

Submitted for recognition as an American National Standard

Markings for Aircrew Station Displays
Design and Configuration of

FSC 1500

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1. SCOPE:

1.1 Scope:

This specification covers the design requirements and configuration of letters, numerals, and identification for aircrew station displays and control panels.

1.2 Classification:

The control panels shall be classified as follows.

1.2.1 Classes:

Class A - Transilluminated panels conforming to MIL-P-7788.

Class B - Non-transilluminated panels conforming to MIL-C-6781.

1.2.2 Types:

Type I - White markings on black background.

Type II - White markings on gray background.

2. APPLICABLE DOCUMENTS:

- 2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

SPECIFICATIONS

MILITARY

- | | | |
|------------|---|--|
| MIL-C-6781 | - | Control Panel: Aircraft Equipment, Rack or Console Mounted |
| MIL-P-7788 | - | Plate, Plastic, Lighting |

STANDARDS

FEDERAL

STANDARD NO. 595 - Colors

MILITARY

- | | | |
|-------------|---|--|
| MIL-STD-203 | - | Cockpit Controls, Location and Actuation of, for Fixed Wing Aircraft |
| MIL-STD-250 | - | Cockpit Controls, Location and Actuation of, for Helicopters |
| MIL-STD-411 | - | Aircrew Station Signals |
| MS33558 | - | Numerals and Letters, Aircraft Instrument Dial, Standard Form of |
| MS33585 | - | Pointers, Dial, Standard Design of Aircraft Instrument |

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2.1 (Continued):

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Streamlining:

This document has been streamlined. Appendix A to MIL-M-18012B lists those documents required for MIL-M-18012B acquisition and is a mandatory part of MIL-M-18012B. Those documents listed in Appendix A have the same status as those referenced directly in MIL-M-18012B (first tier documents). All other documents, referenced through tiering, may be used as guidance and information to supplement MIL-M-18012B. MIL-M-18012B is a streamlined document.

3. REQUIREMENTS:

3.1 General:

Markings shall be uniform and without distortion. All letters and numerals shall be vertically oriented and shall distinctly indicate the graduation to which each applies.

3.1.1 Instruments and indicators:

- (a) Numerals on dials of instruments whose graduations are on the perimeter of the dial shall be within the inner perimeter of the graduations. Numerals on sub-dials and dials having arc-type scales with graduations not on the perimeter of the dial may be on the outer perimeter of the graduations, unless otherwise specified by the procuring activity.
- (b) Numeral values on fixed circular scales shall increase in a clockwise direction. On a linear scale display, numeral values shall increase from left to right on horizontal scales, and from bottom to top on vertical scales.
- (c) On those displays which require positive and negative indications about a zero point, positive values shall increase in a clockwise or upward direction and negative values shall increase in a counterclockwise or downward direction, unless otherwise approved by the procuring activity.
- (d) Instruments and indicators presenting information to the viewer as to the current status of an important control or equipment shall be clearly identified by bearing the nomenclature which indicates the function being measured rather than a specific instrument title. For example, the altimeter should be labeled "ALTITUDE" and the tachometer should be labeled "RPM". All identification markings placed on instruments and indicators shall be subject to the approval of the procuring activity.

3.1.1.1 Letter and numeral design: Letters and numerals on instruments and indicators shall conform to MS33558.

3.1.2 Control panels: One letter and numeral design shall be selected and used for each control panel. Where possible, this same design shall be used on all control panels in the aircrew station.

3.1.2.1 Letter design: The recommended letter form is shown on figure 1. This font is available for paste-up layout work, in double the specified sizes, as Artype S-274. The letter designs shown in MS33558 are acceptable for parts covered by this specification. The following commercial fonts having the size ratios specified herein for the classes and types of control panels covered by this specification may be used. Where there is limited panel space for the panel nomenclature, a News Gothic Condensed letter font may be used upon the approval of the procuring activity. Stroke width of engraved letters shall be the same as that of the acceptable type fonts of the same letter heights.

(a) Fonts for engraving:

- (1) Gorton extended
- (2) Groton normal
- (3) Gorton condensed

(b) Fonts for printing and other reproduction methods:

- (1) Airport semibold
- (2) Futura demibold
- (3) Vogue medium
- (4) Lining Gothic No. 66
- (5) Alternate Gothic No. 3

3.1.2.1.1 Letter spacing: There shall be approximately one stroke width space between letters within words, and one standard letter width (see 3.2.2) between words in groups. Because letters vary in the amount of stroke occupying the left and right edge of the letter-block space, spacing that is actually unequal between the letter blocks can appear more uniform than equal spacing. The lettering within words, except for overall panel identification, shall be arranged to read horizontally from the viewer's left to right. Legend or contraction shall normally be arranged to read horizontally, unless for clarity of indication or for reasons of space limitation, a vertical arrangement is necessary. Vertically arranged letters shall be of equal width to provide a pleasing effect.

3.1.2.2 Numeral design: The recommended number series is shown on figure 2. This font is currently available for paste-up layout work, in double the specified sizes, as Artype S-274. Numeral designs shown in MS33558 are acceptable for parts covered by this specification. The following commercial fonts having the size ratios specified herein for the classes and types of control panels covered by this specification may be used. Stroke width of engraved letters shall be the same as that of the acceptable type fonts of the same letter height.

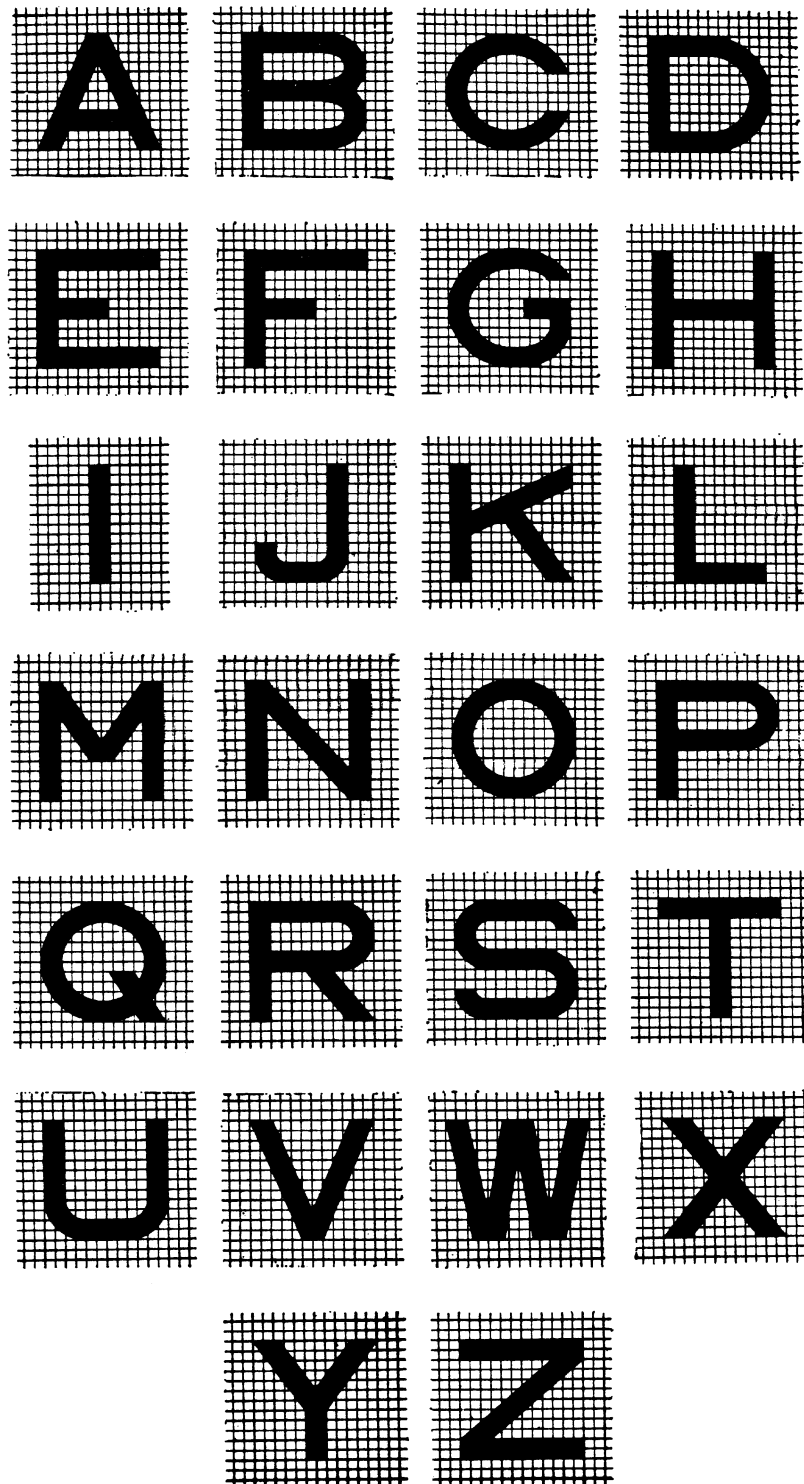


FIGURE 1. Letter font

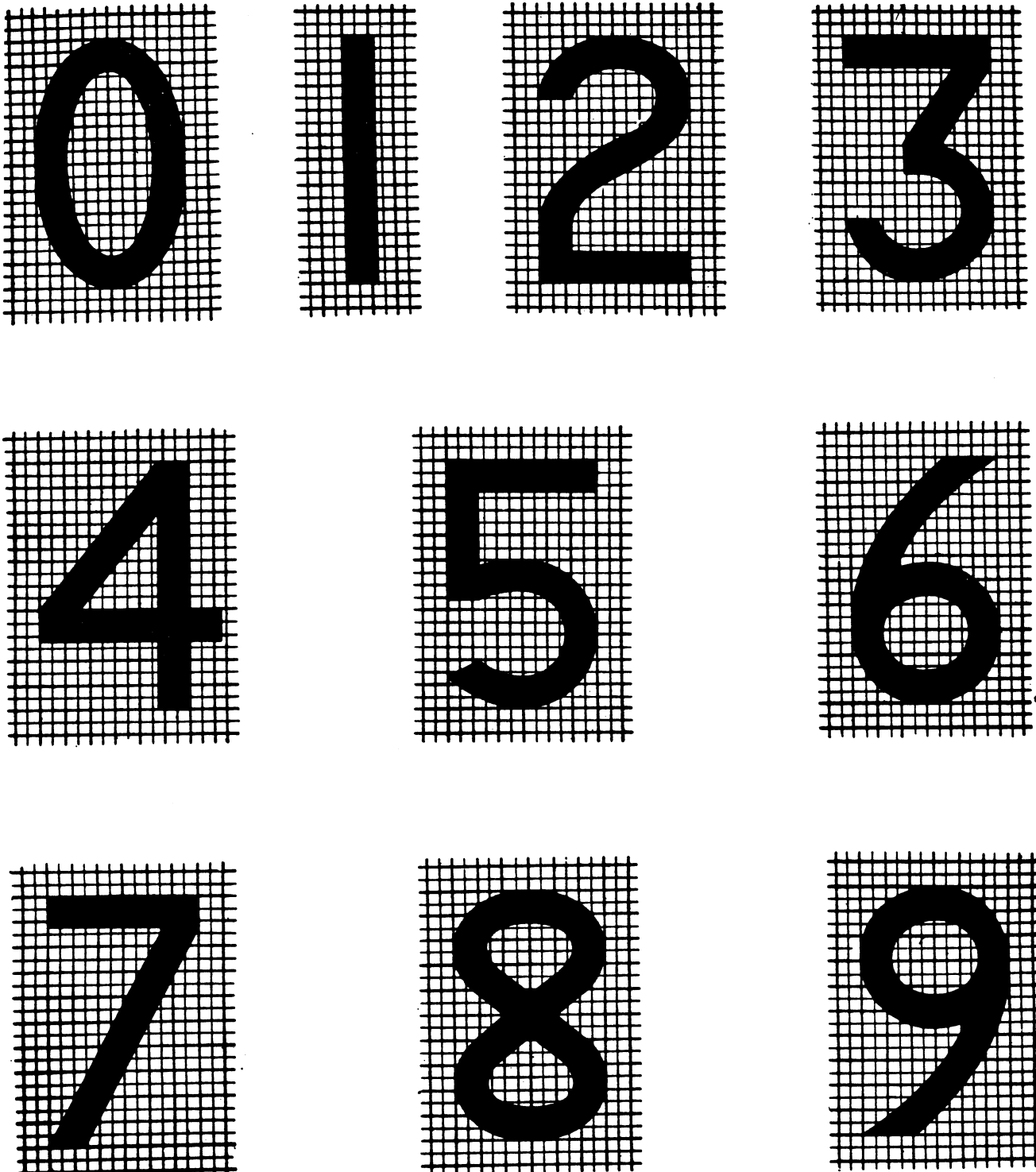


FIGURE 2. Numeral font