PACKAGING FOR ELECTRONIC CONSOLES

1.0 SCOPE

This standard provides methods for the protection of electronic consoles subject to damage from environmental conditions (i.e., shock, vibration, humidity, etc.) and from field forces (i.e., electrostatic, electromagnetic, radioactive, etc.).

2.0 REFERENCE

2.1 LMSC Documents

Title	Reference

3.2.2 Selection of cushioning to protect all parts of the console should include the following considerations:

a. Rough handling and shipping environment associated with the shipment

b. Proper thickness, density, and load bearing characteristics of the cushioning material

c. Fragility of the article to be shipped

d. Load bearing surface area of the article in relation to the gross weight of the loaded article (pounds/square inch) vs. the cushioning load bearing and creep characteristics under continual load

e. Maximum deflection of load anticipated during handling/shipment

f. Capability of the bonding adhesive to adhere to the cushioning material, floating deck, and container base

g. Adequacy of lateral shear/tensile strengths of the cushioning material

3.2.3 Console parts and components identified in the procurement document, specification, or drawing as being susceptible to damage by field forces, may be removed and packaged in accordance with Paragraphs 3.2.3.1, 3.2.3.2, and 3.2.3.3.

3.2.3.1 Static sensitive item(s) – use only static protective material (QPL MIL–B–81705) to wrap or bag each item.

3.2.3.2 Electromagnetic sensitive item(s) – wrap each item in a neutral material and enclose in a bag fabricated from MIL–B–81705, Type I material. Close by heat seal or tape allowing sufficient material for two additional heat seals.

3.2.3.3 Magnetic sensitive item(s) – wrap each item in a material of ferrous/ferritic composition of sufficient thickness to provide the degree of protection required. Since damaging influence of magnetic fields varies with the degree of susceptibility, shielding effectiveness should be verified prior to shipment.

3.2.4 Shock sensitive, delicate items identified in the procurement document, specification, or drawing as being susceptible to damage may be removed from the console and packaged in wood/corrugated containers with suitable cushioning/dunnage (Ref. PPP–B–601 and PPP–B–636).

3.2.5 When the major assembly consists of multiple subassemblies not normally attached to the major unit, such equipment may be packaged in wood/corrugated containers with suitable cushioning/dunnage (Ref. PPP–B–601 and PPP–B–636).

3.2.6 Any separate item(s) required per part shall be enclosed in separate plastic bag(s) and/or container(s) with suitable cushioning/dunnage and secured within unit container. If separate item(s) are too large to be packed in unit container, a second wood/corrugated container shall be provided with suitable cushioning/dunnage (Ref. PPP–B–601 and PPP–B–636).

3.2.7 All attached cables, cords, wiring, etc., shall be taped and/or strapped and secured to the console. If cables, cords, etc., are too large, they shall be packed in a separate wood/corrugated container with suitable cushioning/dunnage (Ref. PPP–B–601 and PPP–B–636).

3.3.3 A console that is subject to damage from moisture and corrosion shall be enclosed in a waterproof shroud of sufficient thickness to withstand the environmental conditions normally encountered. When applicable, the console shall be enclosed in a water–vaporproof bag/container. Determine the number of units of bagged desiccant (Ref. MIL–P–116, MIL–D–3464) required and distribute the units as evenly as possible around the console. A humidity indicator, placed in a visible location, shall be included to monitor the level of humidity within the barrier. A plug type indicator is preferred as it allows the monitoring of the humidity level without opening the barrier bag. Place indicator away from desiccant. Evacuate excess air and heat seal opening. Allow sufficient barrier material to permit at least two additional reseals.

CAUTION: DO NOT PLACE DESICCANT IN DIRECT CONTACT WITH ITEM (USE BARRIER MATERIAL BETWEEN DESICCANT AND ITEM).

3.3.4 A console containing discrete microcircuits (semiconductors, integrated circuits, printed wiring boards, etc.) susceptible to damage from electrostatic, electromagnetic, or radioactive forces shall be protected with suitable materials, shielding, or through component design precautions to prevent console failure.

5.0 NOTES

5.1 The following information is intended as a guide to suppliers in meeting the requirements of this standard.

Title	Reference
Barrier, water vapor proof	MIL–B–131, Class 1