MIL-P-6906B
24 February 1969
SUPERSEDES
CANCELLED
MIL-P-6906A
2 April 1962

MILITARY SPECIFICATION

PLATES, IDENTIFICATION, AIRCRAFT

1. SCOPE

*1.1 Scope. This specification covers identification plates for aircraft instruments, accessories, major structural aircraft assemblies, and aircraft equipment.

*1.2 Classification. Air craft identification plates shall be of the following types constructed of materials as specified (see 3.2 and 6.2).

Type I	-Plate, Identification, Blank
Type II	-Plate, Identification MS 27253

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

Federal

GG-P-00455a(GSA-FSS)	Plate, Photographic (Photosensitive-Anodized Aluminum).
QQ-A-250	Aluminum Alloy Plate and Sheet, General Specification for.
QQ-A-250/1	Aluminum Alloy 1100, Plate and Sheet.
QQ-A-250/2	Aluminum Alloy 3003, Plate and Sheet.
QQ-B-626	Brass, Leaded and Non-Leaded, Rods, Shapes, Forgings and Flat Products with Finished Edges (Bars, Flat Wire and Strips).
QQ-B-637	Brass, Naval, Rod Wire, Shapes Forgings, and Flat Products with Finished Edges (Bars, Flat Wire, and Strips).
QQ-S-766	Steel Plate, Sheet, and Strip-Corrosion Resisting.
TT-R-230	Remover, Paint (Alkali-Type for Hot Application).

FSC 9905

TT-R-243	Remover, Paint (Alkali-Organic Solvent Type).
TT-R-00251	Remover, Paint (Organic Solvent Type).
PPP-B-585	Boxes, Wood, Wirebound.
PPP-B-591	Boxes, Fiberboard, Wood-Cleated.
PPP-B-601	Boxes, Wood, Cleated-Plywood.
PPP-B-621	Boxes, Wood, Nailed and Lock-Corner.
PPP-B-636	Box, Fiberboard.

Military

MIL-M-3171	Magnesium Alloy; Processes for Pretreatment and Protection of Corrosion On.
MIL-S-6721	Steel Corrosion and Heat Resistant Chemically Stabilized Plate, Sheet, and Strip.
MIL-A-8625	Anodic Coating, for Aluminum Alloys.
MIL-P-8651	Plates: Identification and Modification (For Aircraft) Installation of.

STANDARDS

Federal

FED-STD No. 151	Metals; Test Methods.
FED-STD No. 595	Colors.

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129	Marking for Shipment and Storage.

DRAWINGS

Military

MS27253	Plates, Identification.

(Copies of specifications and standards 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 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Society for Testing and Materials (ASTM)

D-822 - Recommended Practice for Operating Light and Water-Exposure Apparatus (Carbon-Arc Type) for Testing Paint, Varnish, Lacquer and Related Products.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103).

American Trucking Association, Inc.

National Motor Freight Classification Rules

(Application for copies should be addressed to the American Trucking Association, Inc., 1616 P Street, N.W. Washington, D.C. 20036).

Official Classification Committee

Unifor Freight Classification Rules

(Application for copies should be addressed to the Official Classification Committee, One Park Avenue, at 33rd Street, New York, N.Y. 10016).

Society For Automotive Engineers (SAE)

AMS 7292 - Labels, Aluminum Foil-Etched, Anodized, and Dyed.

(Application for copies should be addressed to the Society of Automotive Engineers, Aeronautics Division of ASE Standards Committee, 485 Lexington Avenue, New York, N.Y. 10017).

Technical society and technical association specifications and standards are generally available from libraries. They are also distributed among technical groups and using Federal agencies.

3. REQUIREMENTS

*3.1 Preproduction sample. Unless otherwise specified (see 6.2), the contractor shall furnish a complete identification plate for preproduction inspection in accordance with Section 4. The sample may be a preproduction item or a production item which meets the requirements of this specification. In either case, the sample shall be identical with the proposed items and shall be made or shall have been made by the methods that are to be used or were used in production of items to fulfill the terms of the contract. The preproduction sample may be shipped as part of the contract. Approval of a preproduction sample shall not relieve the contractor of the responsibility to furnish equipment in accordance with the requiremnts of this specification.

*3.2 Material. Plates procured in accordance with this specification shall be constructed of copper, aluminum, magnesium, zinc, corrossion resistant steel, photo-sensitive aluminum, aluminum foil with pressure sensitive backing, or plastic as specified (see 6.2).

3.2.1 Copper plate. Copper plates shall be in accordance with QQ-B-637 or QQ-B-626.

3.2.2 Aluminum plate. Aluminum plates shall be in accordance with QQ-A-250/1 or QQ-A-250/2.

3.2.3 Magnesium plate. Magnesium plates shall be in accordance with standard manufacturing practice.

3.2.4 Zinc plate. Zinc plates shall be in accordance with standard manufacturing practice.

3.2.5 Steel plate. Steel plates shall be of corrosion resistant steel in accordance with MIL-S-6721 or QQ-S-766.

*3.2.6 Photo-sensitive aluminum plate. Photo-sensitive aluminum plates shall be in accordance with GG-P-00455. Grade and class of photo-sensitive aluminum shall be specified in accordance with GG-P-00455 as required.

*3.2.7 Aluminum foil plate. Aluminum foil plates shall be in accordance with QQ-A-250/1, or alumium foil conforming to type 1145-H19 of SAE Standard AMS 7292. Thickness of alumium foil plates shall be 0.005 "inch ± 0.0005" without adhesive.

3.2.7.1 Adhesive. Aluminum foil plates shall have a pressure-sensitive adhesive on one side. Adhesive surface shall be protected by a film or backing in accordance with standard manufacturing practice.

*3.2.8 Plastic plate. Plastic plates shall be clear mylar with matte one side.

*3.3 Format

*3.3.1 Size of plates. Type I plates shall be of the length, width, and thickness as specified in the contract or purchase order, or on applicable drawings (see 6.2), and shall be of such size, relative to the amount of copy, to accomodate the minimum size and style of copy as specified.

*3.3.1.2 Type II plates shall conform in size to the requirements of MS27255. Unless otherwise specified, corrosion resistant steel plates shall have a maximum thickness of 0.016 inch, alumium plates shall be 0.032 inch ± 0.004", alumium foil plates with pressure sensitive adhesive backing shall have a

thickness of 0.0003 inch + 0.0005" without adhesive, and plastic shall have a maximum thickness of 0.10 inch. Length and number of spaces shall be as specified by the contract or purchase order (see 6.2).

*3.3.2 Marking. Type I plate marking information shall be specified in the contract or purchase order (see 6.2). Letters, numerals, and characters shall be permanent and legible. Letters shall be Gothic capitals; numbers and characters shall be of similar appearance.

*3.3.2.1 Type II marking information shall conform to MS 27253 and MIL-P-8651.

*3.3.3 Application of copy. Letters, lines and other characters shall be applied by the photo-sensitive, etching, engraving or casting process, combinations thereof, or other suitable process, except that embossing or metal stamping shall be used only for forming serial numbers, modification numbers and other designations, which differ on each plate. The backside of all plates shall be smooth and solid. On all plates, except aluminum base alloy and photo-sensitive plates, all lines, letters, numerals, and other characters shall be depressed not less than 0.003 inch below the surface of the plate (sunken or reverse etched) or the background shall be depressed not less than 0.0003 inch below the surface of the plate leaving all lines, letters, borders, numerals, and other characters in raised relief (raised or positive etched). Except for depressed backgrounds or depressed or raised copy the front of the plate shall be smooth. On aluminum-base alloy and photo-sensitive plates, all copy shall be applied as to produce either a smooth surface of with copy sunken, etched or in raised relief.

*3.3.4 Finish. Unless otherwise specified (see 6.2) the smooth surfaces of plates shall have a satin or a matte finish to minimize reflection.

*3.3.5 Color. Background colors and color of copy on identification plates shall be as specified in the individual contract or purchase order (see 6.2). Colors shall conform to FED-STD-595.

*3.4 Protective coating. Unless otherwise specified (see 6.2) aluminum and magnesium alloy shall be given a protective coating. Aluminum alloy plates shall be anodized and sealed, as applicable, in accordance with MIL-A-8625. Magnesium alloy plates shall be anodized and sealed, as applicable, in accordance with MIL-M-3171. The anodizing of edge surfaces is optional.

*3.4.1 Coating of copper and zinc plates. Unless otherwise specified (see 6.2) copper alloy and zinc alloy plates shall be given a clear protective coating.

*3.5 Radius of corners. Identification plates shall have corners rounded to a maximum radius of 1/8 inch.

*3.6 Attachment of plates. Type I plates shall be drilled or punched as specified in the contract or purchase order, or on applicable drawings (see 6.2). Plates shall not be deformed as a result of punching or drilling operations.

*3.6.1 Type II plates shall be drilled or punched in accordance with MS 27253. Plates shall not be deformed as a result of punching or drilling operations.

*3.7 Performance. Unless otherwise specified (see 6.2), all plates shall be resistant to thermal shock, corrosion, solvent, and fading from solar radiation.

3.7.1 Resistance to thermal shock. The copy on the finished plate shall be legible and the plate material show no evidence of cracking, splitting, wrinkling, warping, or other injurous defects after being subjected to the test specified in 4.6.1.

3.7.2 Resistance to corrosion. Finished plates shall show no evidence of corrosion on either side after being subjected to the test specified in 4.6.2.

3.7.3 Resistance to solvent. The copy on the finished plate shall be legibly visible after being subjected to the test specified in 4.6.3.

3.7.4 Resistance to weathering. Plates shall be subjected to the accelerated aging test, specified in 4.6.4. Plates shall show no change in color which is immediately noticable when the specimen plate is compared with a plate having a standard finish.

*3.8 Workmanship. Cleanliness, neatness, and legibility of all markings shall be emphasized in the workmanship of all plates. Plates shall have smooth edges and shall be free from burrs, sharp edges and projections.

4. QUALITY ASSURANCE PROVISIONS

*4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

*4.2 Preproduction sample. Unless otherwise specified (see 6.2), the preproduction sample shall be inspected at the place of manufacture. The preproduction sample shall be examined in accordance with 4.5, and tested in accordance with 4.6. Sampling in accordance with MIL-STD-105 shall not apply. The preproduction sample shall be as specified in 3.1.

*4.3 Lot. A lot submitted for inspection shall consist of all plates of the same type, style, and composition offered for delivery at one time.

*4.4 Sampling.

4.4.1 Sampling for examination. Sampling for examination shall be in accordance with MIL-STD-105.

4.4.2 Sampling for performance testing. Sample for performance testing (see 3.7) shall be selected in accordance with inspection level S-2 of MIL-STD-105. The lot size for determining the sample size shall be expressed in units of plates. The sample unit shall be one plate.

*4.5 Inspection

4.5.1 Examination. Examination shall be in accordance with the classification of defects, inspection levels, and acceptable quality levels (AQL's) set forth below. The lot size for the purpose of determining the sample size for examination 4.5.1.1 and 4.5.1.2 shall be expressed in units of plates.

4.5.1.1 Examination for defects in material, construction, appearance and workmanship. This examination shall be conducted after the plates have been subjected to the tests specified in 4.6. Defects shall be classified as specified in Table I. Any plate in the sample containing one or more defects shall be rejected and if the number of defective plates in any sample exceeds the acceptance number for that sample, the lot represented by the sample shall be rejected.

TABLE I. CLASSIFICATION OF DEFECTS

Major	
101	Material not as specified.
102	Protective coating not as specified (when applicable).
103	Illegible embossing or stamping.
104	Inscription or description does not conform to applicable drawings or contract requirements.
105	Plate not formed with opposite sides parallel within + 1/64 inch or adjacent sides at 90 + 1/2 degree angle.
106	Spacing and blocking not uniform and in true parallel with width of block.
107	Holes, not drilled or punched as specified.
108	Lettering not as specified.
109	Hole, (Other than attachment holes) inclusion of foeign matter, pit, porosity, split, pips, sliver, crack, twist, seam, scale, damaged edge, buckle, lamination, blister, or excessive variation in thickness of background where defect occurs in lettering area or at attachment hole in corner.

110	Any lettering, numeral, or other character incorrect or missing.
111	Finish blistered, peeled, chipped, or not as specified.
112	Finish not as specified.

4.5.1.2 Examination for dimensional defects. The sample unit for this examination shall be one plate. Any dimensional nonconformance as to overall size of plate, height and depth of lettering, borders, spaces, plate thickness, size and location of holes or other dimensional requirement shall constitute a defect.

4.5.1.3 Inspection levels and acceptance quality levels (AQL's) for examination. The inspection levels and acceptance quality levels (AQL's) expressed in defects per 100 units shall be as follows:

Examination Paragraph	Inspection level	AQL Major	Total
4.5.1.1	S-4	1.0	4.0
4.5.1.2	S-1	---	4.0

*4.6 Test procedures. Samples selected in accordance with 4.4.2 shall be subjected to the following tests. Failure of any plate to pass the tests shall be cause for rejecting the lot.

4.6.1 Thermal shock resistance test. Plates shall be placed in a hot water bath, which shall be maintained at a temperature of 175° for a period of 3 hours. The sample shall then be immediately transferred to a cold chamber, and maintained at a temperature of -65°F., for a period of one hour. This procedure shall be immediately repeated and the plates examined for conformance to 3.7.1.

4.6.2 Corrosion-resistance test. Plates shall be subjected to a 150-hour salt-spray test in accordance with method 811 FED-STD--No. 151, after which the plates shall be examined to determine conformance to 3.7.2.

4.6.3 Solvent resistance test. Plates shall be immersed for a period of fifteen minutes in each of the solvent baths listed below and in the order shown:

a. Trichloroethylene
b. Gasoline
c. A mixture containing wqual parts of gasoline and trichloroethylene by volume.
d. Paint remover conforming to TT-R-243.

e. Paint remover conforming to classes 1 and 2 of TT-R-230.
f. Paint remover conforming to Type III, classes A and E, of TT-R-00251 (FSA-FSS).
g. A solution of common soap and water.

After immersion in each solvent bath, the plate shall be briskly rubbed a minimum of five times with a soft dry cloth and examined for conformance to 3.7.3.

4.6.4 Weather test. Plates shall be subjected to a 150-hour weatherometer test in accordance with ASTM Test Method D-822 (using Atlas Triple-Arc, Model XW, Weatherometer with 102-18 Cam mounted in cycle meter, or equal, and cabinet temperature of 120°F.). After which plates shall show no appreciable change in color, gloss, clarity, or legibility when compared with the original plates.

*4.7 Inspection of preparation for delivery. An inspection shall be made to determine if the plates are packaged, packed, and marked as required by Section 5 of this specification. Defects shall be scored as specified below. The sample unit shall be one packed shipping container fully prepared for delivery with the exception that it has not been sealed. Defects of closure listed below shall be the numbers of containers in the inspection fully prepared for delivery. The lot size shall be the number of containers in the inspection lot. The inspection level for determining the sample size shall be S-4 of MIL-STD-105; the acceptable quality level (AQL) shall be 6.5 defects per hundred units.

Examine	Defects
Markings	Omitted; incorrect; illegible; size; location or method of application incorrect.
Materials	Components missing, damaged, defective, incorrect, improper.
Workmanship	Incomplete closure of case liners and container flaps.
Contents	Number per container is more or less than specified.

5. PREPARATION FOR DELIVERY

*5.1 Packaging. Packaging shall be level A or C as specified (see 6.2).

*5.1.1 Level A. Each plate of the same type and size shall be individually wrapped by a suitable noncorrosive barrier material and shall be packaged in a box conforming to PP-B-636 (weather-resistant class) waterproof sealed, with tape in accordance with the appendix thereto.

5.1.2 Level C. Plates shall be packaged in a manner that will afford protection against physical damage during shipment from the supply source to the first receiving activity.

*5.2 Packing. Packing shall be level A, B or C as specified (see 6.2).

5.2.1 Level A. Places shall be packed in wood-cleated fiberboard boxes, nailed wood boxes, wirebound wood boxes, cleated-plywood wood boxes, or fiber boxes conforming to PPP-B-591. (overseas type), PPP-B-621 (Class 2), PPP-B-585, (Class 2), PPP-B-601 (Overseas type), and PPP-B-636 (weather-resistance), respectively. The boxes shall be closed and strapped in accordance with the appendix of the applicable specification. Flat steel strapping for all boxes shall be type I, class B. Gross weight of the boxes shall not exceed the weight limitations of the applicable box specification and in no case shall exceed approximately 200 pounds.

5.2.2 Level B. Plates shall be packed as specified for level A except that the boxes shall be domestic type or class, as applicable, and gross weight and flat steel strapping requirements need not apply.

5.2.3 Level C. The complete equipment shall be packed in a manner which will insure arrival at destination in satisfactory condition and be acceptable to the carrier at lowest rates. Containers and packing shall comply with Uniform Freight Classification Rules or National Motor Freight Classification Rules.

*5.3 Marking. In addition to any special marking required by the contract or order, packages and shipping containers shall be marked in accordance with the requirements of MIL-STD-129.

6. NOTES

*6.1 Intended use. The plates covered by this specification are intended for use on aircraft instruments, accessories, and aircraft equipment.

*6.1.1 Type I. This plate is intended for general use on aircraft equipment to provide special identification, instruction, designation, and other miscellanious data not provided for in the format of military standards (MS). Special data is to be furnished in the contract or purchase order or on applicable drawings.

*6.1.2 Type II. This plate is intended for use to record modifications incorporated into aircraft instruments, accessories, and major structural aircraft assemblies.

*6.2 Ordering data. Procurement documents should specify the following:

a. Title, number, and date of this specification.

b. Type and material required (see 1.2 and 3.2).

c. If a preproduction sample is required (see 3.1).

d. Size and marking information required for Type I plates (see 3.3.1 and 3.3.2).

e. Length and number of spaces required for Type II plates (see 3.3.1.2).

f. Finish, if other than specified (see 3.3.4).

g. Colors required (see 3.3.5).

h. If protective coating on aluminum and magnesium matal plates is not required (see 3.4).

i. If protective coating is required on copper-alloy and zinc-alloy plates (see 3.4.1).

j. If attachment holes are different (see 3.6).

k. If performance requirements are different (see 3.7).

l. If preproduction sample shall be inspected other than as specified (see 4.2).

m. Level of packaging and level of packing required (see 5.1 and 5.2).

*6.3 Changes from previous issue. The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, ~~corrections, deletions)~~ ~~from the previous~~ issue was made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationships to the last previous issue.

Custodians:
Army EL
Navy AS
Air Force 99

Preparing Activity:
Air Force 99

Project Number
9905-0171

Review Activities:
Army MI, AV
Navy AS
Air Force 99