

MIL-A-8591G
AMENDMENT 5
14 August 1987
SUPERSEDING
MIL-A-8591G
AMENDMENT 4
7 May 1987

MILITARY SPECIFICATION

AIRBORNE STORES, SUSPENSION EQUIPMENT AND
AIRCRAFT-STORE INTERFACE (CARRIAGE PHASE);
GENERAL DESIGN CRITERIA FOR

This amendment forms a part of Military Specification MIL-A-8591G, dated 1 December 1983, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 2

2.1.1, below MIL-STD-810, add:

"MIL-STD-1760 Aircraft/Store Electrical Interconnection System."

PAGE 3

*2.1.2, under NAVAL AIR SYSTEMS COMMAND, delete "NAVAIRINST 3710.7" and its title and substitute:

"NAVAIRINST 13034.1 Flight Clearance Policies"

PAGE 7

3.8 Suspension design criteria, delete paragraph in its entirety and substitute:

"This section defines the interface requirements for ejected stores."

PAGE 8

Delete 3.9 in its entirety and substitute:

"3.9 Store-to-aircraft interface areas. Store-to-aircraft interface areas shall conform to the dimension and location requirements of 3.9.1, 3.9.2, 3.9.3, and 3.9.5. Strength requirements shall conform to 3.9.4."

PAGE 10

Figure 2, Section C-C, delete "UPPER SURFACE OF STORE (REFERENCE)" and substitute: "UPPER SURFACE OF STORE BODY CONTOUR EXCLUDING LOCAL PROTUBERANCES (REFERENCE)".

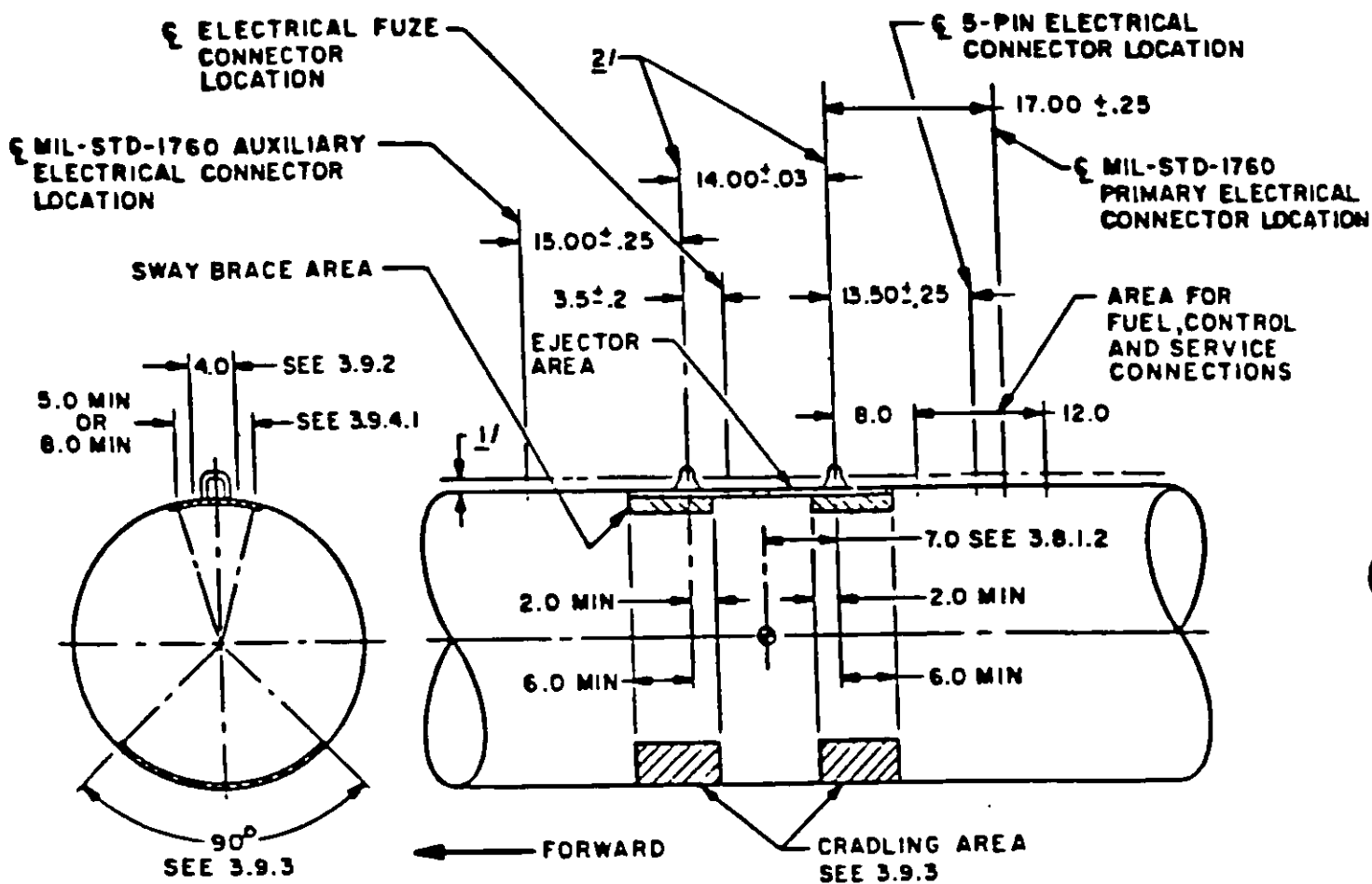
PAGE 11

Figure 3, Section C-C, delete "UPPER SURFACE OF STORE (REFERENCE)" and substitute: "UPPER SURFACE OF STORE BODY CONTOUR EXCLUDING LOCAL PROTUBERANCES (REFERENCE)".

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Delete Figure 4 and Notes in their entirety and substitute:



NOTES:

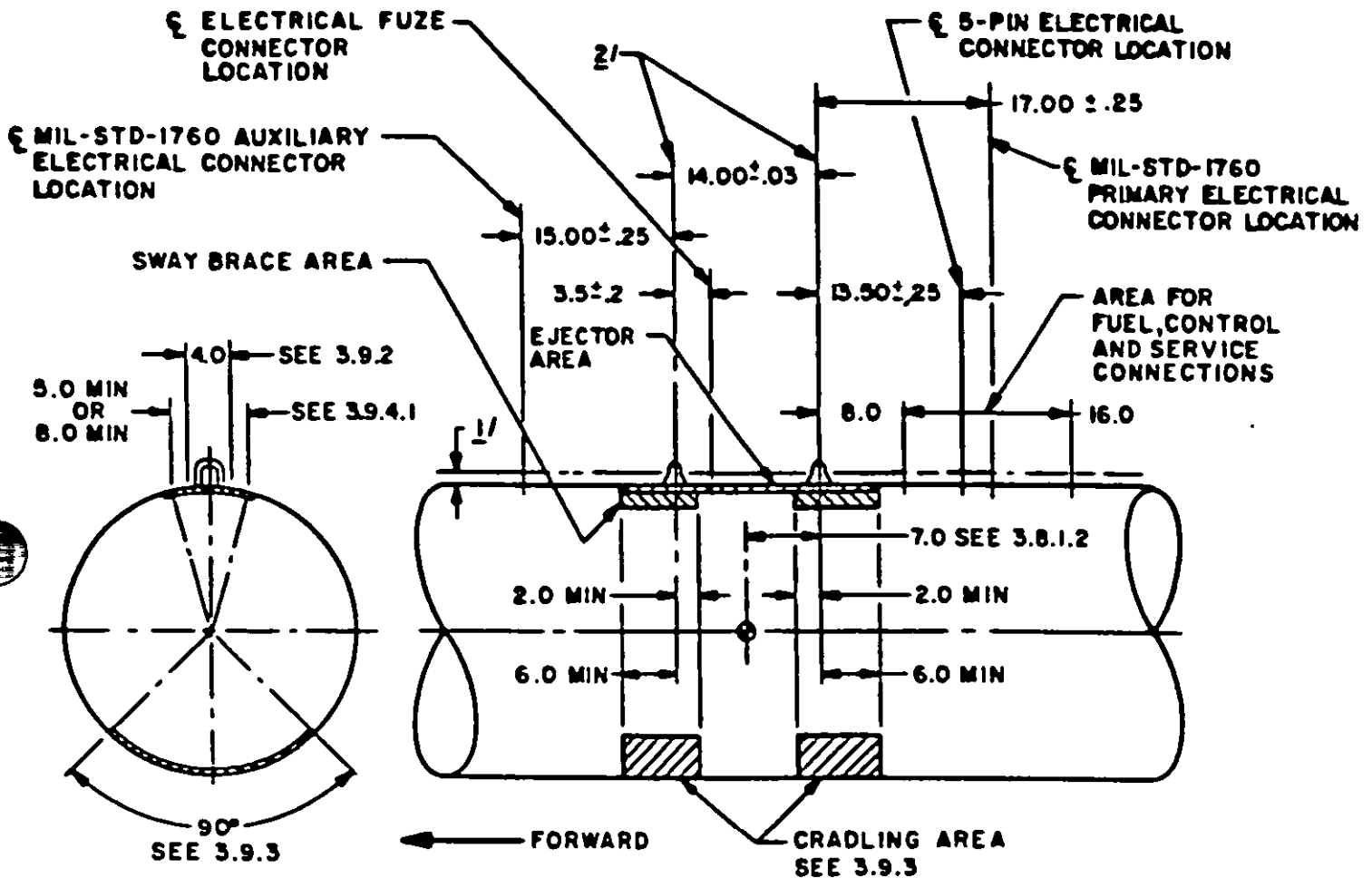
- 1/ A minimum 0.625 inch clearance shall be provided between the rack lower surface and the store upper surface. This clearance shall not apply to rack hooks, braces, ejectors, store lugs or service connections.
- 2/ Lug and lug well axes shall be normal to the store longitudinal axis within $\pm 1/2^\circ$ and in the same plane within $\pm 1/2^\circ$.
3. Dimensions are in inches.

FIGURE 4. Location of store case components, 14-inch lug stores, for carriage on 14-inch lug racks.

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Delete Figure 5 and Notes in their entirety and substitute:



NOTES:

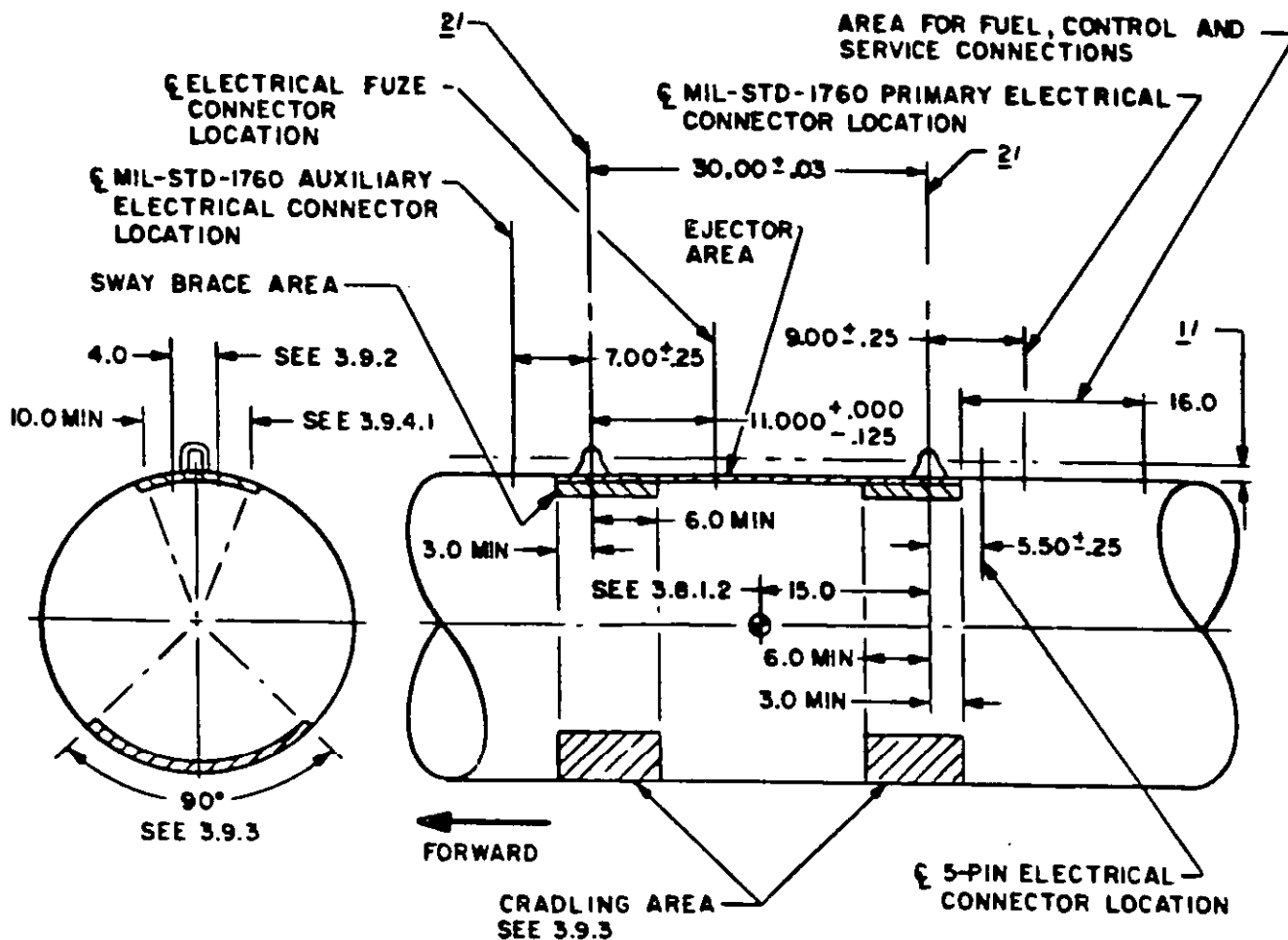
- 1/ A minimum 0.625 inch clearance shall be provided between the rack lower surface and the store upper surface. This clearance shall not apply to rack hooks, braces, ejectors, store lugs or service connections.
- 2/ Lug and lug well axes shall be normal to the store longitudinal axis within $\pm 1/2^\circ$ and in the same plane within $\pm 1/2^\circ$.
3. Dimensions are in inches.

FIGURE 5. Location of store case components, 14-inch lug stores, for carriage on 14 or 30-inch lug racks.

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Delete Figure 6 and Notes in their entirety and substitute:



NOTES:

- 1/ A minimum 0.625 inch clearance shall be provided between the rack lower surface and the store upper surface. This clearance shall not apply to rack hooks, braces, ejectors, store lugs or umbilical connections.
- 2/ Lug and lug well axes shall be normal to the store longitudinal axis within $\pm 1/2^\circ$ and in the same plane within $\pm 1/2^\circ$.
3. Dimensions are in inches.

FIGURE 6. Location of store case components, 30-inch lug stores, for carriage on 30-inch lug racks.

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Below 3.9.4.2, add:

"3.9.5 Electrical connector locations. Locations are specified in Figures 4, 5, and 6 for the following electrical connectors:

- a. Connector(s) specified in MIL-STD-1760.
- b. 5-pin connector used for rocket launchers and dispenser type stores.
- c. Connector for electrical fuze."

PAGES 21 and 22

*3.11.3.1 Dynamic magnification factors, delete its paragraph in its entirety and substitute: "Allowances for dynamic magnification of accelerations imposed on the non-released stores by aircraft catapult, arrested landings, and ejections of adjacent stores are not adequately defined for all aircraft in the load factor envelopes of Appendices A, B, and C. Magnifications of the inertial loads arise due to structural flexibilities of individual aircraft, pylons, and suspension equipment. These conditions should be evaluated on an individual basis. The following paragraphs address many of the usual specific dynamic load requirements and are provided for general guidance. There may be additional dynamic loads that occur for specific store/aircraft combinations that are not included here, but must be developed in concurrence with the acquiring activity."

PAGE 22

*Add the following paragraph:

"3.11.3.3 Adjacent store loads due to release, ejection, or launch. Loads environment shall be established at the support attach points of parent store stations (eg, pylons, bomb racks, and missile launchers) to define the structural requirements for the retention of non-released stores during all types of release modes, such as salvo, single, and ripple. In lieu of analytical data, appropriate flight measured values may be used. This analytically derived or measured environment shall supplement the inertia load factors developed using Procedure A, B, or C. The resulting load cases shall be the limit load conditions."

3.11.4, third line, delete "514.2 and 515.2" and substitute: "514.3 and 515.3".

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*6.2.2, fourth line, delete "3710.7" and substitute: "13034.1."

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6.3.15, below α_A , add: " α_R -Store local angle of attack due to aircraft roll rate, degrees".

PAGE 30

Add:

"6.5 Subject term (key word) listing.

Airborne stores
Aircraft-store interface (carriage phase)
Carriage design limit loads
Ejector areas
Store angles of attack and sideslip
Suspension equipment
Sway brace areas"

Delete "6.5" and substitute: "6.6" for paragraph on "Changes to previous issue."

Below Applicable International Organizations, delete "Standardization Agreement North Atlantic Treaty Organization (Stanag)" and substitute: "North Atlantic Treaty Organization (NATO)".

PAGE 55

*Below Dynamic magnification add:
"Adjacent store loads due to 3.11.3.3 22".
release, ejection, or launch

Under PARAGRAPH, delete "6.5" and substitute: "6.6" for "CHANGES FROM PREVIOUS ISSUE".

PAGE 57

Delete "STORE REINFORCED AREAS" and substitute:
"STORE-TO-AIRCRAFT INTERFACE AREAS".

Below Ejector areas, add:
"Electrical connector locations 3.9.5 20".

Below sway brace pad areas, add:
"SUBJECT TERM (KEY WORD) LISTING 6.5 30".

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The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were 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 relationship to the last previous amendment.

Custodians:

Army - AV
Navy - AS
Air Force - 18

Preparing activity:

Navy - AS
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Review activities:

Air Force - 11, 15

Applicable International Organizations:

North Atlantic Treaty Organization (NATO)
Air Standardization Coordinating Committee (ASCC)