLIGHT PATH VECTOR IS USED • TICS MARKS SHOULD BE EVERY 10°. THEY SHOULD BE OF EQUAL LENGTH.
2. AIRCRAFT SYMBOL REFERENCE MARKS (FOR SINGLE CUE FD)			<ul style="list-style-type: none"> • SOLID TRIANGLE • OVERLAY ALL OTHER SYMBOLS • BOTTOM LINE SHOULD NOT BE COMPLETELY HORIZONTAL SO THAT THE PITCH TAPE LINES MOVE MORE GRADUALLY INTO VIEW • REFERENCE MARKS ARE OPTIONAL • SYMBOL HAS A FIXED POSITION • WHEN FLIGHT DIRECTOR COMMAND IS NULLED, THE UPPER FACE OF THE AIRCRAFT SYMBOL SHOULD BE COINCIDENT WITH THE LOWER FACE OF THE FLIGHT DIRECTOR COMMAND SYMBOL
3. FLIGHT DIRECTOR COMMAND (SINGLE CUE)			<ul style="list-style-type: none"> • SYMBOL HAS A GAP IN CENTER • SYMBOL SHOULD HAVE PRIORITY OVER ALL SYMBOLS EXCEPT AIRCRAFT SYMBOL. OTHER SYMBOLS SUCH AS THE PITCH SCALE AND THE PITCH LIMIT MAY BE MERGED WITH THE FLIGHT DIRECTOR COMMAND SYMBOL PROVIDED THE INTENDED FUNCTION IS NOT DEGRADED. • FLIGHT DIRECTOR SYMBOL SHALL EXTEND WIDER THAN "WING TIPS" OF AIRCRAFT SYMBOL TO ASSIST WITH PROPER ALIGNMENT OF THE TWO SYMBOLS • OUTER TRIANGLE SHOULD BE HIGHLIGHTED TO AID IN 3-D EFFECT • SHADING IS RECOMMENDED