

## **213 MAINTENANCE - SHIPS AND FLOATING EQUIPMENT**

This basic category provides facilities for maintenance of vessels of all types. These facilities include graving drydocks, fixed cranes, marine railways 9 ship repair shops, and amphibian vehicle maintenance shops.

For waterfront operational facilities, see Category Group 150. For administrative facilities, see Facility Class 600.

### **213 10 DRYDOCK (SF)**

A drydock is a long narrow basin sited in the foreshore of a harbor. Its entrance is closed by a movable caisson or by gates. The basin is so constructed that a vessel may be placed in it and the water removed, allowing the vessel to settle on supports located on the dock floor. In this way the underwater portion of the vessel is exposed for routine maintenance and repair or for those coming into a drydock in a damaged condition. Drydocks vary in size in accordance with the dimensional characteristics of the vessels to be served. Hence, each dock is designed and constructed to satisfy the special requirements of a particular vessel or class of vessels.

The siting of a drydock at an existing naval shipyard entails the analysis of many vital factors. Some recommendations for siting are the following:

1. Locate the drydock near the shipyard shop area for access to piping, electrical, woodworking, metalworking, and similar shops.
2. Locate near sources of power and fresh water.
3. Orient the drydock to require the minimum length of track for gantry cranes.
4. Provide adequate ship approaches to the docks. The approach or turning basin should have a width in front of the dock of at least two times the dock length properly oriented for turning. The depth should be no less than that at the entrance sill of the drydock.
5. Clearance must be provided from structures flanking the approach path of the ship. A distance of not less than 150 feet should be planned between such structures and the side of the ship to provide space for tugs to operate while maneuvering the ship.

For design criteria, see NAVFAC DM-29.

### **213 20 MARINE RAILWAY (EA)**

The function of marine railway is to bring a vessel out of the water for the purpose of making all parts available for overhaul, and to return the vessel to the water when the work is finished. The facility consists of rail trackage from a point on shore to an anchored position at a submerged depth; a railway beaching cradle or dolly for mating a vessel or small

boat; and hauling machinery (hoisthouse) to pull the cradle-mounted vessel up the inclined track to a position on shore.

The capacity of a marine railway is usually given as the weight (displacement) in long tons of the largest ship that can be lifted. The maximum size and capacity of Navy marine railways has been restricted to about 3,000 tons-- that required for the largest destroyer.

The sites chosen for marine railways should satisfy the following requirements:

1. Distance to the Channel. The distance from the highwater line or the bulkhead line to the navigation channels must be adequate for construction of the offshore end of the railway, and must provide a safe fairway for vessels approaching and leaving the cradle.
2. Inshore Area. The space available on land, including the frontage along the shore, must be sufficient for the inshore end of the railway, the hoisthouse, necessary clearances, spur tracks, roadways, cranes and working areas. Some of the larger marine railways will extend approximately 500 feet inshore.
3. Hydrographic Conditions. The natural slope of the bottom along the offshore end of the railway, to prevent silting, should be lower than the grade of the tracks.
4. Foundations. The soil conditions for the length of the railway must be of sufficiently high quality to make possible a design of foundations that will assure rigid control of settlement.
5. Favorable Climatic and Tidal Conditions. The proposed location should be protected as much as possible from strong winds and waves.

For design criteria, see NAVFAC DM-29.

### **213 30 SHORE INTERMEDIATE MAINTENANCE ACTIVITY (SF)**

This facility (SIMA) provides space for the fleet intermediate level maintenance operations. A SIMA has two basic components: maintenance shops and administration. These components may be established separately or as a consolidated complex. Following is a partial list of functions in the maintenance component:

- Machine shop and outside machine shop
- Sheetmetal, shipfitter and welding shops; foundry
- Sandblasting shop
- Boiler shop; automatic combustion control shop
- Internal combustion engine shop; gas turbine shop
- Hydraulic shop; valve and regulator shop; pump and pipe shops
- Air conditioning and refrigeration shop
- Electrical, electronics and crypto equipment shops; battery shop
- Optical shop; gyro compass shop; test equipment shop
- Carpenter, pattern and boat repair shops; lagging and insulation shop

Riggers, canvas and paint shops  
Chemical, metallurgical and non-destructive testing laboratories  
Instrument repair and calibration laboratory  
Noise and vibration-analysis laboratory

The administrative component provides space for:

Offices, central technical and study libraries; records storage  
Classrooms, projection room, audio-visual aid preparation  
Computer operations and analyst record storage

## **213 40 FIXED CRANE STRUCTURES (EA)**

The principal types of fixed cranes are pillar, pillar-jib, and jib. The hammerhead and tower cranes are also classed as stationary when mounted on fixed towers.

See NAVFAC DM-38, for criteria and procedures to be followed in the selection of weight handling equipment for specific installations.

### SHIP REPAIR SHOPS.

Ship repair shops and related facilities included in Basic Category 213, are codes as follows:

213 41 Central Tool Shop (06)(E)  
213 42 Shipfitting Shop (11)(A)  
213 43 Sheet Metal Shop (17)(B)  
213 44 Forge and Heat Treat Shop (34)(F)  
213 45 Welding Shop (26)(C)  
213 48 Quality Assurance Office (V)(W)  
213 49 Inside Machining Shop (31)(G)  
213 50 Optical Shop  
213 51 Weapons Shop (36)(L)  
213 52 Marine Machining Shop (38)(H)  
213 53 Boilermaking Shop (41)(D)  
213 54 Electrical Shop (51)(M)  
213 55 Pipefitting Shop (56)(J)  
213 56 Woodworking Shop (64)(R)  
213 57 Electronics Shop (67)(P)(Q)  
213 58 Boat Shop  
213 59 Abrasive Blast Facility  
213 60 Paint and Blasting Shop (71)(S)  
213 61 Rigging shop (72)(T)  
213 62 Sail Loft  
213 63 Foundry (81)(K)  
213 64 Patternmaking Shop (94)(X)  
213 65 Nuclear Repair Shop  
213 66 Temporary Services Shop (99)(U)  
213 67 Pumphouse, Drydocks

The following category codes have been deleted and the functions formerly performed therein have been reassigned to other shops as indicated:

213-46 Galvanizing Shop (now in 213-49); 213-47 Plating Shop (now in 213- 49). Category codes 213-50 Optical Shop, 213-58 Boat Shop, 213-59 Abrasive Blast Facility and 213-62 Sail Loft are not for shipyard use since these functions are included in other category codes for shipyards. These facilities are intended for other activities which support ships, such as ship repair facilities, etc.

Planning factors, standards, and guides for computing requirements for facilities under this basic category will be provided as they become available. Criteria for certain category codes are excluded from this publication because of the special provisions and variances in the application of criteria for planning ship repair shops. In the absence of specific criteria, the quantitative requirements for shop facilities in Basic Category 213 should be determined on an individual basis, based on the experience and knowledge of the activity involved and the Naval Sea Systems Command.

NOTE:

- (1) Numerals 06, 11, 17, etc., refer to existing shop designations.
- (2) Letters E, A, B, etc., are designations of major functional work grouping which are further subdivided to standard work centers, etc.
- (3) In cases where standard shop descriptions are inconsistent with the existing shipyard organization, space requirements and assets will be included in the shop category code that is consistent with the shipyard organization.

### **213 41 CENTRAL TOOL SHOP (06)(E) (SF)**

The central tool shop is responsible for design, development, manufacture and maintenance of prototype and conventional tooling such as cutting machines, dies, molds, cutters, jigs, fixtures, and special tools. Maintains calibration laboratory and operates the mechanical calibration program. The shop conducts the maintenance program for electrical and mechanical maintenance of numerically controlled and conventional machine tools and plant appliances. This includes installation, preventive maintenance, repair, analytical checkout, rehabilitation, and lubrication. Operates all toolrooms throughout the shipyard, including radiologically controlled areas.

### **213 42 SHIPFITTING SHOP (11)(A) (SF)**

The shipfitting shop is responsible for accomplishment of all work assigned including the fairing and development of ship body plans and hull forms, the fabrication, erection, and installation of all hull strength structure, superstructure, access items, foundations, stowages, fittings, etc., for Naval vessels and systems. It has the primary responsibility for ensuring the structural strength and tightness integrity of the hull envelope and interior compartmentation for Naval surface and submarine vessels. It may also occasionally do structural metal work on tanks, buildings, bridges, cranes, or other structures.

### **213 43 SHEET METAL SHOP (17)(B) (SF)**

The sheet metal shop is responsible for developing, fabricating, and installing ventilation and air conditioning ductwork, fabricating and installing store-room workshop, and stowage facilities, non-structural bulkheads and partitions, the manufacture and installation of label plates, and outfitting of galley, berthing, habitability and office space for Naval vessels.

### **213 44 FORGE AND HEAT TREAT SHOP (23)(F) (SF)**

The forge and heat treat shop is responsible for heat treating, drop forging, hand forging, and other hot working of ferrous and non-ferrous metals; manufacture of heavy forging, rings, flanges, struts, and ships' miscellaneous heavy forgings; drop forging piping fittings of certified quality for nuclear work; and straightening of ships' propellers.

### **213 45 WELDING SHOP (26)(C) (SF)**

The welding shop is responsible for all of the welding, flame cutting, carbon arc gouging, and related processes required by the various shops of the Production and Public Works Departments of the shipyard. In addition to the major involvements of cutting and welding the various structural, sheet metal, and piping materials, operations include repair of castings, cobalting of valves, hard-surfacing of materials subjected to abrasive wear, shooting and welding studs and fasteners, metal spraying, silver soldering, casting, bonding, and welding of lead shielding, and stress relieving of shipboard weldments.

### **213 48 QUALITY ASSURANCE OFFICE (V)(W)**

The quality assurance office is responsible for inspection and tests to determine compliance with specifications, plans, orders, directives, and sound shop and marine practices; non-destructive testing services; and technical direction, consulting and advisory services on those processes, materials, and systems for fabrication and repair to shops. It is also responsible for providing chemical and metallic laboratory services; test instrument calibration; and technical support for test, analyses, evaluation, and procedures for use of metallic and non-metallic materials.

### **213 49 INSIDE MACHINING SHOP (31)(G) (SF)**

The inside machining shop is responsible for performing horizontal boring mill, vertical boring mill, planer and heavy lathe work in manufacturing, alteration, and repair of ship machinery and shipyard manufactured items; performs engine lathe, horizontal and vertical turret lathe, boring, facing, and turning work; performs milling, grinding, hobbing, broaching, shaping, slotting, lapping, honing, balancing work; layout work and drilling on castings and fabrications; performs disassembly, inspection, repair, reassembly, and testing of main propulsion units, pumps, valves, turbines,

air compressors, propellers, and miscellaneous auxiliary machinery. This shop also assembles new manufactured equipment. This shop is responsible for all metal finishing processes including electroplating, dalic plating, galvanizing, and metal polishing.

### **213 50 OPTICAL SHOP (SF)**

No criteria are currently available for this code. This facility is not for use by shipyards. See general discussion under "Ship Repair Shops".

### **213 51 WEAPONS SHOP (36)(L) (SF)**

The weapons shop is responsible for the repair, overhaul, alignment, installation, checking out, testing and calibration of all weapons systems, integrated systems, such as missile systems and associated components, including gun mounts, turrets, saluting batteries, launching pads, mechanical components of fire control, radar antennas and sonar equipment. This shop is also responsible for the repair, overhaul, calibration, adjustments and testing of gunsights, range-finders, torpedo directors, telescopic gunsights, periscopes, binoculars, stereo-trainers, and other miscellaneous repair of instruments, etc.

### **213 52 MARINE MACHINING SHOP (38)(H) (SF)**

The marine machining shop is responsible for the installation and testing of all main propulsion machinery, auxiliaries, rudders, shafting, sea valves, deck machinery, laundry and galley, arresting gear, and catapults on ships under construction or undergoing repair and conversion; repairs, installs, and performs necessary tests on main and auxiliary diesel engines and associated equipment, and hydraulic speed gears on ships; re-fuels, repairs, and tests nuclear reactor plants and associated systems and components.

### **213 53 BOILERMAKING SHOP (41)(D) (SF)**

The boilermaking shop is responsible for the repair, conversion, or building of steam generating equipment used to furnish steam to main and auxiliary machinery, including the fabrication, assembly, installation, test, cleaning, and repair of the steam generators, uptakes, stacks, and blower ducts; the fabrication, repair and test of pressure vessels, incinerators, spark arrestors.

### **213 54 ELECTRICAL SHOP (51)(M) (SF)**

The electrical shop is responsible for accomplishing the installation, repair, maintenance, alteration, troubleshooting, and test of all power, lighting, and interior communication systems and equipment aboard Naval ships and submarines; for manufacture of switchboards, electrical control equipment, and components; for the installation, repair and alteration of

nuclear electrical components and systems; for submarine battery assembly, overhaul, and installation; for repair and calibration of all electrical instrumentation; for installation, repair, and test of gyro compasses.

### **213 55 PIPEFITTING SHOP (56)(J) (SF)**

The pipefitting shop is responsible for accomplishing the layout, fabrication, installation, dismantling, repairs, cleaning, testing, inspection, stress relieving of piping systems including nuclear systems in the shop and aboard ships and submarines, fabricates, installs and repairs insulation and lagging on piping, machinery, vent ducts, bulkheads, and decks; fabricates, repairs, and installs radar waveguide; and performs lead lining and burning for piping, tanks, boxes, and other projects; and installs, repairs, and tests refrigeration systems, air conditioning systems, and oxygen-nitrogen systems.

### **213 56 WOODWORKING SHOP (64)(R) (SF)**

The woodworking shop is responsible for accomplishment of operations performed by boatbuilders, woodcraftsmen, and shipwrights in constructing and repairing wooden and plastic boats, wooden portable buildings and shelters, hollow booms, wooden tanks, practice torpedoes, and flight deck panels; repairing and manufacturing furniture and cabinets; laminating all sizes of wooden members; manufacturing or repairing accommodation ladders; performing dry kiln operations; and installing and repairing all types of acoustic and thermal insulation. Working from plans and specifications, arranges docking blocks to provide for the drydocking of all classes of Naval vessels and directs the positioning of the vessel for proper landing on the blocks. Repairs and installs wooden decks, erects pipe stagings and lifelines; fabricates and installs boat stowages, builds shipping cradles, shores and blocks cargo aboard ships, manufactures and repairs wooden gangways and platforms, fabricates and constructs refrigerated spaces aboard ships. Manufactures plastic items such as pipe, radomes, fairwaters, tanks, antenna cones, and submarine fairing plates. Makes resin foam pours in voids and grouting operations. Installs and repairs plastic laminates and hull damping materials on Naval vessels, installs polyethylene shielding around nuclear reactors. Provides reference lines used in construction, repair, and alteration of all types of ships; takes measurements, heights and locations of ships' characteristics. Applies plastisol coatings; installs linoleum, rubber, asphalt, and ceramic tile.

### **213 57 ELECTRONICS SHOP (67)(P)(Q) (SF)**

The electronics shop is responsible for accomplishing installation, repair, overhaul, modification check-out, adjustment, test, and calibration of radar, sonar, communications, cryptographic data processing, antennas, navigation, and electronic countermeasure equipment and systems on and for surface and submarine vessels and shore stations. The electronics shop is also responsible for repair, calibration, and certification of electronic and nuclear instruments for the shipyard, ships, and shore activities.

### **213 58 BOAT SHOP (SF)**

MO criteria are currently available for this code. This facility is not for use by shipyards. See general discussion under "Ship Repair Shops".

### **213 59 ABRASIVE BLAST FACILITY (SF)**

No criteria are currently available for this code. This facility is not for use by shipyards. See general discussion under "Ship Repair Shops".

### **213 60 PAINT AND BLASTING SHOP (71)(S) (SF)**

The paint and blasting shop is responsible for surface preparation, including sandblasting, for and the application or installation of protective, decorative, and functional paints, coatings, films, and deck floor, and wall coverings. This includes design, layout, lettering, sign making and posters, silk screen processing, artificial and natural wood graining and finishing, all types of painting and preservation on board ship; operation of pickling and chemical cleaning plant for preservation of material; abrasive blasting services; and the laying or installation of terrazzo, magnesite, and concrete.

### **213 61 RIGGING SHOP (72)(T) (SF)**

The rigging shop is responsible for operations performed by riggers, sailmakers, tank and component cleaners, laborers, upholsterers, fabric workers, and diving operations required for repair, overhaul, conversion, and construction of Naval vessels and equipment.

### **213 62 SAIL LOFT (SF)**

No criteria are currently available for this code. This facility is not for use by shipyards. See general discussion under "Ship Repair Shops".

### **213 63 FOUNDRY (81)(K) (SF)**

The foundry is responsible for manufacturing cores for iron, steel, and non-ferrous casting in the Core Unit; preparing and mixing sand, processing and making molds, steel castings, pouring steel from furnaces, melting, and manufacturing steel, and shaking out steel castings from molds after pouring in the steel foundry unit; pouring and melting non-ferrous metals and alloys, processing and making molds for brass castings, and shaking out non-ferrous castings in the non-ferrous unit; processing and making molds for iron castings, pouring iron, melting iron-alloys and shaking out iron castings from molds in the iron unit; clearing castings, shipping finished castings.

### **213 64 PATTERNMAKING SHOP (94)(X) (SF)**

The patternmaking shop is responsible for the manufacture, repair, and alteration of wood patterns required to produce castings, manufacture of metal parts for wood and plastic patterns and metal patterns; manufacture of mock-ups for patterns; manufacture of sheet plastic by forming, fabrication, cementing, and dyeing; manufacture plastic patterns; and receives, stores and issues pattern mock-ups, and models.

### **213 65 NUCLEAR REPAIR SHOP (SF)**

The nuclear repair shop is responsible for the repair of reactor plant components for nuclear ships.

### **223 66 TEMPORARY SERVICES SHOP (99)(U) (SF)**

The temporary services shop is responsible for electrical, piping, and ventilation systems as related to temporary services. Temporary services include compressed air, water, steam, oxygen, electrical power and lighting, ventilation, telephones, inerting, air analysis, shipside sewage connections, communications systems, distilled water for ships' boilers, CO2 fire extinguishers, static dehumidification, electric, steam, and induction heat; besides responsibility for radioactive waste collection systems, delivery and distribution of pure water systems, distribution of temporary electric power, breathing air systems for reactor plants, chilled water and air conditioning systems, filtering for reactor plants, ventilation systems, communications systems involved in nuclear refueling operations, and deoxygenating pure water nitrogen systems. This shop also manufactures and repairs rubber products.

### **213 67 PUMPHOUSE, DRYDOCKS (SF)**

The drydock pumphouse is used to house drydock dewatering pumps and associated equipment.

### **213 68 DIVER CHANGE HOUSE (SF)**

No criteria are currently available for this code.

### **213 70 SHIP SERVICES SUPPORT BUILDING (SF)**

This facility provides all office and shop space to perform close-in support for maintenance and repair work on ships. The purpose of the office area is to support those individuals involved in the progression of shop work on board the ships; i.e., the individual shop supervisor and progressmen as well as the design coordinator. Additionally, quality assurance inspectors responsible for ship work inspection operate from these facilities. The purpose of the shop area is to perform rapid minor work required to be accomplished to support the maintenance and repair

operations; i.e., rather than sending a small item requiring a minor modification back to the parent (home) shop, the modification would be made at the dry dock or pier site.

With the exception of shop space, all requirements are based upon the corresponding category codes providing those particular types of functions, for example, the administrative space for the office area is based on the criteria provided for in category code 610-10, Administrative Office. Required storage should be categorized under category code 213-77, Maintenance-Ship/Spares Storage (Ready Issue/Shop Stores/Miscellaneous). The quantitative requirements for shop facilities should be determined on an individual basis, based on the experience and knowledge of the activity involved and the Naval Sea Systems Command.

### **213 73 LANDING CRAFT WASH RACK (EA)**

The primary function of this facility is to wash down Landing Craft Air Cushions (LCAC) vehicles after every mission in order to remove sand and salt spray. However, this type of washdown pit may be used for other types of amphibious landing craft requiring similar purging. Wash water treatment is incorporated into the design of the facility.

The following criteria applies to JEFF type craft and can be modified to suit other amphibious landing craft as well:

Size of JEFF wash rack:	75 ft wide
	150 ft long

For all other type of amphibious landing craft requiring similar cleaning, select largest craft at facility and add 27 feet to width and 30 feet to overall length, with all ramps, doors, etc., extended to determine size of washdown pit.

### **213 75 AMPHIBIAN VEHICLE MAINTENANCE SHOP (SF-)**

The amphibian vehicle maintenance shop provides special work areas for performing all organizational maintenance functions on the amphibian vehicles of the Marine Corps Amphibious Tractor Battalion and in the case of the Navy, all organizational and intermediate level maintenance on Landing Craft Air Cushion (LCAC) vehicles. In the case of the latter, the depot level maintenance is performed at a Naval Air Rework Facility or contractor plant.

The maintenance shop for the amphibian vehicles of the Marine Corps Amphibious Tractor Battalion includes administrative and training areas as well as storage space for OEM equipment, tools and mountout. Total shop area will vary depending upon the number of companies assigned to the Amphibious Tractor Battalion. A typical Marine Corp facility that would accommodate one battalion, i.e., four companies, would have a space requirement of 42,600 gross square feet of which 700 gross square feet would be dedicated to the mechanical equipment room. The size of the facility would be adjusted accordingly as the number of companies in the battalion increase

or decrease. See Definitive Designs, NAVFAC P-272, Part 4 for appropriate space allocations.

Criteria for a typical LCAC maintenance facility with 54 assigned craft is as follows:

(a) Provide maintenance bay space for 15% of assigned craft. Note: LCAC craft is 48 ft x 90 ft with 15 ft ramps on each end. Accordingly, bay space is increased to 75 ft x 150 ft or 11,250 net square ft. to allow sufficient work area around each craft. Net to gross conversion is 1:1.15, or:

$$\begin{aligned} 11,250 \text{ NSF} \times 1.15 &= 12,937.5 \text{ GSF} \\ 12,937.5 \text{ GSF/craft} \times 8 \text{ craft} &= 103,500 \text{ GSF} \end{aligned}$$

(b) Maintenance shops capable of providing organizational and intermediate level support are as follows:

Propeller shop	3,642 SF
Engine shop	1,101 SF
Hydraulic shop	522 SF
Skirt repair shop	2,216 SF
Welding shop	720 SF
Sheet metal shop	1,260 SF
Gluing shop	726 SF
Electrical shop	1,050 SF
Electronics shop	1,041 SF
Battery shop	396 SF
Tool room	1,185 SF
Locker room	5,375 SF
Maintenance control	900 SF
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	20,134 SF

Net to Gross Conversion: 1:1.25 or

$$20,134 \times 1.25 = 25,168 \text{ GSF}$$

(c) Control Tower/Operations Room is an additional requirement for a LCAC Operational Base and can be an integral part of the maintenance facility by providing an additional 190 GSF. This facility should have an unobstructed view of the parking apron, taxiway, ramp and waterfront in order to allow coordination of operations to preclude accidents. Communications equipment and traffic controllers are housed in this facility.

(d) Squadron Operations/Training Space requirements are met by providing space for classrooms briefing room and a structural maintenance laboratory. The following areas are provided to meet the requirements for a LCAC Operational Base having 54 assigned craft.

(1) Classroom Requirements: Using criteria for category code 171-10 for one 20 person operational class and one 20 person maintenance class = 2 x 20 PN x 22 SF/PN = 880 NSF

(2) Briefing Room: A large classroom is required for general

briefing and combined classes. Maximum loading is 40 persons.  
 Accordingly: 40 PN x 21 SF/PN = 840 NSF

(3) Structural Maintenance Laboratory: Three mock-up equipment  
 modules for skirt, prop, turbine, gear box and electronic bench =  
 219 NSF x 3 = 657 NSF

Therefore:

Classroom	880 NSF
Briefing Room	840 NSF
Structural Maintenance Laboratory	657 NSF
	<u>2,377 NSF</u>

Net to gross conversion factor = 1:1.33 or  
 2,377 x 1.33 = 3,160 GSF

(4) Administration space for 27 officers and 69 enlisted per-  
 sonnel = 96 personnel x 150 GSF/PN = 14,400 GSF

Composite space equipment:	3,140 GSF
	+14,400 GSF
	<u>17,560 GSF</u>

Accordingly, the total requirement for a LCAC maintenance facility sup-  
 porting 54 craft is:

Maintenance Bay Space	103,500 GSF
Maintenance Shops	25,168 GSF
Control Tower/Operations Room	190 GSF
Squadron Operations/Training Space	17,560 GSF
Total	<u>146,418 GSF</u>

**213 77 MAINTENANCE - SHIPS/SPARES STORAGE (READY ISSUE/SHOP STORES/MTSC.) (SF)**

Storage facilities for miscellaneous equipment or goods related to ship  
 maintenance facility support will be provided only where it can be indi-  
 vidually justified. There are no criteria for this type of facility.  
 General information on normal stacking heights, SF per measurement ton  
 requirements, and other parameters are provided in Category Code 440  
 series.