

## WHAT MAKES NAVY FURNITURE “NAVY”?

The U.S. Navy requirements for shipboard furniture are quite stringent. With a few exceptions commercial and military furniture manufactured for shore-based facilities are unacceptable for shipboard use. To clarify what makes Navy furniture unique, various aspects and characteristics of furniture are discussed below.

### **Material**

The material from which Navy furniture is made must meet high standards for strength, maintainability, corrosion resistance, fire retardance, smoke and toxic fume generation, weight, and aesthetics. Many materials are totally prohibited, such as polystyrenes and polyurethanes. There are other materials the use of which is restricted and approved for certain types of ships or specific furniture applications. For example, wood is presently only approved for mine warfare ships because of its nonmagnetic nature.

The matter of “approved materials” is further complicated by the fact that of two products of identical name and appearance, one may be approved and the other one not, the only difference being the density, gage, or treatment of the product. For this reason, when ordering furniture and accessories, it is important to positively identify the quality and style of the item as indicated on the data sheets. Materials must be in compliance with Military Standard MIL-STD-1623 “Fire Performance Requirements and Approved Specifications for Interior Finish Materials and Furnishings” (Reference 2, Part A, Navy Shipboard Furniture Requirements and Guidance References).

### **Weight**

Furnishings of excessive weight affect speed, payload fuel carrying capacity, and in many cases adversely affect stability. All combatant ships should be equipped with aluminum furniture. Each ship in service is assigned a stability status. Many ships are weight and stability critical. Much of the furniture in habitability spaces is located high in the ship, and few ships can safely accept heavy furniture additions.

### **Maintenance**

The man-hours devoted to maintenance of furniture is considerable and maintenance is therefore an important factor in determining the selection of an item of furniture. Approved materials and finishes have been selected with consideration given to their maintenance-reducing and labor-saving properties. For example, aluminum is superior to steel from a corrosion resistance viewpoint. In the case of decorative finishes, high pressure laminates on desks and tables are easier to maintain than painted surfaces.

### **Size**

Deck areas and stowage volumes are at a premium aboard ship. Navy furniture is therefore not only functional but compact. If not compact, furniture must be sectional, collapsible, or demountable to pass through doors and hatches within the ship. Official requirements for surface ships are that a piece of furniture must pass through a 26-inch by 66-inch access (with 8-inch radius corners) and submarine furniture must clear a 25-inch diameter hatch. Certain items are delivered in a knockdown condition, of necessity, and assembled within the space.

### **Compatibility**

When furniture is selected, a factor easily overlooked is compatibility. Frequently furniture items are excellent as such, but incompatible with each other. Example: chairs used in conjunction with desks and tables must be compatible with each other if they are intended to be used together. Their design should permit a chair to be accommodated in the kneehole space when not in use. Chairs with arms that cannot be stowed within the kneehole space should not be selected. Not only do such chairs contribute to compartment congestion when arms of chairs are too high to clear the underside of desks or table tops, but also repeated impact and abrasion caused by the chair arms striking the desks or tables will cause damage to the chair arms if upholstered, and result in damage to both chairs and desks or tables if the arms are unpadded.

## **Strength**

Furniture aboard U.S. Navy ships has to withstand extremely heavy usage around the clock. The strength of a piece of furniture is derived from its design, the type, quality and quantity of material utilized, and the method of construction adopted. Navy furniture may appear to be identical to a less expensive GSA or commercial item. However, the Navy furniture has been designed to withstand the rigors of sailor abuse, up to 40 degree rolls in storm conditions, ship vibration, and in some cases, high-impact shock resistance.

## **Attachment to Structure**

Except for portable items such as chairs, all furniture items have to be attached to the ship structure to prevent them from becoming "missile hazards" in a seaway. Attachments to structure usually consist of clips welded to the deck, overhead or bulkheads, and sub-bases welded to the deck (drawing, NAVSEA No. 803-5959310). In areas subject to heavy changing deck loads, such as gun blast or helo landing forces, deflection type attachments are required. Deflection fittings allow the structure to flex without crushing or deforming attached furniture. On small ships (i.e. destroyer types and smaller) portable furniture shall be equipped with tiedowns (drawing, NAVSEA 805-1640129). Many items in this catalog have adjustable legs which allow attachment to decks with sheer and camber.

## **Special Purpose Items**

Many furniture items found aboard Naval ships are unique and have no counterpart elsewhere. Furniture aboard minesweepers, for example, must be nonmagnetic. Various chairs found throughout the Fleet have to be shock mounted. The "berths with lockers under" provide both a comfortable sleeping accommodation and adequate stowage capacity for personnel property. These are only a few examples of numerous special purpose items in current use aboard ship.

## **Safety**

The safety aspect is of major concern in the design and manufacture of naval furniture. Contrary to commercial practice, the U.S. Navy has identified approved materials and specifications with regard to combustibility, as well as, smoke and toxic fume generation which can be found in Military Standard MIL-STD-1623. Standard features of naval furniture include: rounded corners on all items; the elimination of burrs and sharp edges from any surface that could conceivably be injurious to personnel even though out of sight (such as the underside of a desk); stops which prevent drawers from leaving their respective cabinets and thumb latches which prevent drawers from accidentally opening. Portable furniture is equipped with nonslip glides in lieu of casters, to reduce motion in a seaway. Many tables are constructed with edge bindings which form a retaining lip, and many mess tables are equipped with lee rails to prevent items from falling off the edge. Table tops and shelves must be firmly attached to the structure to prevent them from coming adrift in heavy seas or under shock conditions.

## **Standardization**

Many items of Navy furniture have been standardized by drawings or specifications. Standardization facilitates the maintenance of furniture by a system of repair and spare parts, and makes total replacement by a like item possible without rearrangement of the entire space. Furthermore, a standard item with a National Stock Number (NSN) and available through the supply system, is normally much less expensive because it was part of a bulk purchase.

## **Shock**

Dependent upon the ship and space classification, furniture may have to meet high-impact shock requirements.

## **Warning**

It should be noted that furniture on GSA schedule or featured in Afloat Shopping Guide, NAVSUP Publication 4900, Section FSC 2090, is not acceptable for use on Navy ships unless requirements of subparagraph 3 under “Furniture Selection” are met.