

MIL-S-26688(USAF)
10 March 1959

MILITARY SPECIFICATION

SEAT; PASSENGER, AFT FACING, TRANSPORT AIRCRAFT

1. SCOPE

1.1 SCOPE. - This specification establishes the requirements for two types of standard aft facing passenger seats for use in transport aircraft.

1.2 CLASSIFICATION.- Seats shall be one of the following types, as specified:

Type I - Double Passenger Seat
 Type II - Triple Passenger Seat

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on the date of invitation for bids, form a part of this specification

SPECIFICATIONS

Federal

QQ-P-416	Plating, Cadmium (Electrodeposited)
QQ-Z-325	Zinc Plating (Electrodeposited)
PPP-B-601	Boxes, Wood, Cleated-Plywood
PPP-B-621	Boxes, Wood, Nailed and Lock-Corner
PPP-B-636	Boxes, Fiber
PPP-T-60	Tape; Pressure Sensitive Adhesive, Waterproof - For Packaging and Sealing

Military

MIL-P-116	Preservation, Methods of
MIL-M-3171	Magnesium Alloy; Process for Corrosion Protection of
MIL-D-5028	Drawings and Data Lists; Preparation of Manufacturers' (For Production Aeronautical and Associated Equipment)
MIL-L-6805	Lacquer, Camouflage
MIL-P-6889	Primer; Zinc-Chromate; For Aircraft Use
MIL-B-8607	Belt, Safety Passenger Type
MIL-A-8625	Anodic Coatings, For Aluminum and Aluminum Alloys
MIL-T-9107	Test Reports; Preparation of
MIL-L-10547	Liners, Case, Waterproof

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STANDARDS

Military

MIL-STD-129	Marking for Shipment and Storage
MIL-STD-130	Identification Marking of US Military Property
MS33586	Metals, Definition of Dissimilar

PUBLICATIONS

Air Force-Navy Aeronautical Bulletin

No. 143 Specifications and Standards; Use of

(Copies of documents required in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 PREPRODUCTION.- This specification make provisions for preproduction tasting.

3.2 COMPONENTS .- The complete seat assembly shall include the seat bottom and back cushions, foot rests, and food trays.

3.3 SELECTION OF SPECIFICATIONS AND STANDARDS.- Specifications and standards for necessary commodities and services not specified herein shall be selected according to ANA Bulletin 143 except as provided in 3.3.1 and 3.3.2.

3.3.1 COMMERCIAL PARTS. - Commercial parts having suitable properties may be used where, on the date of invitation for bids, there are no suitable standard parts, like screws, bolts, nuts, cotter pins, having suitable properties may be used provided:

a. They can be replaced by the standard parts (MS and AN) without alteration.

b. The corresponding standard part numbers are referenced in the parts list and, if practicable, on the contractor's drawings.

3.3.2 STANDARDS PARTS.- With the exception in 3.3.1, MS and AN standard parts shall be used where they suit the purpose. They shall be identified on the drawings by their part numbers.

3.4 MATERIALS

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3.4.1 FUNGUS PROOF MATERIALS. - Materials that are nutrients for fungi shall not be used where it is practical to avoid them. Where used and not hermetically sealed, they shall be treated with a fungicidal agent acceptable to the procuring activity. However, if they will be used in a hermetically sealed inclosure, fungicidal treatment will not be necessary.

3.4.2 METALS - Metals shall be of the corrosion-resistant type or suitably treated to resist corrosion due to fuels, salt spray, or atmospheric conditions likely to be met in storage or normal service.

3.4.2.1 DISSIMILAR METALS. - Unless suitably protected against electrolytic corrosion, dissimilar metals shall not be used in intimate contact with each other. Dissimilar metals are defined in MS33586.

3.5 DESIGN. - The seats shall be designed to provide minimum weight, maximum comfort, attractive appearance, ease of adjustment, freedom from complicated mechanisms, maximum durability to withstand rough service usage and handling, and shall permit quick installation and removal. Parts which are susceptible to service wear shall be accessible for repair, removal and replacement without complete dismantling of the seat. Fasteners shall be provided which enable the removal and replacement of the seat back, bottom and arm rest cushions in a minimum of time.

3.5.1 GENERAL STRUCTURE.- Thermoseal straps or equivalent shall be used on the back and bottom assemblies to form a resilient structure for the back and bottom cushion assemblies. The seat and back shall have the maximum developed posture contours, with the use of formed cushions or padding specified by the procuring activity. Two pockets shall be provided in each seat back, one for the stowage of a food tray and the other for the life vest, exposure suit, and miscellaneous items.

3.5.2 LEG SUPPORTS.- The legs of the seats shall be located as shown in figures 1, 2 and 3. The base of each leg shall be provided with a fitting to permit mounting on a track specified by the procuring activity. All legs shall be foldable to permit the stowage of seat in a minimum space. On the type I seat the legs shall be designed to be removed and reinstalled on opposite ends of the seat to permit installation of seat on either side of the aircrafts.

3.5.3 ARM RESTS. - The seat shall be provided with arm rests substantially as shown in figure 1 and 2. The centerarm rests of the type I. seat and one arm rest of the type II. seat shall be foldable

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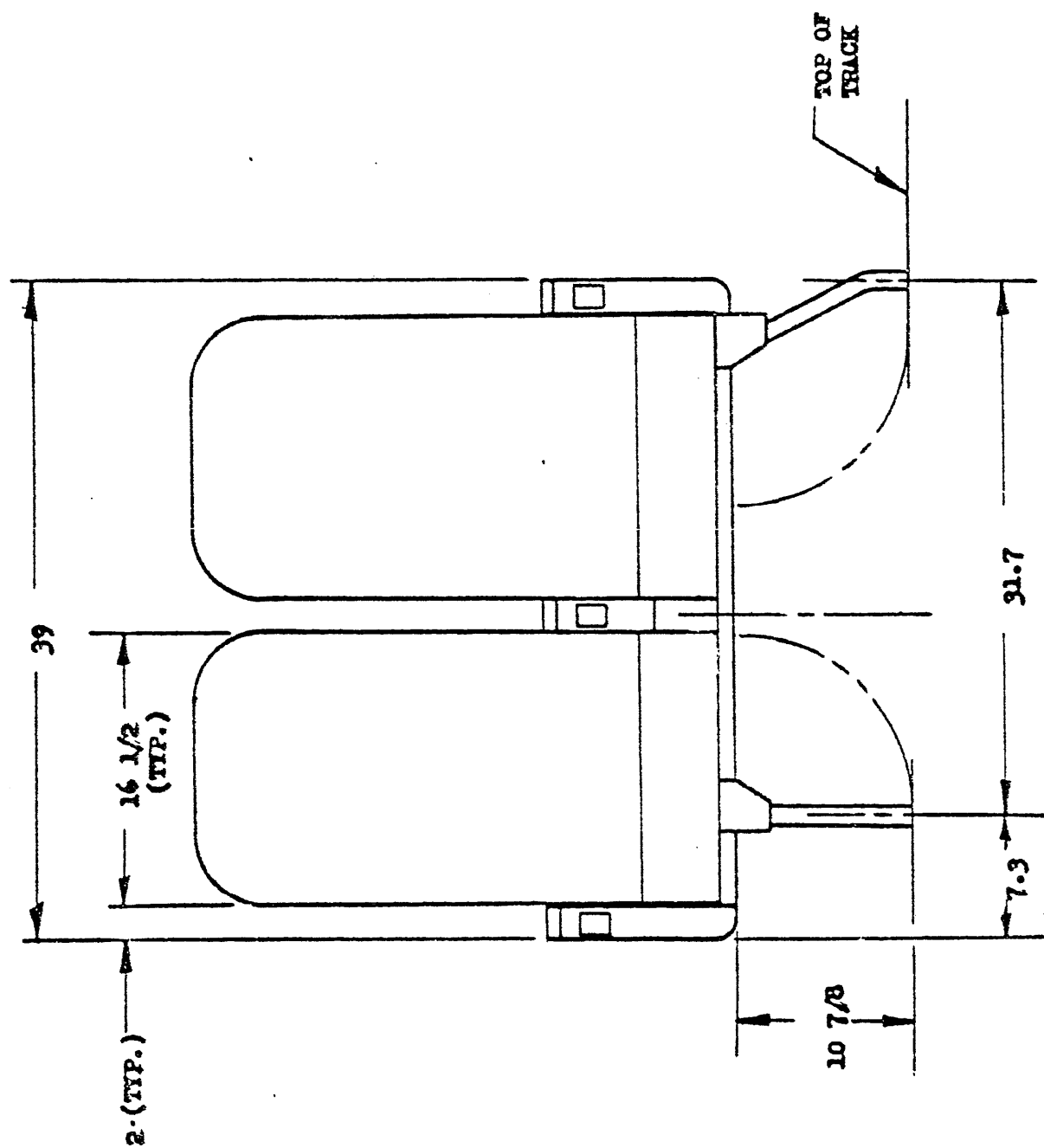


FIGURE 1. DIMENSIONS OF TYPE I SEAT

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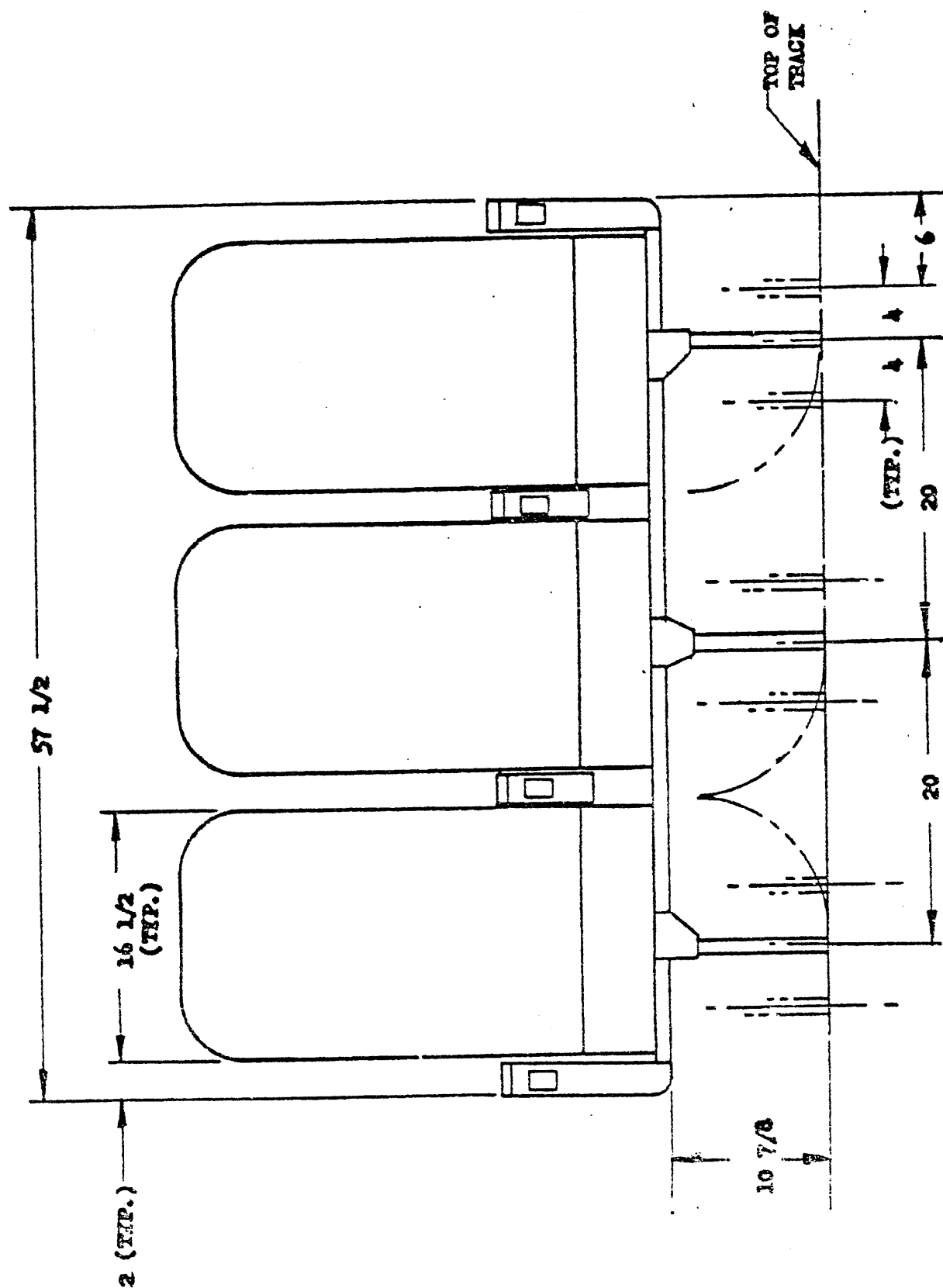


FIGURE 2. DIMENSIONS OF TYPE II SEAT

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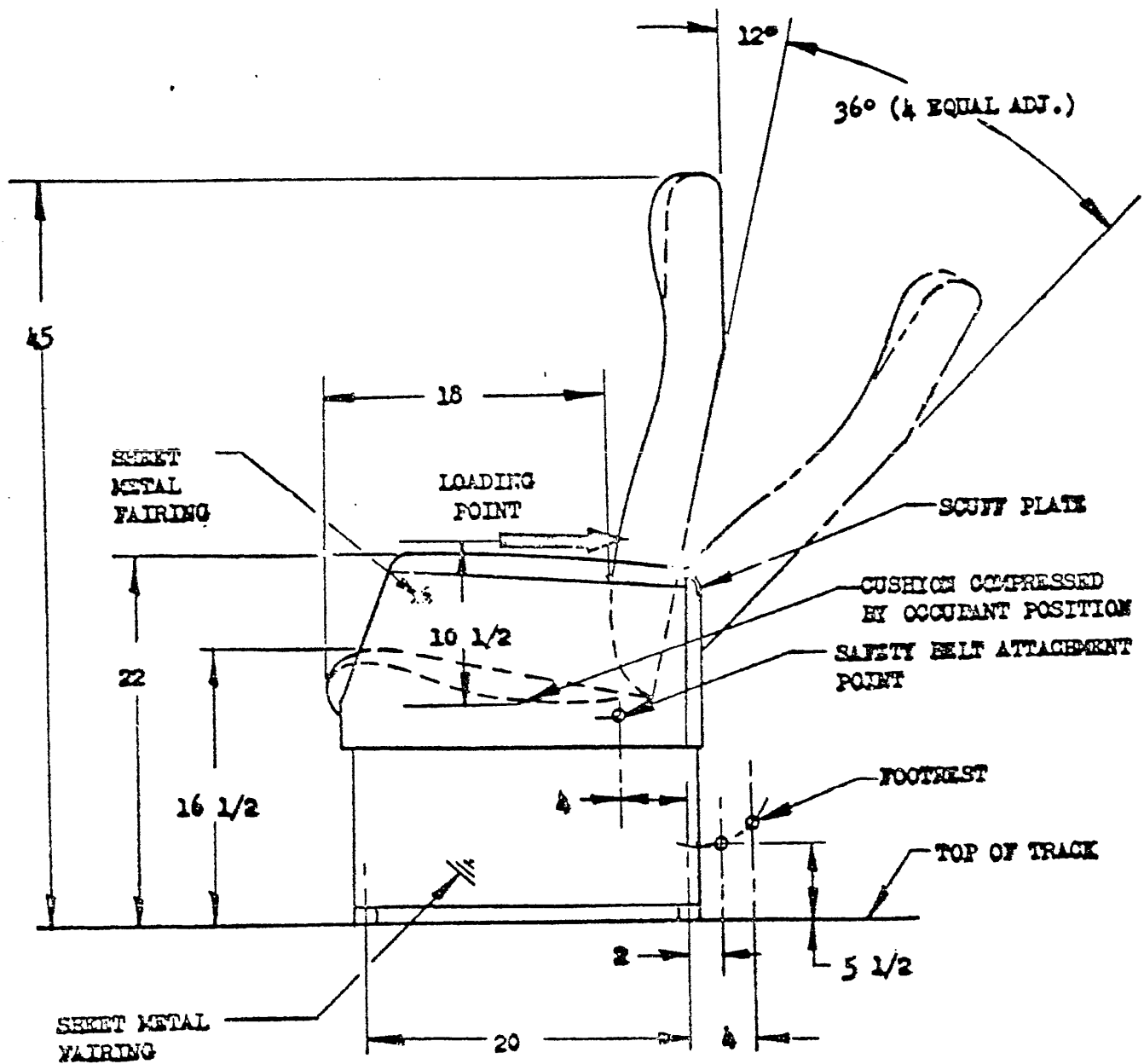


FIGURE 3. SIDE FLEW DIMENSIONS

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into the seat bottom or seat back in a reamer which will provide a continuous smooth surface across two seat bottoms. The upper surface of the arm rests shall be cushioned and covered with materials specified by the procuring activity. The color of the covering material shall be specified by the procuring activity. Provision for the attachment of food trays shall be contained in each arm rest.

3.5.4 SAFETY BELT - A seat belt conforming to Specification MIL-B-8607 shall be provided for each passengers. The design of the belts shall be subject to approval of the procuring activity.

3.5.5 SEAT BOTTOM AND BACK CUSHIONS. - The seat bottom and back cushions shall be fabricated to provide a maximum of comfort and durability and shall be made from materials specified by the procuring activity. The cushion covering material shall be Collin and Aikman "Travail Cord" or equivalent.

3.5.6 BACK ADJUSTMENT - The seat backs shall be individually adjustable in increments of 9 degrees with a positive mechanical lock at each increments. Range of adjustment shall be as shown in figure 3. Spring action shall return the seat back to the normal position when the release handle is operated. The adjustment lever shall not project beyond any part of the seat when the seat back is folded and the adjustment mechanism shall be completely housed within the arm rest assembly.

3.5.6.1 BACK FOLDING - A separate latch shall be provided to allow the back to travel forward and lock in the horizontal position. The back folding mechanism shall be so designed to ensure ease of operation and durability and so that the back can be returned to the upright position when the control is actuated.

3.5.7 FOOT RESTS. - The seats shall be provided with adjustable metallic foot rests located as shown in figure 3. The foot rest shall be designed to stow upward flush against the seat back to provide a maximum clearance under the aft portion of the seat. Maximum leg clearance is required for the occupant of the adjacent seat when the seats are spaced in a high density configuration.

3.5.8 ASH RECEIVERS.- A removable ash receiver shall be provided for each passenger. The ash receivers shall be installed in the arm rests. Each receiver shall have a capacity of not less than 4.5 cubic inches and shall include a snuffer.

5.5.9 FOOD TRAY. - A food tray shall be provided for each passenger. The color and dimensions shall be specified by the procuring activity.

3.6 CONSTRUCTION

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3.6.1 METHODS. - Riveting or welding may be used for assembly of component parts fabricated of metals which are suitable for this type of construction. Fittings and joints which will require removal for disassembly of the component parts of the seat shall be bolted.

3.6.2 PROJECTIONS. -The interior and exterior surfaces of the seat shall be free from projections which could catch or damage the clothing, or scratch the hands of the occupant as he moves his arms about the sides of the seat.

3.7 INTERCHANGEABILITY.-All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable. The drawing number requirements of MIL-D-5028 shall govern changes in the manufacturer's part numbers.

3.8 WEIGHT.- The completed seat, including foot rests and food trays, shall not exceed the following:

Type I - 66 pounds

Type II - 95 pounds

3.9 COLOR.- The color of the normally exposed seat structure, other than the foldable legs, when constructed of aluminum shall be specified by the procuring activity. Aluminum legs shall be color anodized or anodized in accordance with Specification MIL-A-8625. The color shall be specified by the procuring activity.

3.10 FINISH.- Aluminum alloy parts shall be anodically treated in accordance with MIL-A-8625. Magnesium alloy parts shall be treated in accordance with Specification MIL-M-3171. Noncorrosion resistant steel parts shall be cadmium plated in accordance with Specification QQ-P-416, or zinc plated in accordance with Specification QQ-Z-325. The paint shall consist of one thin coat of zinc chromate primer conforming to Specification MIL-P-6889, followed by two coats of aircraft lacquer conforming to specification MIL-L-6805.

3.11 IDENTIFICATION OF PRODUCT. - Equipment, assemblies, and parts shall be marked for identification in accordance with MIL-STD-130.

3.12 WORKMANSHIP. - The seat including all parts and accessories shall be constructed and finished in a thoroughly workmanlike manner. Particular attention shall be given to neatness and thoroughness of welding, riveting, machine-screw assemblies, painting, and freedom of parts from burrs and sharp edges.

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4.1 CLASSIFICATION OF TESTS - The inspection and testing of the seats shall be classified as follows:

a. Reproduction Tests.- Preproduction tests are those tests performed on samples submitted for approval.

b. Acceptance Tests.- Acceptance tests are those tests performed on individual lots that have been submitted for acceptance under contract.

4.2 PREPRODUCTION TESTING

4.2.1 PREPRODUCTION TEST SAMPLE TESTED BY THE CONTRACTOR.- The contractor shall subject one seat of each type to the preproduction test specified in 4.2.4.

4.2.2 PREPRODUCTION TEST REPORT. - After the contractor completes the preproduction tests, he shall prepare a preproduction test report according to MIL-T-9107 and furnish three complete copies of the report to the procuring activity.

4.2.3 PREPRODUCTION TEST SAMPLE FOR THE PROCURING ACTIVITY.- Along with the preproduction test report the contractor shall submit a sample seat to the procuring activity.

4.2.4 PREPRODUCTION TESTS.- Preproduction tests shall consist of all tests described under "Test Methods."

4.3 ACCEPTANCE TEST. - Acceptance tests shall consists of:

a Individual tests

b. Sampling plans and tests

4.3.1 INDIVIDUAL TESTS.- Each seat shall be subjected to the test as described under 4.4.1, "Examination of Product."

4.3.2 SAMPLING PLANS AND TEST.- Sample seats shall be selected at random from each lot on the same material order, in the quantities specified below, for compliance with the tests in 4.4, "Test Methods," except that proof loads shall be applied instead of ultimate loads:

a. Two seats from each lot of 200 or fraction thereof.

b. Three seats from each lot of 500 or fraction thereof above 200.

c. One seat from each additional 500 or fraction thereof above 500.

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4.4 TEST METHODS

4.4.1 EXAMINATION OF PRODUCT. - Each seat shall be carefully examined to determine conformance to this specification with respect to design, standard parts, finish, adjustments, dimensions, workmanship, material, weight, and marking.

4.4.2 FUNCTIONAL TESTS. - The sample seat shall be mounted in a suitable jig or fixture by utilizing the normal track tie down provisions. The seat shall then be subjected to, and required to, withstand without failure the following loads. The attitude of the seat during the test may be changed to facilitate testing provided the direction of the loads with respect to the seat remains the same. Loads may be applied by means of hydraulic or pneumatic presses, jacks, shot bags, or any other suitable method.

4.4.2.1 SEAT BACK.- A load of 4000 pounds ultimate, 2665 pounds proof shall be applied simultaneously to each of the backs acting rearward in a horizontal plane under three separate conditions as follows: directly aft, 20 degrees to the right, and 20 degrees to the left. The loads shall be distributed over the seat backs and applied at the point shown in figure 3. The seat back shall be adjusted to the maximum upright position shown in figure 3 and also at one intermediate adjustment position for these tests.

4.4.2.2 SEAT BOTTOM. - A load of 4000 pounds ultimate, 2665 pounds proof shall be applied simultaneously to each seat bottom. The load shall be equally distributed over the seat bottom.

4.4.2.3 ARM RESTS. - A side load of 200 pounds ultimate, 135 pounds proof shall be applied both outward and inward perpendicular to each arm rest in a horizontal plane. The above loads shall be applied at the center of each arm rest. It is not required that these loads be applied simultaneously on all arm rests.

4.4.2.4 FOOT RESTS.- A down load of 250 pounds ultimate, 170 pounds proof shall be applied to each foot rest in each adjustment position.

4.4.2.5 SAFETY BELT FITTINGS. - A load of 1000 pounds ultimate, 666 pounds proof shall be applied simultaneously to each of the safety belt fittings. These loads shall be applied upward and forward in a single plane which makes an angle of 70 degrees with the horizontal. This corresponds to a tension load of 2000 pounds ultimate or 1332 pounds proof acting on each belt.

4.4.3 CONFORMANCE TO DRAWINGS.- Each sample seat shall be inspected for strict conformance to the pertinent drawings and specifications.

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4.4.4 REJECTION AND RETEST. - When one or more items from a lot fail to meet the specification, acceptance of all items in the lot will be withheld until the extent and cause of failure are determined. After corrections have been made all necessary tests shall be repeated.

5. PREPARATION FOR DELIVERY

5.1 LEVELS OF PRESERVATION AND PACKAGING

5.1.1 LEVEL A.- Each seat shall be preserved in accordance with Specification MIL-P-116, method 1-C. Unit quantities shall be one each.

5.1.2 Level C. - Seats shall be preserved and packaged in accordance with the manufacturer's commercial practice.

5.2 LEVELS OF PACKING

5.2.1 Level A. - Each individual seat preserved and packaged to meet 5.1.1 shall be packed in exterior type shipping containers meeting PPP-B-621, PPP-B-636, or PPP-B-601. As far as practical, exterior containers shall be of uniform shape and size, be of minimum cube and tare consistent with the protection required, contain identical quantities. The gross weight of each pack shall be limited to approximately 200 pounds. Strapping and closure shall be in accord with the applicable container specification and the appendix thereto. Container shall be provided with a case liner conforming to Specification MIL-L-10547 and shall be sealed in accordance with the appendix thereto. The case liner will not be required when the unit, intermediate, or external container conform to Specification PPP-B-636 and is sealed at all joints. End seams, including manufacturer's joint, with tape conforming to Specification PPP-T-60.

5.2.2 LEVEL B. - Each individual seat shall be preserved and packaged to meet 5.1.1, and shall be packed in domestic type exterior containers meeting PPP-B-601. Exterior containers shall be of minimum cube and tare consistent with the protection required. As far as practical, exterior containers shall be of uniform shape and size and contain identical quantities. The gross weight of each pack shall be limited as specified in 5.2.3. Containers shall be closed and strapped in accord with the applicable container specification or appendix thereto.

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5.2.3 LEVEL C.- Each shipping container, insofar as possible, shall contain an identical number of seats, shall be uniform in size, and snugly packed. The gross weight of the fully packed shipping container shall not exceed 200 pounds, whenever practicable. Containers shall meet Consolidated Freight Classification Rules or regulations of other common carriers, as applicable to the mode of transportation,

5.3 MARKING. - Interior and exterior containers shall be marked in accord with MIL-STD-129. The nomenclature shall be as follows:
Seat; Passenger, Aft Facing, Transport Aircraft; Type X or Type II

6. NOTES

6.1 INTENDED USE.- The seats covered by this specification are intended for use in aircraft operated to transport personnel.

6.2 ORDERING DATA.-Procurement documents should specify the following

- a. Title, number, and date of this specification.
- b. Selection of applicable levels of preservation and packaging and packing.
- c. Where the preproduction sample will be sent

NOTICE: When Government drawings, specifications or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.