SAMPLE

DECK DEPARTMENT PRE-INSPECTION REPORT
(MSTSPAC Report 9030-2)

1. Are the current USCG rules and regulations in proper order and filed in the ship's Maintenance Office?

2. Does the ship currently meet USCG requirements?

3. Are all deficiencies, which need to be corrected to meet USCG requirements, entered in the ship's repair list for accomplishment prior to the annual inspection?

4. Has all equipment been examined and requisitions submitted for items found defective?

5. Have provisions of USCG Regulations 78.47 and 78.50 or 94.37 and 95.37-50, as appropriate, been complied with as to numbering, marking and stenciling?

6. Are required official documents, i.e., load line certificates, classification certificates, admeasurement certificates, etc., and a complete file of ABS reports of survey and/or damage on board?

7. Are there any material waivers existing against the ship? If so, list each one.

8. Have requisitions been made for missing and unreadable data plates on boats, davits, winches, etc?

9. Are check lists for items inspected by the USCG prepared, showing location and number of each item?

10. Is there a list of all ventilation dampers, manual and fusible link types, available on board?

11. Have ship's officers been briefed as to the inspection and their respective duties?

To the best of my knowledge and belief, on the date shown below, this ship is in all respects in conformance with applicable ship's inspections laws and USCG rules and regulations, except as mentioned above.

Date: _____ Signature: _____
TYPE NAME AS
SIGNED ABOVE
Master

Figure 6-2

SAMPLE

ENGINE DEPARTMENT PRE-INSPECTION REPORT
(MSTSPAC Report 9030-2)

1. Have all engine department officers reviewed the outline for USCG inspection, 840B Engine Inspection and 840H Drydocking?

2. Has the inspection check list been reviewed and is all listed equipment maintained in readiness for operational tests?

3. Are the latest chapters and amendments of the USCG regulations on board?

4. Are there any outstanding USCG deficiencies or waivers in the engine department.

To the best of my knowledge the engine department of this ship, on the date shown below, is in all respects in conformity with the applicable ship inspection laws and USCG rules and regulations, except as mentioned above.

Date:_____

Signature:_____
TYPE NAME AS SIGNED ABOVE
Chief Engineer

Figure 6-3

6.18 Inspection sequence (deck department).

a. Following is a guide for ship's officers of the routine followed by the USCG inspectors in the annual inspection of ships. Individual inspectors, however, may vary somewhat from the outlined procedure.

b. The inspectors will require checkoff lists giving the location and data on the following:

1. Boat davits, lifeboats and winches, all name plate data.
2. Fire extinguishers.
3. Fire hose and hydrants.
4. Number of life preservers on board and required.
5. Number of ring life buoys on board and required and type.
6. Number of fire axes on board and required.
7. Watertight doors below main deck.
8. Watertight doors above main deck.
9. Fire screen doors.
10. Draft stop doors.
11. Remote valve reach rods.
12. Air vents from fuel and other tanks.
13. Number and location of fixed CO_2 system.
14. Number and location of CO_2 control valves.
15. Number and location of steam smothering apparatus.
16. Fuel capacity and grade of fuel approved to carry.
17. Number of detex watchmen stations.
18. Number of Zonit fire detecting stations.
19. Number of Zonit fire detecting test stations.
20. Number of general alarm bells.
21. Number of CO_2 drain plugs.
22. Number of manual dampers and controls.
23. Number of fusible dampers.
24. Number sounding stations state whether double bottom, fresh water, bilge, etc.
25. Number of shore fire main connections.
26. Number of emergency light fixtures.
27. List emergency equipment.
28. List drain valves overboard and inboard drains.
29. Number logs, taffrail, leads, hand and deep sea.
30. USCG Stability letter.
31. Lead line certificate date of issue, endorsement and expiration date.
32. Deratization certificate, date of expiration and issue.
33. Certificate of ownership.
34. Ship characteristics information.
35. Anchor and chains certificate.

36. List of log book data on the following:

(a) Dates of fire and boat drills.
(b) Dates of firing Lyle guns.
(c) Date of and deepest draft of the ship.
(d) Date and place of last drydocking.

37. Station bill for examination.

c. Prior to boarding ship, the USCG inspector will check the name of the ship on bow and stern, the draft markings forward and aft, and the load line marks midships.

d. Upon boarding ship the inspector will proceed to the master's cabin where the plan of inspection will be arranged.

6.19 Inspection of boats and equipment.

The inspector will inquire into the status of the boats and equipment and will request the following equipment be assembled at a convenient location, to be inspected at the inspector's convenience.

1. Life preservers.
2. Fire extinguishers.
3. Ring buoys.
4. Fire axes.
5. Oxygen breathing apparatus.
6. Gas masks.
7. Flame safety lamps.
8. Emergency running lights.
9. Log, taffrail, lead lines.
10. Lyle gun and equipment.

6.20 Inspection of cargo holds.

Cargo holds will be inspected for the following equipment, and if steam smothering is used in holds, the inspector will require it to be put in operation for inspection:

1. Reach rods and guards.
2. Remote valve operation.
3. Strainer plates and roseboxes.
4. Access ladder.
5. Sounding tubes.
6. Scuppers and drains.
7. Electric wiring.
8. Steam and CO_2 lines.
9. Hatch coamings.
10. Hatch covers.

6.21 Lifeboat inspection.

The lifeboats will be lowered into the water and released to test the releasing gear. The boat will then be hoisted to stowed position to test the limit switches. This shall be done prior to the stripping of the boats and will be considered an operational test. Boats in the rotating pool which have not been on board a year need not be stripped, in accordance with instructions in Chapter 82. Upon completion of the

operational test, the inspector will check the following:

1. Outside of hull by hammer testing.
2. Inside of hull by hammer testing bottom and floors.
3. Thwarts.
4. Bands for holding tanks, plugs, row locks and air test tanks.
5. Test operate hand propelling gear.
6. Observe weight test of boats.
7. Provisions and rations.

6.22 Inspection of fire fighting equipment.

a. The inspector will observe the discharge of fire extinguishers soda acid and foam. The chemical shall be replaced. The inspector will request to see the spare charges required and the safety valves. The CO_2 certificate will be provided by the administrative commander upon completion of the inspection and weighing.

b. The inspector will check all fire stations, the operation of fire screen doors and observe the testing of fire hoses under pressure. The hoses shall be restowed by the ship or yard.

c. The inspector will observe operations of the watertight doors by power and manually. The inspector may elect to observe the general alarm system and fire detecting system for audibility and operation during this period.

6.23 Inspection of navigating equipment.

The inspector will inspect the following navigating equipment:

1. Test operate steering gear at all stations, including emergency steering.

2. Test operate air whistle and steam whistles.

3. Test operate signaling devices to include engine room telephone and telegraph, blinker and signal lights system.

5. Special equipment required by Rules of the Road, e.g., anchor balls, foghorn, fog bell, deep sea sounding apparatus, ship's name boards on side of wheelhouse, bridge pyrotechnics. A complete set of pyrotechnics as required for lifeboats shall be available on the bridge of the ship. The Lyle gun and equipment will be inspected for compliance with regulations. The stability letter will be checked.

6.24 Repair list.

a. When the master is notified that his ship is scheduled for a Coast Guard inspection, he shall compile a repair list for that availability. The list shall contain the following:

1. All known defects to hull, lifeboats, boilers, machinery and equipment, which will require repair in order to conform with Coast Guard requirements.

2. Items of work necessary to be ready for the Coast Guard inspection.

3. Items of repair necessary to maintain the ship in high state of readiness to perform its mission.

b. One trip prior to arrival for the inspection availability, the work list shall be submitted to the administrative commander. On arrival for the inspection availability, the repair list shall be resubmitted with any additional items covering deficiencies occurring or found since submission of the first list. New items shall be identified as such.

c. Repair items requested or required subsequent to the repair arrival conference shall be accompanied by a letter from the department head concerned, setting forth the following:

1. Condition of item requiring repair.
2. Reason condition was not known prior to arrival.
3. Steps taken prior to arrival to determine necessity of repairs.

6.25 General inspection items.

a. The inspectors will make a general inspection of the following:

1. Condition of superstructure.
2. Doors on main and boat decks.
3. Permanent ladders.
4. Test operation of anchor windlass.
5. Guards and rails at sides of ship.
6. Electric wiring.
7. Paint lockers for compliance, CO_2 or steam smothering.
8. Accessible voids, tanks, cofferdams and spaces.
9. Side ports, port lights for fit gaskets and dogs.
10. Ventilation dampers, manual and fusible link.
11. Debarkation ladders, lights and markings.

b. The safety of the ship is the primary concern of the annual

inspection. When testing hose, extinguishers and other safety features, ships shall not be stripped of equipment beyond the minimum required to handle emergencies. Fire lines shall be connected to shore mains as a precautionary measure and arrangements made for communication with the fire department located ashore.

c. Before undertaking repairs requiring the use of burning or welding, a Gas Free certificate shall be obtained in way of work performed and an adequate fire watch shall be maintained.

6.26 Inspection sequence (engine department)

a. The sequence of the annual inspection in the engine department is usually determined by the boilers, therefore, work on boilers shall be expedited. The Coast Guard inspector will observe the boilers and do other inspecting as time permits. The chief engineer shall screen repair requests so that unnecessary jobs are not being accomplished that will interfere with the inspection.

b. The following check-off lists have been prepared to enable ship's personnel to make pre-inspection checks. The outline of CG 840-B, Annual Inspection Report, Boilers and Machinery of Steam and Motor Vessels, shall be reviewed in preparation for the inspection.

BOILERS (USCG Regulation 57.10-1)

1. Are firesides clean?
2. Are safety valve gags ready?
3. Is safety valve relieving gear connected?
4. Do you have a list of all repairs since last inspection?
5. Is complete boiler data available?
6. Is safety valve data available?
7. If ship is freighter: Is hydro required at this annual? See USCG Regulation 61.20. (Quadrennial for freighters.)
8. Are steam line blanks handy?
9. What is the thickness of main steam line? Are boiler gages accurate?

FUEL OIL

10. Are all vents and ball checks of all F.O. goosenecks in proper order?
11. Are internal F.O. valves free (routine logged)?
12. Is remote F.O. stop free (routine logged)?
13. Are all F.O. and air interlock valves in order?
14. Are F.O. samples maintained of each lot received?
15. Are all valves properly tagged and marked?
16. Are all sounding pipe self closing valves in order?
17. Are all oil drip pans in place?
18. Are areas clean of fire hazards?

FIRE FIGHTING EQUIPMENT (USCG Regulations 75.00 and 95.00)

19. Review Section 75.00 or 95.00, as applicable, to insure that all required equipment is in order.
20. Is sand box full and scoop in place?
21. Are two portable extinguishers available at firing platform?
22. Is fixed system in order? Have you checked it?
23. Are required fog nozzles and applicators in order?
24. Are all parts marked in accordance with USCG Regulation 78.47? Are extinguishers located in steering engine room, at emergency generators, etc.?
25. Are steam smothering cabinets in proper order?

EMERGENCY EQUIPMENT

26. Are all emergency operating connections for the main unit on board?
27. Is shaft alley W.T. door in order?
28. Is the submersible bilge pump in order?
29. Is the emergency generator in order?
30. Is the emergency fire pump in order?
31. Are alarms, bells and signals properly marked for identification, per USCG Regulation 78.47?
32. Have all circuits and alarms been checked for proper operation?
33. Has reefer alarm been checked?
34. Equipment, even if in excess of requirements, must be in operation?

ELECTRICAL

35. Are motors, generators and control boxes clean?
36. Have all resistor rooms and switchboard been checked for cleanliness and fire hazards?
37. When were crew and passenger quarters last checked for renewal of hazardous wiring?
38. Are all vapor globes in place throughout the ship?
39. Have all lights under floor plates been checked for proper operation, are globes and guards in place?
40. Are all lifeboat limit switches in order?
41. Have all signal circuits between engine room bridge, steering engine room, etc., been checked for proper operation?
42. Have all navigation lights been checked with the second officer?
43. Are all batteries (emergency, alarm, diesel, radio) in good condition, fully charged and properly installed in lead trays?
44. Are all switchboards fitted with non-conductive mats or gratings, front and rear.
45. Are recent megger readings for main motors on TE ships available?
46. Are all suitable boards and cubicles adequately protected by locks, signs, interlocks, etc., to prevent entry by unauthorized personnel?

LISTS REQUIRED

47. List of all relief valves, giving location, manufacturer and all operating data.
48. List of all available blue prints and instruction books.
49. List of all safety valves and boiler spares showing location.
50. List of all sea valves giving size, location and type of valve (for drydocking).
51. List of all non-fired pressure vessels giving manufacturing data and data stamped on shell giving location, per USCG regulation. 54.01. (Examination - biennially).

GENERAL

52. When were all stations of the steering gear last tested?
53. Are changeover instructions posted in steering engine room as required by the USCG?
54. Are log entries made as required by USCG Regulation 78.37?
55. Are all engineers' licenses posted as required?
56. Are all remote operated bilge valves in proper operation. When were they last tested and logged?

6.27 USCG life saving equipment requirements for MSTS ships*

OCEAN PASSENGER SHIPS

Item	Approved by	MSTS Ships	Regularly Inspected Ships
Lifeboats	CG	50% (minimum)	100%
Life floats	CG/USN	Sufficient to total 150% when added to percent accommodated in lifeboats	0
Buoyant apparatus	CG	0	
Life preservers:			
Adults	CG/USN	100%	
Children	CG/USN	10%	

OCEAN FREIGHT SHIPS

Lifeboats	CG	200%	200%
Life preservers	CG/USN	100%	100%

*Merchant Marine Safety Memo #28-52 (USCG)

6.28 Inspection and certification of work performed by private contractors. *

COMSTSPACAREA is convinced that reductions in the cost of ship repair can be achieved through conscientious and energetic participation by the ship's personnel. These personnel are experienced officers and men who for many years have served MSTS in all types of ships. They use the ship's equipment and should be the most informed of its material and operable condition, both before and after repair. Moreover, since they are held strictly accountable for the condition of the equipment, they must be afforded the opportunity to certify as to satisfactory or unsatisfactory completion of the work request.

1. Job Orders. The Chief Engineer or the appropriate ship Department Head, as directed by the Master, and the assigned representative of the Maintenance and Repair Office, accompanied by the Master at his discretion, will inspect and certify the acceptability of the work authorized on MSTSPAC Form 4710/8 (Completion Report for Work Accomplished under Master Ship Repair Contract). The Master, in appropriate cases, will inform the M&R Officer in writing, whenever in his opinion, the contract work is not acceptable, including sufficient details to identify the unacceptable condition.

2. Service Orders. After appropriate inspection by the Chief Engineer or cognizant ship Department Head, verified by the Master at his discretion, the Master or Chief Engineer will certify the satisfactory or unsatisfactory accomplishment of service orders on MSTSPAC Form 4710/22 (Completion Report - Work Accomplished under Service Order Contract).

CHAPTER 7

DOCKING INSTRUCTIONS

7.1 Applicability of BUSHIPS Manual.

Chapter 7, BUSHIPS Manual, is applicable to civil service-manned (USNS) ships.

7.2 Shifting of weight or ballast in ships in drydock.

In accordance with Article 7-38 of the BUSHIPS Manual, no weight or water ballast shall be shifted, added or removed while the ship is in drydock unless specifically authorized by the docking officer. When permission to shift weight is given, the responsibility for keeping an accurate record of the amount and location of the change of weights rests with the master. In all cases, weights shall be so disposed as to insure having the ship lift from the blocks without taking a list.

7.3 Docking and undocking procedures.

a. Immediately prior to the time the ship is to be docked, the master shall have all tanks sounded and a record of the soundings made.

b. Prior to undocking, all tanks shall again be sounded and the soundings compared with the pre-docking soundings to determine whether any change has taken place during the time the ship was in drydock. If it is determined from the comparison of the soundings that there has been a change effected, the docking officer shall be notified and a shift of water or oil will be made to effect a distribution of weight similar to that shown by the pre-docking soundings.

c. During the undocking the master shall station personnel throughout the ship to investigate and report immediately any leakage or flooding. Lines of communication will be maintained with the docking officer until the master is assured that the ship is safely waterborne.

7.4 Docking plan.

Each ship will keep a docking plan on file in the Maintenance Office. Records concerning the last drydocking, including the location of the blocks, last underwater inspection and measurement of shaft and strut weardown, shall be kept current.

CHAPTER 8

TRIALS

8.1 Applicability of the BUSHIPS Manual.

Chapter 8, BUSHIPS Manual, is not applicable to in-service (USNS) ships.

8.2 Builder's Trial Data.

Builder's Trial Data is available on board most MSTS ships. Some ships, however, have been converted or altered to such an extent that the Builder's Trial Data is no longer useful. In such cases, underway trials will be conducted to determine the water rate of boilers and equipment under present conditions. Such information, as available, will be forwarded to the individual ships concerned.

8.3 Collecting trial data.

a. Much useful information that will assist in the economical planning of repairs and assure dependable continuance of operation can be obtained by the operating engineer by periodically recording the normal steady steaming data, as follows:

1. Main feed pump rpm or strokes per minute
2. Condensate pump rpm main and auxiliary
3. F. D. blowers rpm
4. F. O. pump rpm or strokes per minute. (Unless the by-pass system is used).
5. Fuel in gallons per hour

b. Such data shall be obtained under similar conditions each time. Items as the taking of extra feed, operation of condensate or feed pumps recirculation shall be recorded. The close observance of this data at consecutive trials may lead to or may be a direct indication of difficulties to be encountered in the future. The following is cited as an example:

EXAMPLE: Two consecutive trials three months apart indicate that it is necessary to operate the main condensate pump at 200 rpm more to carry precisely the same load. The pump is known to be in good condition. Other readings are fairly consistent. This indicates condensate by-passing and could be a feed heater or drain cooler leak. A positive check can then be made by cutting out the suspected heater or drain cooler while observing the load on the condensate pump.

CHAPTER 9

READINESS AND CARE OF SHIPS IN INACTIVATED STATUS

9.1 Ships in reduced operational status.

When ships are placed in reduced operational status (ROS), the following procedures shall be followed:

1. All possible topside closures shall be secured to reduce damp air from entering the ship.

2. Those compartments not actually in use shall be cleaned, thoroughly dried out and secured.

3. All machinery and electrical equipment shall be tested weekly. Equipment not essential to the current mission of the ship shall be kept operable and tested weekly unless approval has been granted to preserve the equipment in place.

4. Strip heaters shall be energized when necessary.

5. In areas where dampness is prevalent (close to electrical equipment), lamp banks shall be installed and energized as required.

6. Boilers not steaming shall be maintained completely full.

9.2 Tests and records.

Weekly tests and inspections shall be maintained and logged.

CHAPTER 12

HULL FITTINGS

12.1 Applicability of the BUSHIPS Manual.

Chapter 12, BUSHIPS Manual, is applicable to civil service-manned (USNS) ships.

12.2 Hull fittings with deck closures.

Hull fittings with deck closures are maintained in accordance with American Bureau of Shipping and Coast Guard regulations. Log entry shall be made whenever air ports, side ports or garbage chutes below the weather deck are opened and closed. Air ports below the weather deck shall have a special locking key in accordance with Coast Guard regulations.

12.3 Locks.

Padlocks shall be used on lockers, store rooms and similar type security enclosures. Staterooms, offices and cabinet doors shall be equipped with built-in tumbler-type locks. These locks may be repaired by requisitioning and installing new lock barrels. Duplicate keys shall be obtained by requisitioning "as per sample."

CHAPTER 15

GASOLINE STOWAGE AND EQUIPMENT

15.1 Applicability of Code of Federal Regulations.

The requirements for handling, stowage and transportation of explosive or other dangerous articles or substances shall be as directed in the Code of Federal Regulations, Title 46 - Shipping, Parts 146 to 149.

CHAPTER 16

ACCESS OPENINGS

16.1 Applicability of the BUSHIPS Manual.

Chapter 16, BUSHIPS Manual, is applicable to civil service-manned (USNS) ships.

16.2 Closing of access openings.

Access openings to voids, cofferdams, double bottoms or deep tanks shall normally be kept closed.

CHAPTER 17

BOOMS AND CRANES

17.1 Testing of cargo gear.

Cargo booms and assemblies shall be tested annually in accordance with requirements of National Cargo Bureau Inc. *

17.2 Hatch tent pendants.

All cargo booms will be rigged with a 5/8" wire rope pendant and a 10" wide mortise block to carry a $3\frac{1}{2}$" manila rope gantline, so arranged that any type hatch tent may be rigged therefrom.

17.3 Preventers.

All cargo booms will be rigged with a suitable full length wire preventer, the eye of the preventer to be secured by passing over the end of the boom, the end of the preventer to be belayed on deck. The standard procedure accepted as the best marine practice shall be followed: Set up the boom guy as taut as possible. Stretch the preventer, following the lead of the boom guy, haul taut and belay. Next ease off boom guy until preventer takes a partial strain; this will prevent jerking and keep the boom under control should the boom guy part.

CHAPTER 18

RIGGING

18.1 Applicability of the BUSHIPS Manual.

Chapter 18, BUSHIPS Manual, is applicable to civil service-manned (USNS) ships, except as modified below.

18.2 Inspection.

There are two types of cargo gear currently in use in MSTS ships; the single part, nominally rated five-ton gear and the multi-part, heavy lift gear. Gear inspections are scheduled according to the extent of use. Because of more frequent use, the lighter gear is inspected oftener.

18.3 Tests and records.

a. The annual testing of rigging shall be accomplished in accordance with the requirements of the National Cargo Bureau Inc. *

b. A record of work accomplished shall be maintained on the appropriate hull and machinery history cards, which will be available for examination by staff inspectors.

18.4 Progressive maintenance.

a. To maintain cargo gear properly and keep costs within the stringent budgetary limitations imposed upon MSTS operations, masters shall implement a program of progressive maintenance on all cargo gear. By careful planning and by scheduling one set of gear at a time, a thorough and complete overhaul of the equipment can be accomplished by the ship's force over a year's period.

b. The progressive maintenance schedule shall cover the following equipment:

1. Topping lifts and cargo falls. Inspect wire rope each time prior to use, but not less than every 60 days.

(a) Care: Slush down as determined by inspection and by the requirements of severe weather.

(b) Renewal: Wire rope which is properly selected and maintained usually lasts several years. If flats, kinks, cuts or

fraying are noted, the wire shall be removed.

2. Vang pendants, slings and standing rigging. Inspect every 30 days (including grounding wires.)

(a) Care: coat with proper preservative as necessary and insure that coating remains intact.

(b) Renewal: not required unless wire is damaged.

3. Vang falls. Inspect rope each time prior to use, but not less than every 30 days.

Renewal: When inspection reveals cuts and frays, rope shall be renewed.

4. Shackles and sockets. Each time the ship's cargo gear is to be used, a visual inspection shall be made for cracks, bent pins, pins not secured, distortion, etc. Pull pins semi-annually for further inspection.

5. Blocks. Prior to any use of the gear, the blocks shall be visually inspected. Pins and self-lubricating bushings shall be pulled for examination once a year.

Care: lubricate all blocks without self-lubricating bearings once each trip prior to use. Lubricate every three days during loading period. Keep all blocks which are exposed to the weather covered with preservative. Overhaul ship's spare blocks on a rotation program. Blocks beyond economical repair shall be replaced on ship's requisition.

6. Goosenecks. Inspect visually immediately prior to each loading period. Lift for inspection and cleaning of bearing annually.

Care: lubricate prior to use of boom at each loading period.

7. Heel blocks and topping lift swivels. Inspect visually prior to each loading period.

8. Boom heel pins. Inspect visually prior to each loading period. Withdraw annually and inspect for bends and flat spots. Inspect eye at boom heel for flat spots.

Care: where fittings are provided, lubricate prior to each loading period. Preserve by soaking with penetrating oil prior to putting out to sea.

9. Fairlead sheaves. Inspect visually prior to each loading period. Inspection shall be made for cracks, distortion, pin wear, etc.

Care: lubricate prior to each loading period.

10. Cargo hooks. Inspect visually prior to each loading period. Inspection shall be made for cracks, distortion, pin wear, etc.

Care: Prior to sailing, remove from rig, preserve and store as required.

11. Swivels and pins for cargo hooks. Inspect visually prior to each loading period.

Care: prior to sailing, remove from rig, preserve and store until required.

12. Chain stoppers. Inspect prior to each loading period for distortion of links, wear, etc.

13. Hatch rollers. Inspect hatches for need of rollers, request change in allowance for additional rollers, as required. When rollers are in use, check daily for lubrication, proper alignment and wear.

14. Shrouds and stays. Every 30 days inspect for rust bleeding through, deterioration from stack gases and destruction of preservative materials and serving. Check grounding wires.

(a) Care: coat with preservative as required and insure that coating remains intact.

(b) Renewal: not required unless wire is damaged.

15. Turnbuckles. Inspect every 30 days. Pull pins for inspection semi-annually. Inspect bonding wires every 30 days.

Care: Keep bonding contact wires clean. Once a year clean and preserve threads by applying a thick coating of white lead and tallow mixed in equal proportions, serving the

twofold purpose of lubricant and preservative. Protect coating by serving with several layers of burlap strips. Liberally apply mixture on all layers of burlap. Replace canvass cuff with seam on the underside to prevent entry of rain or saltwater.

CHAPTER 19

PAINTING

Section A

Painting Instructions

19.1 When to paint.

A ship's force cannot rely on painting alone to give the ship a clean, shipshape appearance. Soiled surfaces shall be cleaned rather than painted over. When surfaces remain unsightly because their colors have changed by fading, yellowing or appear excessively soiled, they shall be repainted. One coat shall suffice in such instances.

19.2 Excessive painting.

Frequent painting over of surfaces topside shall be avoided because of the weight added on by excessive layers of paint. Thick coats of paint constitute a fire hazard and tend to peel and lift from the surface. Surfaces with excessively thick paint shall be cleaned to bare metal and primed before repainting.

19.3 Painting by ship's force/ shore activities.

The following areas may at times be painted by shore activities when workload, passenger lift or other extenuating circumstances preclude the accomplishment of painting by the ship's force. Ship's force shall exert every effort to accomplish all work possible.

1. Cabin passenger staterooms and areas.
2. Ship's officers' quarters and areas.
3. Troop compartments and heads.
4. Cargo holds and hatch trunks.
5. Auditorium.
6. Barber shop.
7. Children's playroom.
8. Dining saloon.
9. Doors, passenger quarters.
10. Cabin passenger lobbies and passageways.
11. Ship's hull outside (generally painted by the shore activity at the home port).

19.4 Supervision.

Shipboard painting operations shall be supervised by responsible

personnel who shall ensure that:

1. Surfaces are properly prepared and prescribed primers are used.

2. Primer and surface coats are applied correctly.

3. Proper care is given equipment.

4. The following safety precautions and safe practices are observed:

(a) When painting aloft; gear, gantlines, boatswain's chairs, etc., shall be in good condition, well-rigged and properly secured.

(b) When painting a mast ladder; a tail block with gantline and boatswain's chair shall be used - to enable the man to lower himself. Each man using a boatswain's chair shall be required to know how to rig and make the necessary hitch for lowering himself.

(c) Makeshift rigs, e.g., the use of meat hooks, etc., are certain death traps and prohibited.

(d) Boatswain's chairs shall not be hooked or shackled to rungs of ladders. The possibility of a failure of the rungs is fairly remote, but the constant changing of a hook or shackle from one rung to the next constitutes a hazard because the man has no support while making the change. The possibility also exists of the hook jumping off the rung when the man's weight is temporarily released.

(e) The use of benches, boxes, crates and other makeshift devices to stand on when painting is prohibited.

(f) Personnel required to use spray equipment shall wear eye protection and approved respirators for spray painting.

(g) When painting in confined spaces, precautions shall be taken to provide maximum ventilation in the area.

(h) Personnel involved in the use of phosphoric acid shall wear rubber gloves, eye and face protection and rubber aprons.

(i) Rags used in connection with painting constitute a fire hazard and shall be burned or otherwise disposed of immediately.

(j) Upon completion of painting, hands shall be cleaned with paint thinner, oil or other paint-removing compound and then washed with soap and water.

19.5 Preparation of surfaces for painting

a. Steel surfaces. Thoroughly clean by removing all dirt, dust, dirty oil, grease, loose paint and rust.

b. Aluminum alloy surfaces. Prevention of the formation of destructive aluminum oxide can be attained by cleaning and preservation of the aluminum surfaces. The use of a mild soap and warm fresh water is advised for cleaning, followed by a thorough drying. If paint is to be applied to the aluminum surface, it should first be treated with acetic acid or vinegar to assure adherence of the paint to the metallic surface. No primer need follow the acid coating, and color paints may be applied as desired. If a bright metallic surface is desired in lieu of painting, clear cellulosic lacquer, SNSN G8010-166-1700 or G801-290-6158 can be applied to the cleaned surface without acid treatment. Properly cleaned and preserved aluminum will last for years, raw aluminum exposed to sea and weather will deteriorate at an alarming rate.

c. Galvanized surfaces. First treat with a 10 percent solution of diluted phosphoric acid in water and suitable solvent and wetting agents to produce a thin phosphate coating on the surface. The phosphoric acid solution or approved cleaner shall be applied to the galvanized surface with a large brush or sprayed on. When dry, the surface shall be thoroughly rinsed with fresh water, preferrably hot. Primer, Formula 84, or undercoat, Formula 14, as required, shall be applied when the surface is dry.

19.6 General.

a. Under conditions of high humidity, temperatures of the structure shall be increased, or the air in compartments cooled and dried to prevent condensation and to maintain a dry surface.

b. Painting at temperatures below 32° is prohibited

c. In exterior painting, bare metal areas shall be given two coats of red lead primer, Formula 116, and two finish coats. Areas where paint has been removed, and surfaces are prepared to a firm intact primer coat shall receive two finish coats. Areas, where paint has been removed and surfaces are prepared to a firm intact finish coat, shall receive one fresh coat.

Section B.

Unpainted Surfaces

19.7 Unpainted surfaces.

Following are items that are NOT to be painted:

1. Surfaces with special protective surfaces.
2. Bell pulls, sheaves, annunciator chains and other mechanical communication devices.
3. Exposed composition part of any machinery.
4. Electric insulation and antenna rigging insulation.
5. Glands, stems, yokes, toggle gear and all machined external parts of valves.
6. Heat exchange surfaces of heating or cooling equipment.
7. Joint faces of gaskets and packing surfaces.
8. Lubricating gear, such as oil holes, oil or grease cups, lubricators and surfaces in contact with lubricating oil.
9. Name plates.
10. Rods, gears, universal joints, couplings of valve operating gear.
11. Springs strainers, threaded parts and working surfaces of zincs.
12. Electronic equipment finished in enamel or special finishes, as wrinkle or crackle, except when necessary for preservation.
13. Reflecting surfaces of lighting fixtures.
14. Hatch, door and port knife edges and rubber gaskets.
15. Turbine casing joints, nuts and bolts.
16. Sliding feet of turbines and boilers.
17. Top of floor plates, gratings and handrails in machinery spaces.
18. Fuel oil and other liquid tank vent screens.
19. Magnesite decks (Chapter 14).
20. Stainless steel or Monel.

19.8 Protection of unpainted surfaces.

Unprotected surfaces shall be kept at a minimum. Bearing surfaces and bright steel shall be protected with rust preventive compound if they are not frequently used or handled.

19.9 Cleaning of unpainted surfaces.

Unpainted surfaces shall be cleaned frequently to prevent corrosion. Care shall be taken to prevent damage to surface when cleaning.

Section C

Care and Control of Painting Equipment

19.10 Custody of paint lockers.

The first officer shall have charge of the paint locker. He shall maintain working levels of paint in the paint locker, supervise the paint mixing and the issue and care of painting equipment.

1. Issue of paint, pots and brushes. Paints, pots and brushes will be issued upon receipt of a paint chit signed by a ship's officer and approved by the first officer. The amount of paint issued shall be controlled so as to keep returned paint to a minimum. Paint and paint gear shall be returned to the paint locker at the end of working hours each day. Working levels of paint stocks will be maintained in the paint locker by submission of a stub requisition (S&A Form 307) to the ship's supply officer. Ship's paint stocks will be maintained at levels shown in the allowance.

2. Custody of paint by chief engineer. In ships where the engine department has lockers which are properly protected, the chief engineer shall maintain his own working levels of paint. The system of issue and replenishment of stocks will parallel the system used by the first officer.

3. Paint chit. A paint chit (Figure 19-1) may be used for the issue and control of paint and paint gear.

19.11 Care of brushes.

a. Before use, brushes shall be rinsed out with paint thinner.

b. Brushes that are to be re-used the following day shall be marked for white, light colors or dark colors, as appropriate. Excess paint shall be removed and the brushes suspended by the handle, with the bristles immersed just below the bottom ferrule in paint thinner or linseed oil in a closed container. The weight of the brush should not rest on the bristles.

c. Brushes which are not to be re-used immediately shall be cleaned thoroughly with thinner, washed out with soap and water and rinsed. They shall be stored suspended from the handle on racks or laid flat.

d. Bristles are generally set in rubber or similar compositions. Soaking in water to tighten loosened bristles causes the metal ferrule to rust and at times to split as a result of the swelling of the wooden handles.

PAINT/GEAR REQUEST
MSTSPAC Form 4750/1 (4-61)

TO: FIRST OFFICER

AREA TO BE PAINTED

CERTIFICATION AND REQUEST

THE SURFACES TO BE PAINTED IN THE AREA DESCRIBED ABOVE ARE PROPERLY PREPARED. REQUEST THAT THE FOLLOWING PAINT AND/OR GEAR BE PROVIDED. THE PAINT COLORS ARE IN AGREEMENT WITH THE PAINT SCHEDULE.

SIGNATURE (OFFICER REQUESTING PAINT)

QUANTITY	COLOR	BRUSHES	POTS

AUTHORIZATION

SIGNATURE (FIRST OFFICER)

REQUEST APPROVED:

RECORD OF ISSUE/RETURN

ISSUED TO (SIGNATURE AND DATE)	RETURNED BY (SIGNATURE AND DATE)

Figure 19-1

Section D

Assignment of Painting Areas

19.12 Assignment of areas for painting.

a. Deck department. All areas under cognizance of the first officer shall be maintained and painted by deck department personnel. This includes all exterior areas, deck crew quarters, carpenter shop, cargo holds and tanks and the deck department store rooms.

b. Engine department. Painting responsibility for the engine department includes all spaces under the cognizance of the chief engineer, they consist of the engine rooms, fire rooms, emergency generator room, evaporator flats, reefer flats and the engine crew's quarters.

c. Steward department. The steward's department is responsible for painting all spaces under the jurisdiction of the chief steward. These include the galleys, bake shops, mess rooms, mess halls, nursery, crew's quarters (steward), cabin passengers' lounge, crew's lounge and ship's officers and passengers' staterooms. (Staterooms of passengers and ship's officers may at times be painted by shore activities, if necessary.)

d. Supply department. Painting responsibility of the supply department includes all areas under the supply officer's cognizance and encompasses the supply office and store rooms.

e. Military department. The commanding officer of the military department shall have painting responsibility, when appropriate, in all spaces used by the military department, including the exchange locations, store rooms, library and enlisted complements quarters.

CHAPTER 20

WINCHES AND CAPSTANS

20.1 Preventive maintenance.

The purpose of this chapter is to establish a preventive maintenance program to keep cargo winches in operating condition. The program provides for the systematic detection and correction of mechanical and electrical failure before they occur or develop into major defects.

20.2 Scheduled services.

a. A systematic schedule of test and inspection, cleaning, adjustment and repair, outlined in Chapter 60, Article 60-324, BUSHIPS Manual, shall be followed in the maintenance of motors and controllers associated with cargo winches.

b. Applicable manufacturers' instructions, provided on board ships, furnish guidance not found elsewhere for the operation and adjustment of electrical and mechanical brakes and assemblies.

c. Preservation of surfaces is covered in Chapter 19 of this manual and the BUSHIPS Manual.

d. Maintenance and upkeep of material beyond the capacity of the ship's force, e.g., the halting or prevention of deterioration of bases and foundations, holding-down bolts, rewinding of fields and armatures, etc., shall be submitted on the ship's repair request for accomplishment during suitable availability. Items of emergency nature shall be brought to the attention of the staff M&R Officer.

e. Cargo winches shall be operated and inspected prior to arrival at and departure from each port. Work necessary for the continued operation of this equipment shall be performed on a high priority basis.

f. After exposure of deck machinery to inclement weather conditions at sea, it shall be checked carefully to ensure reliability at the next port. Expenditure of overtime is justified when the maintenance check cannot be performed during regular working hours.

20.3 Inspection during operation.

Whenever cargo is worked, an hourly inspection shall be made

by qualified engine department personnel of all winches in operation. Steam winches shall be properly lubricated during this round. Electric winches shall be observed through a complete cycle including the operation of controller equipment. Personnel making these rounds shall be prepared to make minor adjustments and recognize signs of impending trouble.

20.4 Moisture elimination.

Winch and windlass motors in exposed deck locations and resistor rooms in damp places are provided with heating elements for moisture elimination. These heating elements are to be operated at all times when the unit is not in use. Failure to use these facilities will result in increased operating troubles and breakdowns. Log entries should read, "Deck machinery secured, heaters energized."

20.5 Spare Parts.

A well planned cargo gear maintenance program requires the maintenance of an adequate supply of spare parts. Procedures shall be established to check and maintain the full allowance of spare parts on board at all times.

20.6 Steam winches.

a. Inspection and overhaul. A progressive program of winch overhaul shall be maintained - one or two winches being overhauled per trip, as weather conditions permit. Deck and engine department personnel shall be assigned to this task as required. Particular attention shall be directed to the following:

1. Cylinder cocks shall be tried each time a winch is warmed up.

2. Foot brakes shall be checked during each trip and adjusted and disassembled if necessary.

3. Brake bands shall be inspected monthly and adjusted and renewed as necessary.

4. Packing shall be inspected quarterly and renewed as required.

5. Cylinder cocks, pistons, rings, valves, valve rings, throttles, gear clutches and bearings shall be inspected annually and renewed as necessary.

b. Care.

1. Clean with wire brush to bare metal prior to coating. Cover non-working metal surfaces with undercoat of bituminous paint, and finish coat as prescribed in COMSTS painting instructions.

2. Lubrication shall be constant when the winches are in use in accordance with the manufacturer's instruction book. All moving parts shall be greased heavily prior to putting out to sea and inspected regularly for adequate preservation while at sea.

20.7 Electric winches.

a. Inspection and overhaul. A progressive program of winch overhaul shall be maintained, one or two winches being overhauled per trip as weather conditions permit. General overhaul shall be as follows:

1. Motors, including those on the blower, shall be inspected during each trip when the winch is used. The controller and master switch cover gaskets and contact surfaces shall be visually inspected and renewed or replaced as necessary.

2. Magnetic controllers shall be inspected during each major leg of the voyage.

3. Mechanical brakes shall be inspected monthly, making certain that they are free. They shall be disassembled periodically if necessary.

4. Magnetic brakes, including linings and brake shoe shafts, shall be inspected quarterly and renewed as necessary.

5. All resistors, porcelains and connections shall be checked semi-annually and renewed as necessary.

6. A complete overhaul shall be accomplished annually. Inspect stripping down where necessary, clean and renew as required, all bearings, gears, switch contacts, lugs, wiring, star wheel and heating elements.

b. Care.

1. All covering and joining surfaces of electrical equipment shall be maintained in the best possible condition to ensure that such equipment is kept dry. Hose shall not be played on winches at any time. For preservation, clean to bare metal with wire brush

prior to coating, cover non-working surfaces with bituminous paint and spray a light grade of preservative oil under the winch frame. Painting shall be in accordance with COMSTS painting instructions.

2. The level of the gear casing oil shall be checked prior to each loading. Oil shall be changed annually. The foot brake mechanism when installed shall be lubricated daily when in use and kept free at all times. Their operation shall be checked and assured when loading ammunition. Blower motors shall be lubricated quarterly and winch motors semi-annually. Mechanical brakes shall be heavily lubricated with grease. All exposed moving parts shall be inspected frequently prior to sailing and during the voyage for need of lubrication.

3. Magnetic controllers shall be removed annually and coated with insulating varnish. When controllers are removed, the controller-resistor-magnetic brake housing interiors shall be painted out with bituminous paint. Tear down magnetic brake annually, check all pins, shafts and other moving parts; renew as required. The winch motor shall be opened semi-annually, brushes checked, brush riggings tightened, commutator and field coils checked and cleaned and ball floats checked. The controller resistor-magnetic brake and master switch covers shall be cleaned as corrosion occurs and kept well gasketed with continuous gaskets. Gasket surfaces and contact surfaces will be kept free of paint. Motor drain plugs shall be removed prior to the use of the winch and replaced prior to putting to sea.

CHAPTER 22

STEERING GEAR

22.1 Instruction charts.

Change-over instruction charts for emergency and casualty operation shall be posted in the Steering Engine Room, in accordance with USCG regulations.

22.2 Precautions.

Electric hydraulic steering engines shall not be left operating for extended periods of time when the ship is at anchor or otherwise not in actual use. Operation of the machine in this manner tends to churn the oil and heat up the machine. There have been occasions when the hydraulic pump has seized from the heat generated in this manner. To keep the steering engine running, a quartermaster shall be instructed to shift the rudder a few degrees each way every three or four minutes. This procedure will cause the oil to circulate and prevent overheating.

22.3 Lubrication

Oiling and greasing of steering engine components is important. A lubrication program shall be established using the instruction book lubrication chart as a guide and check-off list.

CHAPTER 23

INDUSTRIAL GASES

23.1 Reference.

Code of Federal Regulations, title 46 shipping, part 146-149, Explosives or other Dangerous Articles on Board Ships, is applicable and its provisions concerning the amounts and stowage of dangerous ships stores shall be complied with. *

23.2 Stowage.

The amounts of 600 cubic feet of acetylene and 3000 cubic feet of oxygen on board for ships stores shall not be exceeded. Stowage will be in a cool, ventilated space selected by the chief engineer with the knowledge and approval of the master.

23.3 Precautions in use of burning gases.

Extreme care shall be exercised in the use of acetylene, prestolyte and other burning gases, particularly, to ensure that there is adequate ventilation. A fire extinguisher shall be placed in the vicinity of the area where burning is being accomplished.

CHAPTER 24

SHIP CONTROL EQUIPMENT

24.1 Responsibility.

The navigating officer (second officer) is responsible for the care and maintenance of the gyro compass, spare parts and associated equipment. A routine maintenance schedule as prescribed in the Sperry Gyro Manual will be maintained by the second officer.

CHAPTER 25

TOWING GEAR

25.1 Insurance wire.

The insurance wire required by American Bureau of Shipping will be maintained in a preserved state by each ship.

CHAPTER 26

MOORINGS AND APPLIANCES

26.1 Precautions in use of anchor windlass.

a. When practicable the chain stoppers shall be used to hold the anchor taut in the hawse pipes. The tension of the anchor chain over the wildcat and shaft shall be eased up sufficiently to prevent undue wearing of pedestal bearings and wildcat bushings when windlass is used to operate warping heads. The tension on the hand brake shall be sufficient to prevent slippage but must not be unduly strained. The use of locking bars to set up on hand brakes strains parts of the brake assembly with little or no gain in the effective hold of wildcat.

b. Failure to carry out the above procedure will cause misalignment of the clutch assembly and embarrassment when speed is required to engage or disengage wildcat assembly during critical periods.

c. Particular attention shall be given to keeping the brake band links free since when frozen, the tension on the brake wheel pulls the shaft out of alignment. There have been occasions when the windlass would not operate in the warping position and continually kicked out the circuit breaker due to overload. Investigation revealed that this difficulty was caused by frozen brake links plus excessive tension on the brake. Even if the windlass does operate under these conditions, the wear on the wildcat bushing is excessive and will eventually cause trouble in the alignment of the wildcat clutch.

d. Port and starboard anchors shall be used alternately wherever possible. When one anchor is not used for a long period of time, freezing of the clutch occurs and panels will not engage. The locking bar should be engaged periodically when winch is not in use. Careless engagement when windlass is in motion will cause damage to panels.

CHAPTER 29

WEIGHTS, STABILITY AND INTEGRITY

29.1 Stability letter.

The U.S. Coast Guard letter of stability shall be posted in accordance with U.S. Coast Guard regulations.

29.2 Other ballast requirements.

a. When the ship operates in waters contiguous to combat areas, or in waters where mine warfare may be conducted, maximum stability shall be maintained by the use of salt water in the double bottom tanks. However, the requirements of maximum stability shall be considered sufficiently flexible to permit compliance with Article 29.3, below. This condition shall be maintained also at any time upon receipt of information indicating potential hostile action. Free surface shall be kept to a minimum at all times.

b. Peak tanks shall normally be kept full of fresh water, except in cargo ships when approaching limiting drafts.

29.3 Ballasting.

a. The following sequence of flushing operations will be followed:

(1) Gravitate sufficient sea water to cover the heating coils to a depth of 1 to 2 feet depending on the trim of the ship.

(2) Heat water to 110°- 120°F. and maintain this heat for at least 24 hours.

(3) Pump sea water overboard and thoroughly strip the tank.

(4) Fill tank to 25% capacity with sea water.

(5) Heat to 110°- 120°F. and maintain this heat for at least 36 hours.

(6) Pump sea water overboard and thoroughly strip the tank.

(7) Flood tank with sufficient sea water to submerge heating coils to a depth of 1 to 2 feet depending on the trim of the ship.

(8) Heat to 110°-120°F. and maintain this heat for 12 hours and pump overboard.

Observation of the overboard discharge will determine if the washing cycle must be repeated. The condition of the discharge water can also be determined using a sampling line on the discharge side of the pump. If no sampling line is installed, a tee in the pressure gage line with a 1/4 inch valve and copper tubing can be utilized. The sampling line should be led to a suitable container equipped with a wire screen to run the water through a paper towel.

If excessive oil particles are present during the final stripping, the cleaning and flushing process is to be repeated.

(9) Fill tank to 85% - 90% capacity, heat and maintain at 110°-120°F. for a period of 24 hours and thoroughly strip. When the discharge is clean and free of oil particles, the tank may be filled and remain in a ballasted condition or remain empty, as required.

If desludging compound is available, (Ref. 55-5d) it may be added and tanks washed in accordance with manufacturer's instructions. The periodic use of desludging compounds in connection with fuel oil treatment compounds will maintain tanks in a clean and sludge-free condition.

The time required to properly clean a fuel oil tank is 5 to 6 days. By careful study of the ship's voyage schedule, fuel consumption for the voyage and amount of ballast required to maintain stability, a tank cleaning schedule can be maintained. Double bottom tank capacity to meet the ballast requirements should be selected and fuel from these tanks consumed at the earliest opportunity to expedite tank washing and ballast operations.

It is imperative that all suction and discharge valves in the fuel and ballast systems are maintained in a good state of repair to prevent cross flow of liquids and contamination.

b. Five or six days prior to entering port where fuel is to be received, all ballast shall be discharged. This will serve a two-fold purpose.

(1) Any small amounts of oily, rusty water etc., remaining in the tanks may be discharged overboard, assuring that all ballast lines and oil and water separator (if installed) will be in a clean condition for inport deballasting operations.

(2) Disposal of excess amounts of ballast. The ship will reballast the minimum amount to conform to and maintain Coast Guard stability requirements. The above shall be accomplished within the provisions of the Oil Pollution Act of 1924 which requires all oily water be discharged 100 miles off coastal waters. Ballast remaining on board shall be discharged through the ship's oil and water separator when one is installed. Otherwise, an oil discharge rig or sludge barge shall be requested on the arrival logistics. Attention is directed to the Oil Pollution Act of 1961 (75 Stat 404)(Public Law 87-167), as quoted below, which establishes the use of the "Oil Record Book for Non-Tanker Vessels" issued by the Department of the Army, Corps of Engineers (Eng. Form 03481) and distributed by the U. S. Coast Guard Office of Marine Inspection. The Oil Pollution Act of 1961 is basically identical to the Oil Pollution Act of 1924 insofar as violations, penalties and procedural processes are concerned. The 1961 act establishes world wide prohibited zones where oily ballast may not be discharged and is the basis for the oil record book. United States. Government owned and operated ships are exempt from this regulation. *

"c. Oil Pollution Act, 1961.

Section 12.

"(a) Subject to paragraph (c) of this section, the prohibited zones in relation to tankers shall be all sea areas within fifty miles from land, with the following exceptions:

"(1) The Adriatic Zones - Within the Adriatic Sea the prohibited zones off the coasts of Italy and Yugoslavia respectively shall each extend for a distance of fifty miles from land, excepting only the Island of Vis.

"(2) The North Sea Zone - The North Sea Zone shall extend for a distance of one hundred miles from the coasts of the following countries:

Belgium
Denmark
The Federal Republic of Germany
The Netherlands
The United Kingdom of Great Britain and Northern Ireland;

but not beyond the point where the limit of a one hundred-mile zone off the west coast of Jutland intersects the limit of the fifty-mile zone off the coast of Norway.

"(3) The Atlantic Zone - The Atlantic Zone shall be within a line drawn from a point on the Greenwich meridian one hundred miles in a north-north-easterly direction from the Shetland Islands; thence northward along the Greenwich meridian to latitude 64 degrees north; thence westward along the 64th parallel to longitude 10 degrees west; thence to latitude 60 degrees north, longitude 14 degrees west; thence to latitude 54 degrees 30 minutes north, longitude 30 degrees west; thence to latitude 44 degrees 20 minutes north, longitude 30 degrees west; thence to latitude 48 degrees north, longitude 14 degrees west; thence eastward along the forty-eighth parallel to a point of intersection with the fifty-mile zone off the coast of France: Provided, that in relation to voyages which do not extend seaward beyond the Atlantic Zone as defined above, and which are to points not provided with adequate facilities for the reception of oily residue, the Atlantic Zone shall be deemed to terminate at a distance of one hundred miles from land.

"(4) The Australian Zone - The Australian Zone shall extend for a distance of one hundred and fifty miles from the coasts of Australia, except off the north and west coasts of the Australian mainland between the point opposite Thursday Island and the point on the west coast at 20 degrees south latitude.

"(b) Subject to paragraph (c) of this section the prohibited zones in relation to ships other than tankers shall be all sea areas within fifty miles from land with the following exceptions:

"(1) The Adriatic Zones - Within the Adriatic Sea the prohibited zones off the coasts of Italy and Yugoslavia respectively shall each extend for a distance of twenty miles from land, excepting only the island of Vis. After the expiration of a period of three years following the application of prohibited zones to ships other than tankers in accordance with section 3(b) of this Act the said zones shall each be extended by a further thirty miles in width unless the two governments agree to postpone such extension. In the event of such an agreement, the Convention provides for notification to be given accordingly to the Intergovernmental Maritime Consultative Organization by said governments not less than three months before the expiration of such period of three years and for notification to be given to all contracting governments by the Intergovernmental Maritime Consultative Organization.

"(2) The North Sea and Atlantic Zones - The North Sea and Atlantic Zones shall extend for a distance of one hundred miles from the coasts of the following countries:

Belgium
Denmark

The Federal Republic of Germany
Ireland
The Netherlands
The United Kingdom of Great Britain and
Northern Ireland,

but not beyond the point where the limit of a one-hundred-mile zone off the west coast of Jutland intersects the limit of the fifty-mile zone off the coast of Norway.

"(c) With respect to the reduction or extension of the zones described above effectuated under the terms of the Convention, the Secretary of the Army shall give notice thereof by publication of such information in Notices to Mariners issued by the United States Coast Guard and United States Navy."

29.4 Fuel and ballast bill

a. Fuel and ballast bills by ship type are shown on subsequent pages as Figures 29-1 thru 29-6. Masters shall direct compliance with the appropriate bill.

b. The sequence of the burning and transfer of fuel shall be such that all tanks are rotated at least once a year as required by the BUSHIPS Manual, Article 55-27. In the operation of cargo ships, the sequence of burning fuel will necessarily vary due to loading conditions.

c. Deviation from the provisions of Article 29.2, above, requires the prior approval of the administrative commander, except in an emergency.

FUEL AND BALLAST BILL

Ship Type: P2-SE2-R1

Tank	Port	Center	Stbd	Sequence
1	--	626 bbls	--	--
2	555 bbls	--	555 bbls	(5)
3	625 "	1020 "	625 "	(5c)
4	665 "	1120 "	665 "	5
5	599 "	798 "	599 "	4c (8 P&S)
6	719 "	901 "	719 "	(3)
7	564 "	799 "	564 "	(3)
8	415 "	912 "	415 "	6
9	488 "	--	486 "	(6)
14 settlers	670 "	--	670 "	--
15	714 "	--	1076 "	1
17 settlers	670 "	--	670 "	--
18	1074 "	--	1074 "	3
21	--	1062 "	--	2
22	--	1955 "	--	7
23	--	1021 "	--	9

Total fuel oil: 26,102 bbls.

NOTE: **Tanks 15 and 21 are overflow tanks and shall be filled last and emptied first.**

Sequence numbers in parentheses indicate alternate tanks for rotation and trim purposes.

Figure 29-1

FUEL AND BALLAST BILL

Ship Type: P2-S2-R2

Tank	Port	Center	Stbd.	Sequence
1 DB	326 bbs.	--	306 bbls.	(3)
2 "	714 "	--	714 "	(2)
3 "	506 "	1096 bbls.	512 "	3
4 "	622 "	1100 "	726 "	4
5 "	615 "	616 "	560 "	5
6 "	466 "	616 "	447 "	6
7 "	535 "	859 "	600 "	(6)
8 "	371 "	1080 "	Diesel Oil	7
9 "	- -	774 "	--	(2)
4 Deeps	702 "	2078 "	702 bbls	1
5 "	--	851 "	--	(3)
6 "	--	796 "	--	2
Settlers fwd	240 "	--	212 "	
Settlers aft	209 "	--	211 "	

Total fuel oil: 20,176 bbls.

NOTE: The static line overflows to settlers, therefore settlers should be low when fueling.

Sequence numbers in parentheses indicate alternate tanks for rotation and trim purposes

Figure 29-2

FUEL AND BALLAST BILL

Ship Type: C-4 Passenger/Cargo

Tank	Port	Center	Stbd	Sequence
1 DB	424 bbls	--	424 bbls	(4)
2 "	343 "	1251 bbls	343 "	2
3 "	743 "	1051 "	743 "	4
4 "	909 "	1064 "	909 "	(3)
5 "	876 "	1062 "	876 "	3
6 "	567 "	1036 "	567 "	1
Settlers	238 "	--	246 "	--

Total fuel oil: 13,676 bbls.

NOTE: The static line overflows to settlers, therefore settlers shall be low when fueling.

Sequence numbers in parentheses indicate alternate tanks for rotation and trim purposes.

Figure 29-3

FUEL AND BALLAST BILL

Ship Type: C-3 Pass/Cargo

Tank	Port	Stbd	Sequence
1 DB	525 bbls	525 bbls	(1)
2 "	700 "	905 "	1
3 "	821 "	992 "	2
3A"	548 "	656 "	4
5 "	1029 "	1015 "	5
6 "	364 "	364 "	
4A Deeps	1444 "	1327 "	3
5 Deeps	1010 "	882 "	(4)
5A Deep	365 "	280 "	(4)
Settlers	460 "	450 "	

Total fuel oil - 14,656 bbls.

NOTE: The static line overflows to settlers, therefore, settlers should be low when fueling.

Sequence numbers in parentheses indicate alternate tanks for rotation and trim purposes.

Figure 29-4

FUEL AND BALLAST BILL

Ship Type: C-2 Reefer

Tank	Port	Stbd	Sequence
1 DB	582 bbls	482 bbls	(4)
2 "	1007 "	1007 "	4
3 "	1311 "	1302 "	3
5 "	946 "	946 "	(3)
6 "	287 "	287 "	(3)
5 Deeps	728 "	668 "	2
6 "	368 "	314 "	1
Settlers	471 "	471 "	-

Total fuel oil: 11,285 bbls.

NOTE: The static line overflows to settlers, therefore, settlers shall be low when fueling.

Sequence numbers in parentheses indicate alternate tanks for rotation and trim purposes.

Figure 29-5

FUEL AND BALLAST BILL

Ship Type: VC2-S-AP2 and AP3

Tank	Port	Center	Stbd	SEQUENCE Regular	SEQUENCE Alternate
1 DB	862 bbls	--	862 bbls	2	1
2 "	246 "	600 bbls	246 "	(4)	(4)
3 "	893 "	1066 "	893 "	3	4
4 B	173 "	- -	173 "	-	-
5 DB	538 "	1100 "	538 "	4	3
4 A Deeps	2350 "	--	2121 "	1	2
4 B Deeps	1577 "	--	1407 "	(1)	(2)
5 Deeps	1427 "	--	1186 "	(1)	(2)
Settlers	423 "	--	426 "	--	-

Total fuel oil: 19,113 bbls.

NOTE: The static line overflows to settlers, therefore settlers shall be low when fueling.

Sequence numbers in parentheses indicate alternate tanks for rotation and trim purposes.

Figure 29-6

CHAPTER 30

STOWAGE OF SAFE, SEMI-SAFE AND DANGEROUS MATERIALS

30.1 Applicability of Code of Federal Regulations.

a. Code of Federal Regulations, title 46, Shipping, part 146 to 149 is a compilation of regulations applicable to all civil service-manned (USNS) ships.