

FOREWORD

The ability of MSTS to accomplish successfully its mission of providing ocean transportation for the Department of Defense ultimately depends upon the knowledge, experience, and skill of the officers and crew members who man MSTS ships. The need for skilled seamen was recognized as far back as 500 B.C., when Thucydides said: "Their want of practice will make them unskillful, and their want of skill, timid. Maritime skill, like skills of other kinds, is not to be cultivated by the way or at chance times." To assure skilled and confident crews, COMSTS has established a formal damage control program, with instruction to provide technical know-how, and shipboard drills to assure sufficient practice not only to develop confidence and skills but also to retain them. Maritime progress is rapid and seamen must keep pace with improvements in ship construction, shipping operations, and marine safety.

Damage control consists simply of equipping ships and organizing and training their crews to prevent, prepare for, and control emergency situations; making emergency repairs to keep the ship operating; and the safeguarding of personnel. It is far better to prevent casualties in advance than to control them after they occur. If a casualty should occur, preparation will pay off--for an effective damage control program is 90 percent preparation and only 10 percent application.

COMSTS has equipped MSTS ships with damage-control equipment allowances and has provided for the effective organization of crews for damage control through standard station bills. With damage control equipment and proper organization, it is possible to train and drill crews to a state of readiness in which positive action is automatic in the event of emergency. That is the aim of the MSTS Damage Control Program, for the best equipment and the best organization is useless without well-trained and skilled crew members, drilled to utilize emergency equipment and to act effectively within the damage control organization.

Make sure that you and your ship are adequately prepared for any emergency. Maintain your damage-control equipment in readiness for instant use, know your ship and its equipment, observe good housekeeping and good seamanship practices, and learn and practice the damage control measures in this Manual. If you do, you probably will prevent casualties--for preparation is prevention; casualties "happen" more often aboard ships in which there is lack of preparation to cope with them.

Every officer and crew member aboard has a direct obligation and responsibility for damage control, both at sea and while in port. The ship's damage control readiness depends upon each officer and each crew member knowing his ship, its equipment and his emergency duties. Learn your emergency duties through study of this Manual and practice them during emergency drills so that you can not only perform them well but with "surplus skills." Then if you are called upon to perform your emergency duties in a smoke-filled or flooding compartment, you will find that you can do them automatically and well enough to control the casualty.

This Manual contains standard emergency bills which comprise a plan of action in each foreseeable emergency, standard lesson plans covering all subjects in the MSTS damage control course, and casualty reviews for further study and discussion.

The lesson plans are intended for Phase I initial and refresher training by damage-control instructors, for continued Phase II shipboard training by ships' officers, and for self-study by officers and crews. They are prepared in presentation format to aid the instructor.

COMSTSINST 3541.5A
18 Sep 1958

The casualty reviews are included for further study and discussion because, although experience is a fine teacher, it is a slow and costly one. Therefore, it is best to broaden your knowledge through the experience of others.

This Damage Control Manual has been prepared to aid you, the officers and crews of MSTS ships, in meeting your responsibility for damage control afloat--the grave responsibility for the safe delivery of passengers and cargo entrusted to your care. Remember too, that every precaution you take to assure the safety of your ship, your passengers, and your cargo will also assure your own safety.



USNS GROMMET REEFER at Leghorn,
Dec 1952, dragged anchor. Entire
crew rescued from stern half.

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"Few masters prove their worth in calm seas."

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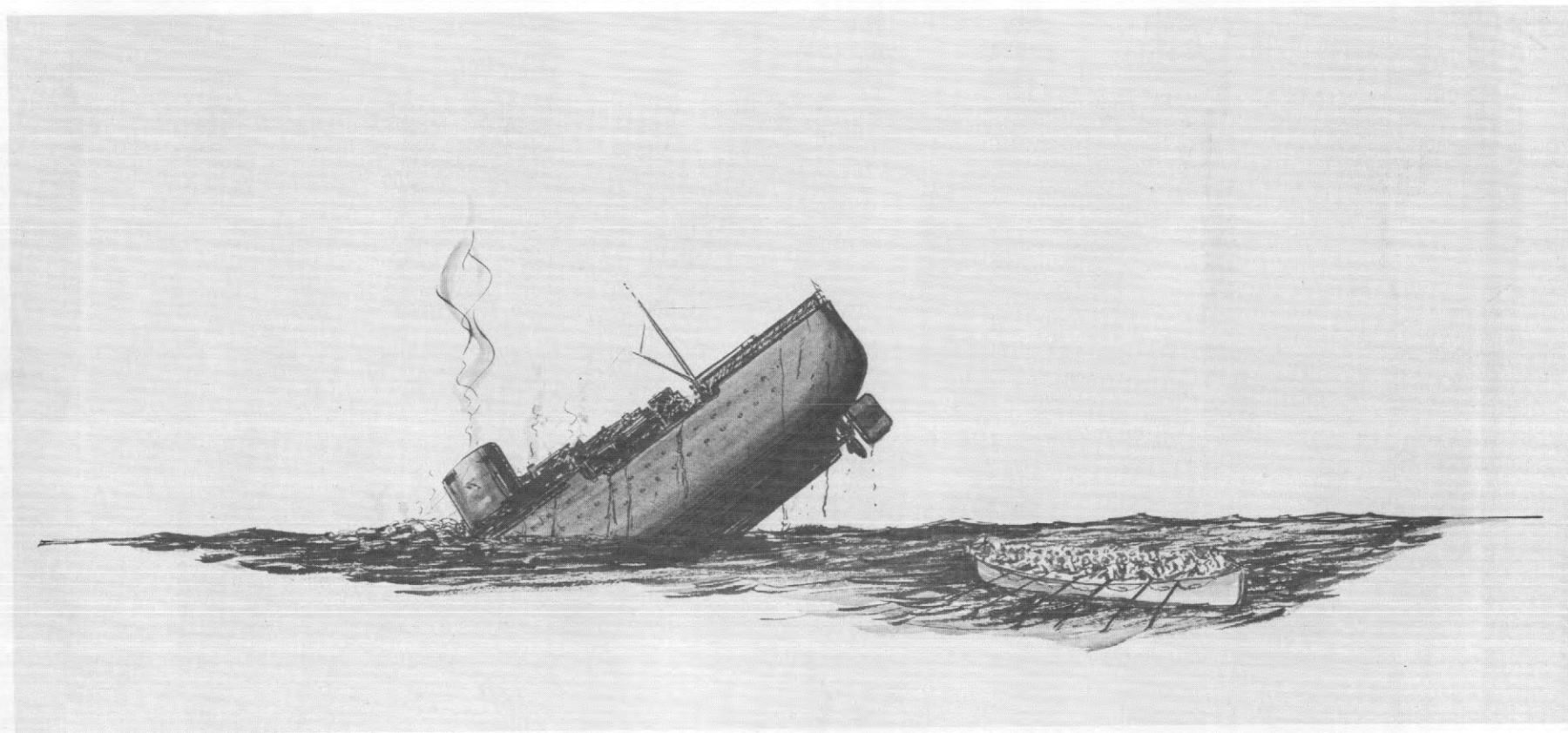
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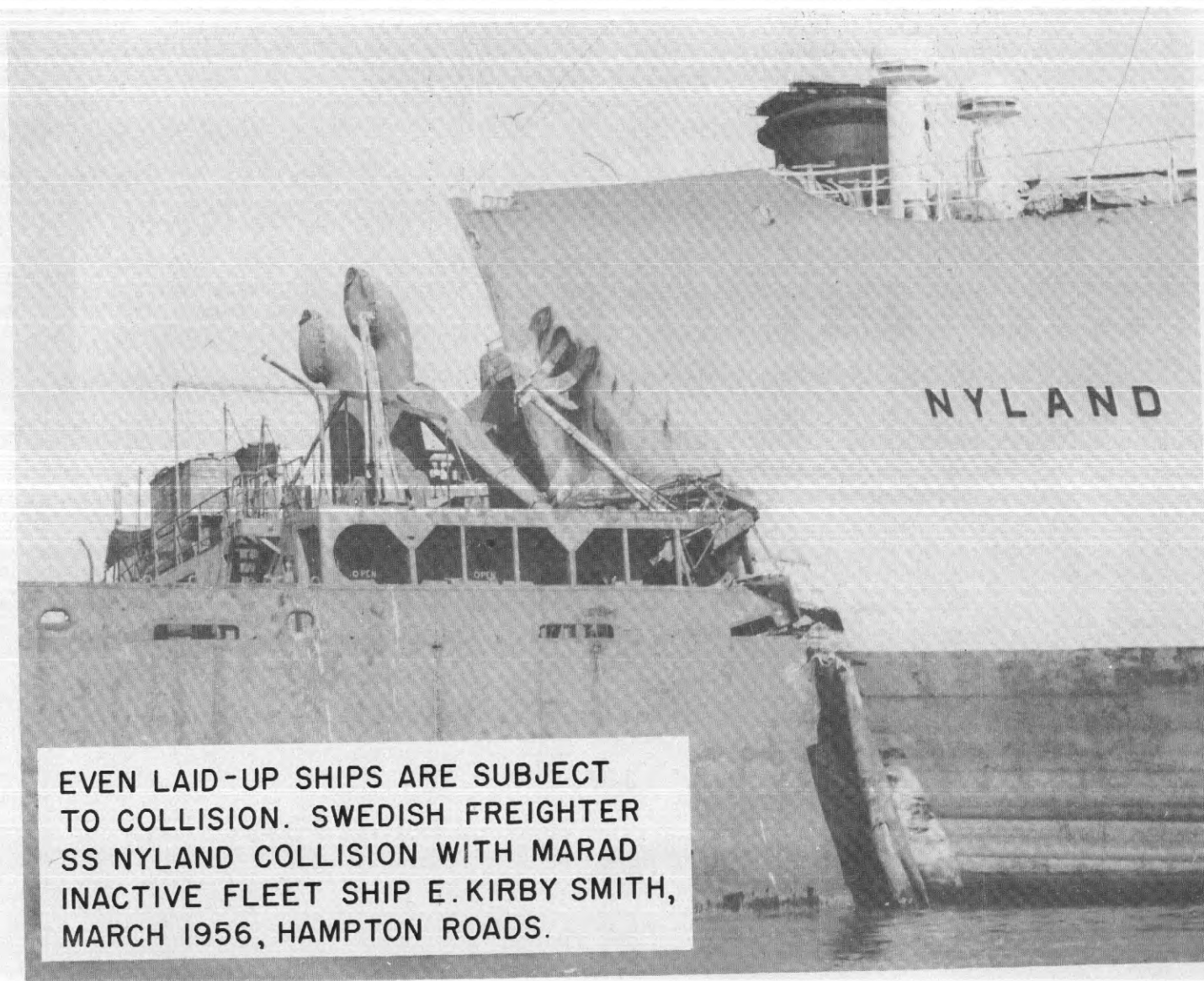
"When seamen get in trouble at sea, there are many wise men ashore"
Finnish proverb.



CHAPTER I

EMERGENCY BILLS

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EVEN LAID-UP SHIPS ARE SUBJECT
TO COLLISION. SWEDISH FREIGHTER
SS NYLAND COLLISION WITH MARAD
INACTIVE FLEET SHIP E. KIRBY SMITH,
MARCH 1956, HAMPTON ROADS.

USNS GEN. E.D. PATRICK
REPAIR PARTY #1

<u>1st Fire Party</u>	<u>Equipment</u>
104 3rd Off.	D.C. Plates
108 4th Off.	Talker at Lkr.
148-2 F/W	Talker at scene
170-4 O/S	Talker at Scene-Assistant
170-2 O/S	2 1/2 Hose
148-1 F/W	Messenger at locker
012 H/M	First Aid-Collision
017 H/M	First Aid-Fire
356-1 Elect.	Elect. Kit
140 Bosn.	OBA-Helmet-Lifeline
167-10 A/B	OBA-Helmet-Lifeline
170-3 O/S	1/2 Hose
167-12 A/B	Asbestos suit
167-9 A/B	Bolt Cutter

2nd Fire Party

160- Bosn/M	OBA-Helmet-Lifeline
167-8 A/B	OBA-Helmet-Lifeline
170-1 O/S	1 1/2 Hose
167-11 A/B	Wrecking Bar-OBA Cannister

pumping Party

344 Plumber	Submersible Pump
381-5 Eng./Util.	Portable Cut. Kit
374 2nd/Reefer	Portable Cut. Kit (Assistant)
357-1 Elect.	Submersible Pump (Assistant)

SHORING Party

145 Carp.	Tool Kit
164 Carp/M	Measuring Baton
389-6 Wiper	Rubber Matting
389-5 Wiper	Patches-Sholes
386-9 F/W	Assist ant as Directed

(APR)

CHAPTER I

EMERGENCY BILLS

Section 1.1

DAMAGE CONTROL BILL

I Purpose	V Emergency Procedures
II Organization	VI Damage Control Fittings, Equipment, and Markings
III Responsibilities	VII Damage Control Training
IV Conditions of Readiness	

I. PURPOSE. This damage control bill organizes ship's personnel for the prevention, control, counteraction and repair of damage. The objectives of shipboard damage control are:

- A. To prevent damage before it occurs by:
 - 1. Maintaining watertight integrity.
 - 2. Eliminating fire hazards.
 - 3. Maintaining ship's and emergency equipment.
 - 4. Conducting realistic drills in proper use of equipment.
- B. To minimize and localize damage that does occur by:
 - 1. Combating fire.
 - 2. Controlling flooding.
 - 3. Maintaining stability and buoyancy.
- C. To accomplish emergency repairs as quickly as possible in order to permit continued operation of the ship.
- D. To protect personnel in emergencies by:
 - 1. Safeguarding personnel.
 - 2. Providing first-aid treatment to injured personnel.
 - 3. Assuring safe and orderly abandonment of a ship which cannot be saved.

E. To train ship's personnel in damage control techniques, impress the crew with the fact that damage control is an all-hands responsibility, and instruct passengers in their responsibilities during casualty situations.

II. ORGANIZATION. Shipboard damage control shall be organized for maintenance, drills, and emergency action as follows:

A. Damage Control Central. Damage control central shall be established near the bridge.

1. It shall provide for two-way interior and inter-station communication, evaluation of reports, plotting of damage, direction of personnel traffic, coordination in caring for personnel casualties, and directing all necessary emergency action.

2. Provision shall be made for a secondary damage control station located in the engine repair locker of ships having two repair lockers and in the single repair locker of other ships. This secondary damage control station shall be equipped to take over all functions of damage control central, including plotting of damage on the ship's profile plans.

B. Repair Parties.

1. Organization. Complement permitting, two repair parties shall be established. Repair I shall be composed principally of deck personnel and Repair II of engine personnel. Assignment of personnel to repair parties will be as shown in the ship's station bill. Assignment of individual duties, a check list of repair party equipment, and responsibility for maintenance and use of equipment shall be posted in each repair locker.

2. Duties. Repair parties shall normally assemble at their respective repair lockers, pick up required portable gear, and go to the scene of the emergency, as directed. During an emergency, the repair party not engaged shall stand by with equipment ready to assist. Repair parties shall be familiar with the location and operation of all damage control equipment and shall control, combat, and repair damage, as directed by damage control central.

C. Zone Areas.

1. Organization. The division of the ship and the assignment of personnel to zone areas to "button-up" the ship and to patrol all areas (which may not normally be manned) during drills and emergencies is set forth in the ship's station bill. A zone area officer and crew members are assigned to each zone area to patrol designated stations.

2. Duties. Under the supervision of a zone area officer, zone area personnel shall:

a. Make all required closures, securing air ports, watertight doors, fire-screen doors, fumetight doors, accesses, vents, manual fire dampers, blowers, fans, flushing system, and all other systems which may be secured without danger to vital equipment or personnel.

b. Patrol their assigned station areas to locate and report any damage, particularly watching areas near damage in other zones from which damage might spread. They shall be alert to detect fire, smoke, hot bulkheads, water leaks, ruptures in piping or cables, and all other signs of damage. In addition to reporting the results of all patrols and investigations to the zone area officer, zone area personnel shall take initial action to control damage before the arrival of repair parties.

c. Serve as stretcher and material bearers and assist repair parties, as directed. They shall aid in confining fires and in establishing boundaries by cooling down bulkheads, decks, and overheads to prevent transmission of heat.

3. Communication. Zone area officers shall maintain continuous communication with damage control central by means of the sound-powered phone system.

D. Key Emergency Station Personnel. Key emergency station personnel shall man emergency stations as assigned, report by nearest phone to damage control central, and stand by for orders. Key emergency stations shall be located at:

1. The forward and aft diesel fire pumps (where provided).
2. Emergency diesel generator.
3. Main distribution board.
4. Remote-control bilge-suction manifolds (where provided).
5. CO₂ manifold or remote-control CO₂ release (where provided).
6. The CO₂ cylinder or bottle room.
7. Steering engineroom and after docking bridge.
8. The I. C. room may be designated as a key emergency station if equipped with sound-powered circuits or with an emergency power distribution board.

E. General Duty Assignments. General duty assignments shall provide for the evacuation of passengers and troops from damaged and adjacent areas; evacuation and care of personnel casualties; direction and assistance to passengers and troops; the care of women and children; salvage of records and funds; and the destruction of classified information, as directed.

F. Special Duty Assignments. An Emergency Assignments Card (MSTS Form 3541-2) * shall be prepared for each crew member and posted at his bunk to show his general emergency stations and duties as listed in the ship's station bill. In addition, crew members should be aware that additional organizational details of special duty assignments are provided in each of the supplementary emergency bills. Ship-board training and drills should be aimed at acquainting each crew member with his special duty assignments and assuring that he performs them effectively in each of the various casualty situations.

NOTE: Organizational details of special duty assignments are provided in supplementary bills.

G. Station Bills. Station bills shall be posted as prescribed in the latest revision of COMSTSINST P3120.2. Station bills include provisions for fire and collision, ABC defense, abandon ship, man overboard and rescue procedures; assignments to repair parties, fire stations, zone areas, abandon ship stations, and emergency boat crews; and the operation of all emergency systems and equipment and the manning of vital ship stations. Station bills also list standard emergency signals and safety-at-sea instructions. They will be kept up to date, with necessary corrections and modifications being made by the master.

III. RESPONSIBILITIES.

A. Master. The master is responsible for the overall administration, efficient organization, and training of the crew in damage control. He shall insure that appropriate bills and markings are posted, and that sufficient drills are conducted to assure continued development of crew skill in the performance of emergency duties. He shall make frequent inspections to insure that all damage control features are in proper working condition and shall establish a check-off list to test, periodically, all power-driven damage control equipment.

B. First Officer. The first officer, as damage control officer under the master, is in general charge of damage control. He shall see that appropriate markings and instructions are displayed on all damage control equipment and stations. He shall make periodic inspections of and initiate action for maintenance, repair, and/or replacement of damage control equipment. He shall delegate training duties to subordinates as necessary to insure continuous and progressive development of the ship's damage control organization. During drills and emergencies he shall initially take charge of damage control central to receive reports and plot casualty areas on the ship's damage control plans or on the status board and shall direct and coordinate repair parties and other emergency action and calculate any change in stability. He may subsequently survey casualty control and direct action at the scene.

C. Chief Engineer. The chief engineer, in coordination with the first officer, shall organize and train engineering personnel and assist in training personnel of other departments. He shall inspect, test, mark, maintain, and repair all damage control equipment for which responsible. He is in charge of emergencies occurring in engineering spaces and shall direct action of repair parties in such cases, coordinating such action with damage control central. During drills and emergencies he shall, normally, take charge in the engine-room, or where most needed for the purpose of coordinating and directing action as directed by the master.

D. Commanding Officer, Military Department (COMILDEPT). The COMILDEPT is responsible for the instruction and participation of passengers in drills and for their direction, control, and safety during drills and in actual emergencies. He shall train military department personnel in damage control and insure their familiarity with the layout of the ship and with their emergency duties. He shall collaborate with the master in preparing effective emergency bills and muster lists for military personnel and shall assure their participation in all drills and exercises. (In ships without a military department, in which passengers are embarked, the first officer shall be responsible for passenger indoctrination and safety.) The COMILDEPT shall take station at damage control central and direct activities, ordered by the master, for the safety of troops and other passengers.

E. Chief Steward. The chief steward is responsible for the cleanliness and preservation of closures, valves, fittings, fire hose, nozzles, applicators, fire extinguishers and other similar equipment located in spaces assigned to the steward's department. He shall make periodic inspections of all such equipment and shall report deficiencies to the responsible officer. He shall assist in damage control training of steward department personnel.

F. First Assistant Engineer. The first assistant engineer is the ABC defense officer, responsible to the damage control officer for conducting ABC defense training, care of radiac equipment, maintenance of decontamination stations and equipment, and posting of required instructions and markings associated with ABC defense. He shall assist the chief engineer in organizing and training engineering personnel in damage control.

G. Senior Radio Officer. The senior radio officer is responsible to the damage control officer, through the ABC defense officer, for the proper operation and care of radiac equipment and its records of maintenance. He shall thoroughly familiarize himself with radiological detection and monitoring and shall assist in ABC defense training. In emergencies, he shall establish inter-station communications and shall report the casualty and the ship's position, as directed by the master.

H. Navigator. The navigator, second officer, shall immediately plot the ship's position in all emergencies and shall give it to the master and senior radio officer. In abandon ship, he shall have the magnetic course and distance to the nearest land ready for boat commanders.

I. Repair Party Officer. Repair party officers are responsible for the instruction and drilling of repair party personnel and for the control of damage at the scene of emergency. They shall direct their personnel into the damaged area, as instructed by damage control central, and shall supervise action including completing isolation of damage by making and strengthening closures and isolating sections of vital systems for repair; fighting fire and overhauling debris; cutting away debris; plugging, patching, and shoring; repairing ruptured lines of vital damage control systems such as CO₂ lines, fire main, steam lines, electrical circuits, bilge and drainage piping, and remote control apparatus; strengthening structural members; and combating engineering casualties.

J. Zone Area Officers. Zone area officers shall organize and train their personnel in emergency duties. During emergencies and drills, their stations shall be at their zone area stations. They shall verify manning of their zone areas and report to damage control central the readiness of their zones. Their responsibilities shall include: directing the "buttoning-up" of their zone areas by making the closures of watertight, fire screen, and weather deck doors, scuppers, hatches, scuttles, portholes, and fire dampers; isolating, combating, overhauling debris of incipient zone fires; restationing personnel, as needed to prevent personnel casualties; coordinating with repair party officers in controlling damage; directing the bringing of shores and damage control tools and materials; arousing, warning, and assisting passengers and troops; dispatching stretcher bearers, as directed; locating, investigating, and reporting initial and secondary damage; patrolling sections of their zone area; reporting equipment deficiencies in their zone area; and periodically informing damage control central of their zone area condition.

K. Senior Deck Watch Officers. Senior deck watch officers shall take all necessary initial action when an emergency arises. This includes notifying master, damage control (first) officer, navigation (second) officer, and engineroom; coordinating initial reports; directing investigation; sounding alarm; isolating damage by such means as releasing fire-screen doors, closing watertight doors by electrical remote control, and shutting down ventilation; plotting initial damage; directing initial repair party action until relieved by the damage control officer; and maneuvering ship.

14 September 1961

L. Senior Engineering Watch Officer. The senior engineering watch officer shall take necessary action involving notifying bridge and chief engineer of any engineering casualties; maintenance of propulsion and power supply; combating engineering casualties; commencing unwatering procedures, as directed; starting fire pumps; deactivating, shunting around, and restoring ship's services, as directed.

IV. CONDITIONS OF READINESS. Two conditions of readiness are established for MSTs ships in service (USNS) (civil-service-manned). These are:

A. "Emergency" ("Buttoned-up").

1. When Set. "Emergency" condition is set when all hands are called to emergency stations or at any time danger to the ship is imminent.

2. How Set. Under condition "emergency," all closures and systems shall be secured except those required for the operation of vital machinery or health of personnel. All watertight doors, fire-screen doors, portholes, and other closures are made. All ventilation is secured except that necessary for main propulsion and health of the engineroom watch. During drills, securing of ventilation may be simulated except in the zone in which the casualty is staged. All closures shall be properly made and checked by zone area officers. All hands shall be trained in establishing and maintaining watertight integrity.

B. "Cruising."

1. When Set. "Cruising" condition is set before getting underway, before and while entering or departing port. Setting this condition is particularly important when the ship is in confined or inland waters, in heavy traffic, heavy weather, low visibility, or in a combat zone.

2. How Set. "Cruising" condition requires securing, except when actually in use, of manhole covers, sounding tubes, bilge and ballast drain systems, fueling stations, hatches, and watertight doors below the bulkhead deck (the uppermost deck to which transverse watertight bulkheads extend). These fittings are closed and kept closed while "cruising" condition is in effect. When opened for use or passage, they must be closed immediately afterward.

C. Modification of Conditions. After either "emergency" or "cruising" condition is set, it may be changed or modified only by direction of the master, acting through the damage control officer. Modification of "cruising" condition at the discretion of the master may include:

1. Opening watertight doors to provide necessary ventilation and passage.

2. Opening shaft-alley watertight doors in cargo ships for which remote manual controls are installed.

3. Opening shaft-alley watertight doors in transports.

*D. In Port. Watertight doors below the bulkhead deck shall be kept closed during off-working hours and periods of inactivity.

E. Other Precautions. Whether at sea or moored the master shall, in addition to the above requirements, take other security precautions and require other closures as necessary for the safety of the ship. He shall assure the security of the ship and maintenance of watertight integrity as may be dictated by local situations.

V. EMERGENCY PROCEDURES.

A. General. During drills or emergencies, upon sounding of the general alarm, all stations shall be manned as assigned in the ship's station bill. In general (with modifications in ABC defense), the following applies:

1. The master assumes command on the bridge. The first officer takes charge at damage control central. After directing necessary action and determining the reserve stability, he may take charge at the scene. The chief engineer takes station in charge of the engineroom. After assuring himself that all machinery is operating properly, he may assist in directing damage control at the scene, as directed by the master. Radio officers report to assigned stations.

2. Repair parties and repair party officers report to their damage control lockers and prepare to go to the scene of the casualty with necessary equipment. They shall be directed by the damage control officer and shall take action required to prevent, control, and repair damage. Constant communication shall be maintained with damage control central.

3. Zone area personnel and officers shall report to their zone areas, make required closures, patrol assigned areas, and assist repair parties as directed. Zone area officers shall maintain communication with damage control central, reporting:

a. When manned.

b. Again when required closures are initially made.

c. All damage, personnel casualties, and other pertinent information gathered by zone area patrols.

B. Other Bills. This bill provides the general plan and organization for damage control; detailed plans and procedures to cope with

specific emergencies are covered in the following additional bills in this chapter:

Fire Bill	Towing and Salvage Bill
Collision Bill	Darken Ship Bill
Abandon Ship Bill	Highline Transfer Bill
ABC Defense Bill	Communications Bill
Engineering Casualty Bill	Emergency Evacuation Bill
Steering Casualty Bill	In-Port Emergency Bill
Man Overboard Bill	Mercy and Rescue Bill
	Helicopter Launching and Recovery Bill

C. Station Bills and Signals. Standard MSTS station bills for each MSTS ship type contain uniform emergency signals, safety-at-sea instructions and assignments to emergency stations and duties. These station bills have been reviewed and considered by the Commandant, U.S. Coast Guard to be adequate and in compliance with regulations. The emergency signals shall be closely adhered to and no others shall be used. The general alarm or ship's whistle shall not be used to signal emergencies within the ship except as specified herein. Where installed, the PA system shall be used for supplementary announcements after the signal, and for emergencies not requiring all hands.

1. Fire, Collision, and General Emergency. (—————). For fire, collision, and general emergencies, steady ringing of the general alarm bells and rapid ringing of the ship's bell for at least 10 seconds followed by appropriate announcement on the PA system.

2. ABC Defense. (————— - ——— - ——— - ———) For ABC defense, the steady ringing followed by short and long rings (— —) ("A") on the general alarm bells for at least another 10 seconds. Supplementary PA announcements shall be made in ships so equipped.

3. Abandon Ship. (— — — — — — — —) More than six (seven or more) short blasts and one long blast on the ship's whistle and the same signal on the general alarm bells, followed by PA announcement in ships so equipped.

4. Whistle Signals For Handling Boats.
Lower boats one short blast (—)
Stop lowering boats two short blasts (— —)
Recall and recover boats a short, a long, and a short
blast (— — — —) ("R").

5. Man Overboard. (————— —————) Three long rings on the general alarm bells ("O"), announcement on the PA system in ships so equipped, three long rings on general alarm bells.

6. Signals For Directing Emergency Boat. Use radio as first choice - otherwise by whistle, light, or flags. Whistle signals should not be used to direct emergency boat when other ships are in the vicinity because of conflict with passing signals.

Turn to starboard	One (=)
Turn to port	Two (==)
Dead ahead	Three (==)
Towards ship	Four (====)
Stand off, we are maneuvering (Danger Signal) ...	Five (=====)

7. Steering Casualty (=====) One long and two short rings on the general alarm bells ("D"), announcement on the PA system in ships so equipped, one long and two short rings on the general alarm bells. When other ships are in the vicinity, international code flag hoist "D" and/or one long and two short blasts on the ship's whistle will be used to advise: - "Keep clear of me - I am maneuvering with difficulty."

8. Dismissal From Any Or All Drills (====) Three short blasts on the ship's whistle and the same signal on the general alarm bells, followed by PA announcement in ships so equipped.

9. Other Emergencies Not Requiring All Hands. Announcement on the PA system in ships so equipped or pass the word.

D. Safety-at-Sea Instructions. Listed below are the standard safety-at-sea instructions contained in all MSTS standard station bills.

CONDITIONS OF READINESS

Emergency (Buttoned-Up).

Secure entire ship on general alarm or any time danger is imminent.

Cruising.

Secure fittings below bulkhead deck while underway, in heavy traffic or low visibility, in combat or danger zones, in confined waters, or entering or departing port.

Modification.

Either condition may be modified by the Master.

GENERAL INSTRUCTIONS

These instructions apply to all officers and crew members, and military Dept personnel.

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Stations and Duties.

Each person, including the Military Department, shall familiarize himself with his emergency station and duties immediately upon reporting aboard.

Emergency Assignment Cards.

Each crew member shall check the emergency assignment card posted at his bunk and showing his emergency stations and duties.

Additional Orders.

All crew members shall carry out orders given by ship's officers in addition to the duties assigned them by this Bill.

Clothing and Life Jackets.

Every person shall dress suitably for the locality and weather, with a cap or head covering. Every person shall wear his life jacket, properly secured, during all drills. Repair party personnel may leave their life jackets at the repair locker for drills other than boat drills.

Temporary Changes.

The provisions and duty assignments of this Bill shall be observed in all MSTs civil-service-manned ships. Temporary changes in assignments may be made by emergency assignment cards, but not on this Bill. Such changes shall be made only to provide training in emergency duties or to allow for physical limitations.

ORGANIZATION FOR EMERGENCIES

Repair Parties

Repair parties are organized for fire fighting, shoring, dewatering, structural repairing, radiological monitoring and decontamination, and first aid. Lists shall be posted in repair lockers showing appropriate assignments, duties and responsibilities for equipment.

Zone Areas.

The ship is divided into zone areas bounded by main vertical zone bulkheads as indicated on the drawing on the ship's station bill. The officer-in-charge of each zone will:

Direct the securing of all closures (including manual fire dampers) within his zone area, ensure that all patrol areas are manned, report the condition of his zone to damage control central, and take initial indicated action.

Maintain communication with damage control central.

When directed, close scuppers and other hull openings below the bulkhead deck.

Assist repair parties in isolating and combating damage in his zone.

Provide personnel to serve as stretcher bearers, bring equipment and assist the repair party.

Train his zone area personnel in the techniques of detecting, investigating, and reporting damage, and in the use of damage control equipment.

Lifefloats.

Masters-at-Arms and/or other designated personnel assigned to liferafts and floats will clear them away and direct their launching.

PASSENGERS (TROOP & CABIN)

Direction of.

The Military Department shall control, direct, and muster troop class passengers in accordance with the emergency bills. Designated Steward Department personnel shall arouse, assist and direct cabin passengers.

Procedures.

During general emergencies, passengers shall go to their cabins and compartments, unless otherwise directed. They shall be instructed to dress adequately, don their life jackets, and shall stand by for further instructions.

During abandon ship drills, passengers shall go to their abandon ship stations, adequately clothed including head covering, with life jackets properly secured.

During ABC Defense, passengers shall be directed to safe areas in the interior of the ship.

EMERGENCY PROCEDURES

Action on Alarm

Any person discovering a fire shall immediately pass the word (in transports by breaking the glass in the nearest fire alarm box) after which he shall fight or isolate the fire and stand by to guide the repair party.

When the fire, collision and general emergency signal is sounded:

- All hands shall man their emergency stations immediately.
- Personnel on watch shall man their emergency stations when properly relieved.
- Fire pumps shall be started (including diesel-driven pumps). All watertight doors, fire screen doors, ports, and manual fire dampers shall be closed. All mechanical ventilation systems, except forced draft blowers, shall be secured; and the emergency diesel generator shall be started.
- Repair parties shall take appropriate emergency action, as directed.

ABC Defense.

Crew members shall carry out their ABC defense assignments before taking cover in the interior of the ship. The washdown countermeasure shall be rigged and operated, and weather deck closures shall be made in accordance with the ABC Defense Bill. Monitoring teams shall be furnished by Repair 2 in ships with two repair parties, and decontamination teams by Repair 1. In ships with only one repair party, the ABC Defense Officer will assign personnel to monitoring and decontamination teams. There will be no eating, drinking, or smoking after ABC (NBC) attack until notified.

When in port, the provisions of "Atomic Attack Instructions for MSTs Operated Ships in Port," MSTs Form 3541-4, will apply.

Abandon Ship.

If after evaluation of the casualty, it appears that abandon ship may become necessary, the Master shall direct a deck officer to supervise readying of lifeboats for launching. Selected members of the Steward and Military Departments shall then direct passengers to their abandon ship stations to await further orders. This will be done without sounding the abandon ship signal, which shall be used only when the Master has decided to abandon ship and the entire crew must man the boats. The Master and Chief Engineer, with selected crew members, shall remain on board as long as there is a chance of saving the ship without undue hazard to personnel.

Man Overboard

Toss the nearest ring buoy overboard and hail the bridge. Emergency boat(s) shall be readied for launching.

PORT WATCH INSTRUCTIONS

During emergencies in port, the deck watch officer (or night mate) shall act as damage control officer. He shall sound the alarm and notify appropriate port authorities and the senior officer aboard, who shall take charge. Engine Department personnel on watch shall remain on watch. All crew members not already engaged in initial emergency action will assemble at Repair 1 for emergency assignments. All watch officers (and relief officers) shall familiarize themselves with in-port fire and emergency regulations, with the ship and its damage control equipment, and shall keep themselves informed of personnel available aboard during in-port security watch periods (nights, weekends, and holidays).

STEWARD DEPARTMENT

Steward's Department personnel assigned to cabin areas are assigned the additional duties of:

- Fire stations, closing ports, stateroom doors, and fire screen doors in their assigned patrol areas.
- Arousing and warning passengers.
- Instructing passengers to dress suitably for the locality and weather, with hat or head covering, and with life jackets properly secured.
- Directing and controlling the movement of passengers to their boat stations.
- ABC Defense-Stand by emergency stations, close doors and ports, patrol assigned areas, remain inside.



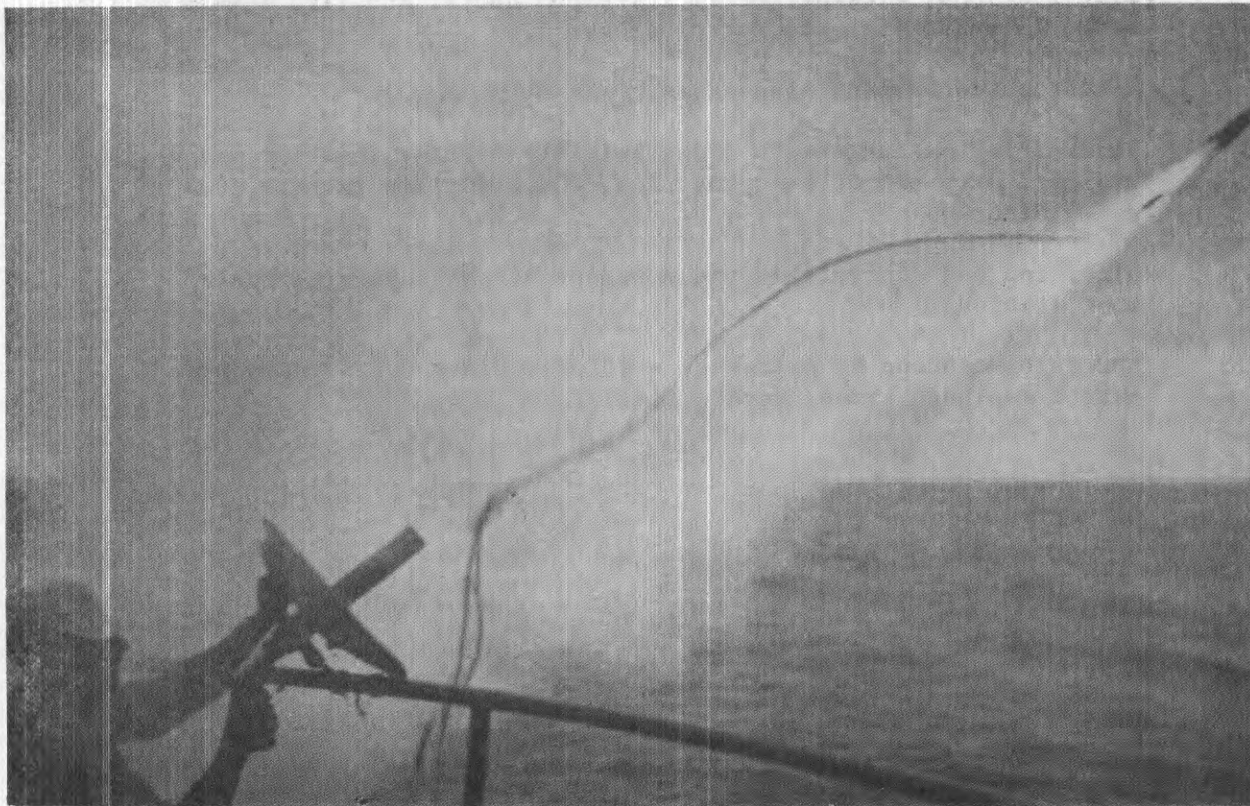
HOW TO FIRE A KILGORE ROCKET

These shots aboard transatlantic vehicle ferry USNS *Taurus* demonstrate correct way to fire a Kilgore line-throwing rocket "gun." Her Purser, Charles Goldin, was alert to catch details for *MSTS Magazine* readers.

As an extra precaution, apparatus was lashed to the rail with six-thread to prevent triggerman's being struck by the shield flying back when the gun went off. Further advantage: gun could be tipped inboard to load rocket.

A messenger was looped over the ship's side, under the rail, and secured to it with tape to check lines running out of tub before firing. *Taurus'* A.B. Maintenance Joseph A. Catalo, Jr. kneels well clear of line and tub, so as not to be "kicked" in forehead by rocket's potent recoil. ⚓

Ready! Aim! Fire!



VI. DAMAGE CONTROL FITTINGS, EQUIPMENT, AND MARKINGS.

A. General. Ships shall, at all times, maintain authorized allowances of damage control equipment. The master shall assure through frequent inspections, personally or by qualified subordinates, that all fire-fighting equipment and stations, emergency generators, pumps, and all other damage control equipment such as rescue breathing apparatus, flame safety lamps, radiac equipment, portable burning and welding kits, gas masks, hand tools, safety line and cable, etc., are in proper operating condition. Training of personnel shall be conducted to insure proficiency in the operation of all such equipment and in emergency procedures.

B. Built-in Features. Special attention shall be given to the maintenance of the ship's built-in emergency features.

C. Damage Control Lockers and Portable Equipment. Damage control lockers and portable equipment shall be painted and maintained in accordance with current instructions. The inside of locker doors shall be painted international orange. All equipment shall be painted international orange, with one black stripe to indicate the equipment of Repair 1 and two black stripes to indicate equipment of Repair 2. Equipment shall be tested-operated during drills except for the portable cutting unit which shall be test-operated once each month. Additional portable equipment such as portable extinguishers, fog applicators, NPU nozzles and foam, shores, and OBA's shall be stowed in accordance with existing MSTs and USCG requirements.

D. Damage Control Markings. Damage control markings shall be in accordance with the latest revision of COMSTS INSTRUCTION 9280.3 including:

1. Frame numbers stenciled each fifth frame in interior spaces (port and starboard) and each 10th frame at exterior or weatherdeck areas.
2. Deck, frame, and zone area numbers stenciled on each side of transverse watertight bulkheads.
3. System identification for all piping in each compartment.
4. Operating instructions for damage control machinery.
5. Identification for all stowed damage control equipment, fixed and portable.
6. Other markings as outlined in COMSTS INSTRUCTION 9280.3 or effective revision thereof.

E. Check Lists and Reference Material. The master will assure availability and use of the following during drills in readiness for emergencies:

1. Check list of all damage control equipment and fittings in the ship's damage control book, with location and function of each.
2. Booklet of ship's plans.
3. Muster lists of personnel manning zone areas.
4. Check list of closures and ventilation controls in each zone area.
5. Check list of key stations (for damage control central).
6. Check list of damage control locker equipment for posting inside locker door and a muster list of repair party personnel with general duties and equipment responsibilities. Damage control equipment stowed nearby will be listed.
7. Posted ship's damage control plans for plotting or status board outlining zones, transverse watertight bulkheads, and ladderwells.

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31 July 1962

- * F. Damage Control Book. Each ship shall compile and keep up-to-date a damage control book, USNS Damage Control Book 3541, containing essential information on the ship's damage control organization, systems, machinery, controls, and equipment. This book will serve as a ready reference during drills and in actual emergencies and will aid in checking and maintaining damage control equipment. Copies will be held by the master, chief engineer, and damage control officer; copies will be kept in damage control central and in each repair locker; and one copy will be forwarded to the area commander.

VII. DAMAGE CONTROL TRAINING.

A. Training. See CMPI 410 and the effective revision of COMSTS INSTRUCTION P3120.2.

B. Appraisal of Damage Control Readiness. There are four methods of determining damage control readiness:

1. Comparing time required for a drill.
2. Comparing omission of duties or equipment; comparing errors made in each drill, as closures not made.
3. Evaluating the effectiveness of drills or exercises (pick-up of man-overboard, shoring, pumping, coverage of washdown system).
4. Condition and operation of emergency equipment.



CHAPTER I

EMERGENCY BILLS

Section 1.2

FIRE BILL

I	Purpose	V	Emergency Procedures
II	Organization	VI	Signals
III	Responsibilities	VII	Firefighting Training
IV	Condition of Readiness		

I. PURPOSE. This fire bill organizes the ship's company for firefighting. The objectives of shipboard fire fighting are to:

- A. Discover and report fire promptly.
- B. Combat fire.
- C. Isolate damaged areas systematically.
- D. Safeguard life and property.
- E. Maintain fire fighting equipment in readiness.
- F. Continue ship on assigned mission.
- G. Train and instruct crew.

II. ORGANIZATION.

A. The organization of the ship's crew to combat fire is based on the ship's station bill and damage control bill, including:

- 1. Damage control central.
- 2. Repair parties.
- 3. Zone area personnel.
- 4. Key emergency station personnel.
- 5. Emergency duty assignments.
- 6. Watch on deck and in engine room.

B. In-port.

- 1. In port, watch officers shall, in addition to duties and stations indicated on the ship's station bill, take immediate action to locate, isolate and extinguish the fire.
- 2. All hands on board, in port, whether on duty or not, will assist in fire fighting and in preparation to get underway.

III. RESPONSIBILITIES.

A. Master. The master is responsible for the efficient organization for, training in, and supervision of fire-fighting procedures. He shall:

1. Conduct inspections and drills to assure readiness to cope with any fire.
2. Assure that qualified personnel are assigned duties in the fire-fighting organization.
3. Take appropriate emergency action including maneuvering ship, requests for assistance, readiness of life-saving equipment, notification of higher authority, and diversion if necessary.

B. First Officer. The first officer, as damage control officer under the master, is in general charge of fire fighting at damage control central on the bridge. He shall:

1. Receive and evaluate reports and conditions.
2. Plot fires and progress on status board.
3. Direct appropriate countermeasures in areas outside machinery spaces.
4. Direct (via the COMILDEPT) the evacuation of troops or passengers from danger areas.
5. Direct movement of back-up personnel.
6. Direct medical personnel (passenger ships).
7. Direct unwatering of flooded compartments as soon as possible.
8. Train ship's personnel in fire fighting.
9. Conduct frequent inspections to insure that all fire fighting equipment is in good working order.

C. Chief Engineer. The chief engineer, in coordination with the first officer, shall organize and train engineering personnel and shall assist (as appropriate) in training personnel of other departments. He shall inspect, test, mark, maintain, and repair all fire-fighting equipment for which he is responsible. He is in charge of fighting fires in engineering spaces and directs such fire-fighting action, coordinating action with damage control central.

D. Senior Deck Watch Officer. The senior deck watch officer shall take all necessary initial action to:

1. Sound fire alarm signal to alert crew.
2. Secure all ventilation systems from bridge if an actual fire exists or if in any doubt. Where blowers must be reset individually, only the affected zone will be secured during each drill.
3. Close fire screen doors (master switch).
4. Close watertight doors that are bridge-controlled.
5. Maneuver or stop ship.
6. Notify master and first officer and assume the responsibilities of damage control officer until relieved.

E. Senior Engineer Watch Officer. The senior engineer watch officer shall take action necessary to start fire pumps, commence unwatering procedures, prepare for maneuvering and, when directed, shall de-energize all general lighting and power circuits that pass through the fire area.

F. Repair Party. The repair party officer (deck, engine, or both, as directed) shall immediately proceed to the scene with assigned men and equipment. When the nature and extent of the fire has been determined, he shall direct personnel to isolate the fire, evacuate personnel in the immediate area, take all means possible to extinguish the fire, and shall maintain communication with the bridge and report progress.

G. Senior Radio Officer. The senior radio officer shall establish inter-station communications and report the ship's position and the fire, as directed by the master.

H. Zone Area Officers. Zone area officers are responsible to the damage control officer. They shall:

1. Supervise the "buttoning up" of their zones by making closures of watertight, fire screen, and weather deck doors; scuppers, hatches, scuttles, port holes and fire dampers.
2. Isolate and combat incipient fires.
3. Arouse, evacuate and assist passengers and crew.
4. Maintain constant communication with damage control central, reporting personnel or equipment deficiencies, results of direct investigation and patrols, and zone area condition.
5. Direct evacuation of casualties and assist the repair officer at the scene.

I. COMILDEPT. The COMILDEPT (passenger ships) is responsible for the instruction and participation of passengers in drills and for their safety in emergencies. He shall assign additional guards to keep all personnel clear of danger areas and shall direct activities, ordered by the master, for the safety of troops and other passengers.

J. Chief Steward. The chief steward is responsible for cleanliness and preservation of closures, valves, fire hoses, nozzles, applicators, fire extinguishers, and other similar equipment located in spaces assigned to the steward's department. He shall assist the first officer in fire fighting training of steward department personnel.

K. Fire Watchman. The fire watchman (passenger ships), between the hours of 2200 to 0600 shall be continuously on the alert for fire and smoke. He shall patrol all parts of the ship accessible to passengers and crew, know the use and location of all fire-fighting equipment; and, in event of fire, shall sound and spread the alarm, arouse the crew and passengers, and take initial action to extinguish or control the fire.

L. Personnel Discovering a Fire. Proper immediate action in the first few minutes of any fire is essential. Therefore it shall be the duty of any person aboard ship, underway or in port, who discovers a fire, to immediately:

1. Spread alarm by shouting "FIRE" to attract attention.
2. Break glass of the nearest manual alarm (passenger ships).
3. Notify the bridge immediately (in addition to manual alarm) by telephone or by messenger. Give exact location by deck, frame, side of ship, compartment description, extent and nature of fire.
4. Take charge at the scene, until relieved by a senior officer or by arrival of repair party.
5. Endeavor to extinguish or prevent fire from spreading.
6. Make use of appropriate fire extinguishers or other fire-fighting equipment in the area.
7. Make progress reports to the bridge.
8. Remove flammable material from the area.
9. Confine fire to prevent spreading.
10. Maintain a check on surrounding bulkheads and report any further developments to the bridge.
11. Carry out any orders of senior officers.

Fighting fires is an all-hands job. It is expected and required that all hands will know these instructions, the types of fires, proper use of extinguishers, and how to take initial action under varying conditions. For what is done in the first few minutes of a fire is far more important than any action in the next few hours.

IV. CONDITION OF READINESS. At the sound of the general alarm, condition "EMERGENCY" will be set.

V. EMERGENCY PROCEDURES.

A. Fully Manned. In the event of a fire underway, or in port with all hands on board, upon the sounding of the fire alarm signal, all fire stations shall be manned as assigned in the ship's station bill.

1. The master assumes command on the bridge.
2. The first officer takes charge at damage control central and, after directing necessary action, he may take charge at the scene.
3. The chief engineer takes charge of the engineering department and directs fire-fighting in engineering spaces, coordinating with damage control central.
4. Repair party officers and repair party personnel report to their damage control locker, pick up equipment and, unless otherwise instructed, will commence fighting fire in their area without waiting for orders from damage control central.
5. Repair party officers shall:
 - a. take charge at scene of fire.
 - b. Direct investigation of fire by OBA man, equipped and tended.
 - c. Determine the following:
 - (1) Exact location.
 - (2) Nature of fire.
 - (3) Extent of fire.
 - (4) Safest access routes, insuring isolation of fire and maintenance of watertight integrity.
 - (5) Equipment required.
 - (6) Setting secondary boundaries.

6. The remainder of repair party, fully equipped, proceed to an adjacent area, readily available, investigate the surrounding area, set up secondary boundaries, establish communication, maintain and give continuous progress reports to damage control central. They take all necessary steps, as directed by the officer-in-charge at the scene, to isolate and extinguish the fire.

7. The repair party officer, having completed his initial investigation, issues the necessary orders to fight and extinguish the fire, to evacuate casualties from the scene, and to render first aid as required.

8. The electrician assigned to the repair party, when directed, de-energizes emergency lighting and power circuits that pass through the fire areas and hooks up necessary emergency circuits.

9. Zone area personnel and officers man fire stations, secure ventilation and fire dampers; close watertight doors, close fire screen doors, and confine fire to impede its progress; fight fires in their areas until relieved by the repair party; and evacuate passengers, crew and casualties. Zone area officers establish communication with damage control central and report when manned, when closures have been made, extent of damage, casualties, progress reports, and other pertinent information gathered by zone area patrols. They also assign zone area personnel to assist repair parties and dispatch men and assistance as directed by damage control central.

B. In Port, When All Hands Are Not Aboard. A fire in the ship or one spreading to the ship shall be fought by a composite fire party. This party shall consist of all available personnel on board. All hands will be considered to be in a duty status and shall make themselves available and muster at damage control locker No. 1. They shall assist in fire fighting, in preventing the spreading of fire, and shall aid in preparations to get underway. The senior deck officer on board will be in charge and will normally take station at the scene. The master shall be responsible for compliance with port regulations and shall provide information as to the method and place of contacting shore-based fire fighting facilities.

VI. SIGNALS.

A. Fire Stations. The fire alarm signal is a steady ringing of the general alarm bells and rapid ringing of the ship's bell for at least 10 seconds followed by appropriate announcement on the PA system. If necessary, word will be passed over the PA system, giving information concerning the location of the fires (by deck, frame, and side number, and compartment) and the extent and type of the fire. *class A or C/OSS*

EXAMPLE: "Mattress fire, compartment 4-37-0-L."

B. Dismissal. The signal for dismissal from fire stations is three short blasts of the ship's whistle and the same signal on the general alarm bells, followed by PA announcement in ships so equipped.

C. At all fire drills, the word should be passed - "This is a drill." In case of an actual fire, the word should be passed - "This is not a drill."

VII. FIRE FIGHTING TRAINING.

A. The master shall be responsible for a continuing long range shipboard fire-fighting training program for the entire crew.

B. Formal Training. All hands should be detailed, on a rotating basis whenever possible, to attend formal fire-fighting training at Navy schools ashore. Refresher training is recommended every 2 years.

C. Indoctrination. All newly-assigned personnel will be instructed and trained in basic problems of fire-fighting. Particular attention and emphasis shall be directed to those crew members who have not received practical fire-fighting training.

D. Topics for Instruction. The first officer (damage control officer) with the assistance of the ships' department heads, repair party officers, zone area officers, and designated key personnel shall schedule, instruct, and drill the crew in a continuing fire-fighting training program. This will include specific duty assignments and all aspects of fire-fighting as contained in the basic damage control course (afloat) for all hands. Emphasis should be upon the following, including demonstrations, skill tests, and the drills specified in Operating Instructions.

1. Chemistry of fire
2. Classes of fires.
3. Portable fire extinguishers.
4. Fire prevention afloat.
5. Navy standard couplings, hoses and nozzles.
6. Fire detecting system.
7. Confinement of fire.
8. Organization of shipboard repair parties.
9. Zone area organization.

COLLISION

AT SEA



CHAPTER I

EMERGENCY BILLS

Section 1.3

COLLISION BILL

I	Purpose	IV	Condition of Readiness
II	Organization	V	Emergency Procedures
III	Responsibilities	VI	Signal

I. PURPOSE. This collision bill provides assignments and responsibilities of key personnel; and the general procedures to be followed for the rapid and effective control of damage resulting from collisions. However collisions can and must be prevented through careful navigation, the practice of good seamanship, strict adherence to the Rules of the Road, and the effective use of radar and timely radar plotting.

II. ORGANIZATION. The ship's key personnel shall be organized for the control and repair of collision damage as follows:

Master	- - - - -	In command on bridge.
First Officer	- - - - -	Damage control central.
Chief Engineer	- - - - -	Engine room or at scene.
COMILDEPT	- - - - -	On bridge.
Senior Radio Officer	- - - - -	Radio room.
Second Officer	- - - - -	Bridge.
Repair Officers	- - - - -	In charge of repair parties.

III. RESPONSIBILITIES.

A. Master. The master is responsible for the over-all administration, organization and preparedness of the crew to cope with collision damage. He shall assure that deck officers are well versed in the use of radar, radar plotting, the Rules of the Road, navigation, and good seamanship as related to the prevention of collisions.

B. First Officer. The first officer, as damage control officer under the master, shall assure that condition of readiness "EMERGENCY" is properly set immediately after any collision. He shall direct repair parties, plot damage, plot a secondary flooding boundary, and shall calculate the change in stability using the "STABILITY BOOKLET." The first officer shall also advise the master regarding the ship's stability status.

C. Chief Engineer. The chief engineer shall inspect the engineering spaces for any damage and shall maintain power, light and other utilities as requested by the damage control officer. If the collision is in an area remote from engineering spaces, the chief engineer may go to the scene and direct the action, coordinating with the damage control officer.

D. COMILDEPT. The COMILDEPT is responsible for the direction, control and safety of troops and other passengers. He shall direct the evacuation of the damaged area as ordered by the master.

E. Senior Radio Officer. The senior radio officer shall transmit necessary reports as directed by the master.

F. Second Officer. The second officer shall fix the ship's position and so inform the master and senior radio officer. He shall, in addition, log the name of the other ship, time, sea, wind and weather condition, and shall retain any plotting sheets in use at the time of the collision.

G. Senior Deck Watch Officer. The senior deck watch officer, in the absence of the damage control officer, shall close WTD's and FSD's before or immediately after collision; he shall sound the alarm as soon as possible, preferably before collision; trip out the ventilation; and shall designate a repair party to investigate the area.

H. Senior Engineering Watch Officer. The senior engineering watch officer shall answer all bells expeditiously, maintain light and power, warm up the main fire pump and ready the bilge pumps.

IV. CONDITION OF READINESS. At the sound of the general alarm, "EMERGENCY" condition will be set. Ventilation may be restored in the engine room and in other areas not affected by the collision.

V. EMERGENCY PROCEDURES. In a collision, or if a collision is imminent, the following emergency procedures will be taken in addition to others as directed by the master:

- A. Sound alarm (if time permits).
- B. Close WTD's, FSD's and secure ventilation.
- C. Sound alarm (if not sounded prior to collision).
- D. Set condition "EMERGENCY!"
- E. Direct repair parties to scene.
- F. Plot damage area on damage control display plans and set secondary flooding boundaries.
- G. Send radio report (on master's order).
- H. Calculate the ship's stability status.
- I. After determining the area and extent of damage and directing zone area personnel to assist repair officers as necessary, the master may direct zone area personnel remote from the collision area to clear away and lower designated boats to the embarkation deck.

VI. SIGNAL. In case of an imminent or actual collision, the senior deck watch officer will sound the general alarm bells and ring the ship's bell rapidly for at least 10 seconds. The casualty will also be announced on the PA system, followed by necessary instructions.



CHAPTER I

EMERGENCY BILLS

Section 1.4

ABANDON SHIP BILL

I	Purpose	IV	Conditions of Readiness
II	Organization	V	Emergency Procedures
III	Responsibilities	VI	Signals

I. PURPOSE. This abandon ship bill provides assignments of key personnel and defines their duties in preparing for and abandoning ship.

II. ORGANIZATION. The ship's key personnel shall be organized for abandoning ship as follows:

Master	-----	In command on bridge.
First Officer	-----	In charge of preparation and launching operations.
Chief Engineer	-----	In charge of the engine department.
Chief Steward	-----	In charge of the steward department and directing assistance to cabin class passengers.
COMILDEPT	-----	On bridge and directing evacuation of troops and hospital patients.
Second Officer	-----	Fix ship's position and inform master and radio officer for inclusion in distress signal.
Boat Commanders	-----	At boat stations, readying all boats for launching.
Boat Commanders (second in command)	-----	At boat stations, readying boats in absence of boat commanders.
Master-at-arms	-----	Directing launching of life floats.

III. RESPONSIBILITIES.

A. Master. The master is responsible for the over-all preparation and actual abandonment of ship. He is responsible for the readiness and proper use of all lifesaving equipment

B. First Officer. The first officer is in charge of the launching procedures. He shall direct the readying and launching of all boats, life rafts and life floats.

C. COMILDEPT. The COMILDEPT is responsible for the control, direction, mustering and safety of troop class passengers, and for medical patients in the hospital area.

D. Chief Engineer. The chief engineer will maintain power and lights until notified by the master to abandon the engineering spaces. He shall then secure the operating machinery and lift the boiler safety valves by means of the hand-lifting gear. He shall insure that the emergency generator is left operating.

E. Senior Radio Officer. The senior radio officer shall transmit, as directed by the master, the distress signal and other messages. He shall see that the portable emergency radio is carried to the abandon ship station as provided in the station bill.

F. Second Officer. The second officer shall fix the ship's position and so inform the master and senior radio officer. He shall also determine course and distance to nearest land for use if necessary.

G. Boat Commanders. The boat commanders shall supervise their boat crews in preparing to abandon ship. The second-in-command of senior officers' boats (master, chief engineer, first officer and first assistant engineer) shall supervise their boat crews in clearing away and swinging out their boats. Boat commanders shall direct the safe embarkation and seating of their passengers and crew and shall lower their boats to the water when the signal is sounded, clear away from the ship's side, and stand by to pick up other personnel or to receive further orders.

H. Steward Officers. Steward department officers in charge of mustering cabin class passengers shall report absentees to the bridge. They shall direct passengers to their boat stations, assist them in securing their life jackets, and assist them into the boats. If time permits, they shall search their assigned cabin areas for incapacitated passengers and assist them to their boat stations. They shall see that additional blankets are provided.

IV. CONDITIONS OF READINESS. Prior to the decision to abandon ship, "Emergency" condition would have been set as a result of fire, collision, or other casualty. "Emergency" condition will be maintained to the maximum extent possible throughout preparation for and abandon ship.

V. EMERGENCY PROCEDURES. The master may, prior to making the decision to abandon ship, do the following:

A. Clear away, swing out and lower all boats to the embarkation deck.

B. Ready all life floats from the ship's centerline to the deck near the rail.

C. Radio in the current emergency situation and the possibility of abandoning ship.

D. Get passengers and troops off, leaving a skeleton crew on board for salvage work.

E. Abandon ship procedures are spelled out in detail in the Lifeboat Training Guide (COMSTS INSTRUCTION ~~12250.2A~~
P12410.1A)

VI. SIGNALS. The standard signals or alarms for abandoning ship are as follows:

A. More than six (seven or more) short blasts and one long blast on the

ship's whistle and the same signal on the general alarm bells.

B. The actual lowering of the boats from the embarkation deck will be accomplished on the master's signal of one short blast of the whistle.

C. Stop lowering boats --two short blasts.

D. Recall and recover boats -- a short, a long, and a short blast ("R").



CHAPTER I

EMERGENCY BILLS

Section 1.5

ABC DEFENSE BILL

I Purpose	V Conditions of Readiness
II Organization	VI Signal
III Equipment	VII Emergency Procedures
IV Responsibilities	VIII Training

I. PURPOSE. This ABC defense bill organizes ship's personnel for defensive measures against atomic, biological and chemical attack (ABC defense).

A. Objectives. The objectives of ABC defense are to minimize effects of ABC attacks by:

1. Prescribing defensive procedures to be followed at sea and in port.
2. Delegating responsibilities for defensive measures.
3. Organizing for drills, training and emergency action.
4. Assuring the setting of "Emergency" (Buttoned-Up) condition of readiness.
5. Providing for the evacuation and care of casualties.
6. Providing for the direction of and assistance to passengers.
7. Manning of emergency stations and special duty assignments.
8. Insuring the maintenance of stability.
9. Combating fires.
10. Using the washdown countermeasure (water curtain).
11. Controlling flooding.
12. Monitoring and decontamination of exposed personnel.
13. Maintaining and using detection equipment.

II. ORGANIZATION. The crew is organized for shipboard ABC defense in conjunction with damage control as set forth in the ship's station bill. ABC defense includes training, drills, and emergency action in order to "Button-Up" and minimize the effects of an ABC attack. Shipboard organization includes the following:

A. Damage Control Central. The damage control officer shall supervise the following:

1. Two-way interior and inter-station communication.
2. Effective countermeasures.
3. Evaluation of the tactical situation.

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4. Material decontamination and monitoring for atomic, biological and chemical effects.

5. Care of personnel casualties.

6. Evacuation.

* 7. Moving damage control central down to a more protected location in an actual ABC defense situation.

B. Repair Parties. Complement permitting, two repair parties shall be established. Assignment of personnel shall be as shown on the ship's station bill.

1. Repair I.

a. In passenger ships, repair I is composed principally of deck department personnel.

b. Is responsible for material decontamination.

c. Will rig the washdown countermeasure (water curtain).

d. Before, during and after start of the washdown countermeasure (water curtain), the officer in charge shall assign two men, suitably dressed in foul weather clothing, to assure the following before evacuating the topside areas:

(1) Fire hose not kinked or fouled.

(2) Nozzles in fog position and producing an efficient fog spray.

2. Repair II.

a. Composed of engineroom personnel.

b. Responsible for monitoring atomic, biological and chemical effects.

c. Sets up boundaries of contamination, and monitors traffic.

C. Zone Area Personnel. Under direction and supervision of their zone area officer, zone area personnel will be organized and trained to accomplish any or all of the following emergency duties:

1. Patrol assigned stations, maintaining continuous communication with damage control central (through zone area officer) reporting conditions, casualties, and status of emergency situation.

2. Make required closures of:

a. Ports and deadlights.

b. Watertight doors.

c. Fire screen doors.

d. Hatches.

e. Ventilation dampers.

f. Scuppers.

g. Additional closures.

3. The assignment of personnel to "Button-Up" any zone area of the ship will be as shown in the ship's station bill.

4. Assist ABC defense officer as directed.
5. Maintain discipline and assure compliance with all orders, practices and policies, particularly in decontamination routes.
6. Carry emergency equipment and materials and serve as stretcher bearers.
7. Tend remote controls, and other required fittings.
8. Maintain constant patrol of assigned area for:
 - a. Signs of fire and smoke.
 - b. Hot bulkheads or decks.
 - c. Water leaks.
 - d. Ruptures in piping and electric cables.
 - e. Indications of biological or chemical agents.
9. Direct and assist in the evacuation of passengers and crew from affected areas.
10. Rig assigned stations for the washdown countermeasure (water curtain).

D. Key ABC Defense Station Personnel. Personnel assigned to key station will:

1. Establish communication and report readiness.
2. Man and ready their stations as assigned. These include:
 - a. Forward and after diesel fire pumps (where installed).
 - b. Emergency diesel generators.
 - c. Main distribution board.
 - d. Remote control bilge suction.
 - e. CO² manifold control.
 - f. CO² cylinder bottle room.
 - g. Steering engine room.
 - h. Bridge and deck watch.
 1. Engine room and auxiliary engine room watch.

E. Special Duty Assignments will include:

1. Rigging the washdown countermeasure and wetting down of topside areas.
2. Evacuation of topside stations.
3. Decontamination stations. (All showers on main deck and below)
4. Monitor teams.
5. Messengers and phone talkers (as specified in station bill).

6. Evacuation and care of patients.
7. Release and supervision of prisoners.
8. Rough decontamination of topside areas after monitoring.

F. In port (anchored or moored).

1. Sufficient qualified personnel will be assigned for the security of the ship.
2. When passengers or troops are embarked, or when conditions dictate, insure that sufficient qualified personnel are aboard to minimize effects of attack by:
 - a. Compliance with ABC defense procedures.
 - b. Getting ship underway.
 - c. Carrying out defensive countermeasures - "Buttoning-Up" the ship, rigging the washdown countermeasure, and protecting personnel.
3. Muster and assemble crew. All crew members aboard ship are in duty status during emergencies.

III. EQUIPMENT.

A. Washdown. All MSTS ships will be provided with sufficient wye gates, fire hose, all-purpose nozzles, and nozzle clips or hang brackets on which to secure the fog nozzles to generate an adequate water curtain or washdown countermeasure for ABC defense. All hands should know the location of these washdown clips in their area (they are painted international orange) so that they can help rig the washdown system quickly.

B. Protective Clothing. Allowances of protective clothing are authorized for monitoring and decontamination teams as an emergency item. Where stowage space and inspection is appropriate, this clothing may be requisitioned as a regular allowance and used in ABC defense drills. Shipboard foul weather gear may also be used as protective clothing.

C. Radiacs. Radiac equipment allowances are provided all ships to detect and measure radiation hazards. It should be stowed in the radioroom, protected from moisture to avoid corrosion, and checked, calibrated and repaired ashore by authorized radiac repair shops.

D. Decontamination Stations. Personnel decontamination stations shall be located in the interior of each ship in accordance with COMSTS and BUSHIPS Instructions. Each station shall be properly marked, have a separate entrance to and exit from the shower area, be equipped with a contaminant disposal can and a roll of brown wrapping paper for use as anti-contaminant carpeting, and have direction signs showing routes to and from stations.

1. Background. Personnel decontamination stations were originally located in specified washroom spaces, with necessary labels and route markers. Later BUSHIPS designated all shower spaces on the main deck and below as decontamination stations, continuing the use of labels and route markers. MSTS conformed to this procedure and required these markings in MSTS ships. Decontamination station labels and route markers have now been deleted by BUSHIPS from plans for new ship construction and conversion since ships' personnel are familiar with shower locations in their ships. However, while these markings in ships in operation will be retained, they need not be replaced if lost, removed or damaged.

2. MSTS Policy. Since most MSTS ships have decontamination station labels and route markers, these markings will be retained ~~but need not be replaced if lost, removed or damaged.~~ *and will*

3. Training. In ABC training and drills, emphasis will be placed on the proper indoctrination of crew in decontamination routes, traffic control, decontamination procedures, and direction of passengers.

E. Decontamination Equipment. In addition to the general washdown counter-measure, one or two decontamination areas for decontaminating ships' portable gear shall be designated in suitable locations which provide good drainage of contaminated liquids. Material and equipment readily available aboard ship should be adopted for use in surface decontamination. This includes steam, salt water detergents, soap solutions, solvents, caustics, acids, scrubbers, chippers and paint sprays.
Hypochlorite (bleaching bleach)

IV. RESPONSIBILITIES. Key personnel will have the following responsibilities for ABC defense:

A. Master.

1. Over-all administration, efficient organization and training of crew in ABC defense.
2. Maneuvering ship to avoid or minimize the effects of ABC attack.
3. Direct preparatory measures prior to ABC attack.
4. Evaluate the readiness of ship and personnel after an ABC attack.
5. Order decontamination procedures for personnel and ship following control of structural damage, fire and flooding.
6. Conduct inspections and drills to assure readiness for ABC defense (emphasis shall be on use of material and equipment available aboard ship for surface decontamination).
7. Assure proper marking and equipping of decontamination stations and proper marking of entry and exit routes.
8. Prepare to render aid and assist evacuation of highly contaminated ships or areas as may be directed by SOPA or OTC.
9. Prepare ship to get underway or to continue on mission.
10. When moored in port, particularly when passengers are embarked, insure that sufficient personnel are aboard to insure ship's readiness to avoid and minimize the effects of ABC attack.

B. First Officer.

1. Assist the master in analyzing the tactical situation in ABC warfare attack and defense techniques.
2. Direct and coordinate training and exercise of the crew in ABC defense procedures.
3. Supervise the preparatory measures prior to ABC attack.
4. Assume duties of the COMILDEPT for the safety of passengers (in cargo ships) when there is no military department aboard and passengers are carried. Also, in absence of a medical department, provide for first-aid treatment, monitoring of food and water after attack, and decontamination of personnel.

C. Chief Engineer.

1. Organize the engineering department for emergency operations. Carry out preparatory measures applicable to the engineering department.

2. Secure the evaporators when a sudden shock is experienced or when the ABC alarm is sounded, to prevent contamination of fresh water.
3. Keep master informed regarding state of contamination in engineering department.
4. Act as technical assistant to master on matters pertaining to ABC defense.
5. Insure the continued indoctrination and training of engineer officers and crew in ABC defense procedures.
6. In port, moored or anchored, prepare to the ship underway.

D. COMILDEPT.

1. Assure participation by military department personnel and passengers in ABC defense procedures.
2. Collaborate and coordinate with the master during emergencies and, upon his orders, direct activities for the safety of troops and passengers.
3. Instruct and train passengers, troops and military department in ABC defense measures.

E. Chief Steward.

1. Take all possible precautions to prevent contamination of food supplies and messing equipment.
2. Serve no food or drink following an ABC attack except with the approval of the medical officer (passenger ship) and then only after it has been inspected and monitored.
3. Issue additional materials and equipment required for decontamination.
4. Prepare to feed personnel in noncontaminated spaces during the decontamination period.
5. Insure the continued indoctrination and training of steward's department personnel in ABC defense procedures.
6. Carry out preparatory defensive measures applicable to steward's department.

F. First Assistant Engineer.

1. As ABC defense officer, advise the master in matters concerning ABC defense.
2. Coordinate with the damage control officer in organization of personnel for ABC defense.
3. Maintain custody and issue ABC defense equipment and devices not otherwise assigned.
4. Insure that the ship is effectively prepared for ABC defense.
5. Indoctrinate the crew in all phases of ABC defense exercises.
6. Keep informed of recommended practices for defense against ABC warfare agents and collaborate with the damage control officer regarding defensive measures and training plans.

7. Prior to attack, energize the washdown countermeasure system.
8. Locate residual hazards by monitoring and detecting. Keep master informed of areas contaminated and isolated.
9. Supervise monitor teams and maintain log of personnel exposure.
10. Inspect to insure the quick operation and tightness of closure fittings.

G. Senior Radio Officer.

1. Responsible to the ABC defense officer for the care and maintenance of radiac equipment.
2. Train 1st and 2nd radio officers in the use of radiac equipment and monitoring procedures.

H. Navigator.

1. Relieve the deck watch officer, assist master on bridge.
2. Fix the ship's position and pass it to the radio officer.
3. Maintain a plot of radioactive clouds and fallout areas; wind force and direction, tide and currents; and recommend course changes to master to avoid contaminated areas.

I. Repair Party Officers.

1. Supervise monitoring and decontamination within their areas as directed by the ABC defense officer.
2. Assist the ABC defense officer in the training and indoctrination of personnel in ABC defense measures.

J. Zone Area Officers.

1. Maintain communication with damage control central and report when manned, the securing of closures, status report of material and personnel deficiencies or casualties, and assist repair officer as directed.
2. Furnish stretcher and material bearers as required.
3. When circumstances warrant, direct evacuation of passengers.

K. Medical Officer.

1. Treat casualties of ABC warfare agents and maintain records required for exposure to ABC warfare agents.
2. Insure proper equipage of decontamination stations and their manning by qualified personnel, to direct passengers and crew.
3. Inspect the food and water supply as soon as practicable following an ABC attack.
4. Keep abreast of developments in the medical aspects of ABC defense and act as technical adviser to the master and ABC defense officer.
5. Examine exposed personnel after completion of decontamination and monitoring.
6. Maintain necessary medical ABC defense equipment and supplies, including BW and CW sampling kits when made available.

L. Watch Officers (Deck & Engine)

1. Take necessary initial action (see VII below).
2. Notify the master and chief engineer.
3. Sound the ABC defense alarm.
4. Button-up and start washdown.

M. In Port, Relief Watch Officers.

1. In addition to duties and stations listed on the ship's station bill, be familiar with ABC defense procedures.
2. Muster and assemble crew aboard ship to commence countermeasures and minimize effects of attack.
3. Provide for the following:
 - a. Preparation to get underway.
 - b. Wetting down of topside areas.
 - c. Evacuation of prisoners.
 - d. Evacuation and care of patients.
 - e. Manning of decontamination stations.
 - f. Monitor teams.

N. Radio Officer.

1. Establish communication with the cognizant MSTS command.
2. Comply with orders issued to MSTS ships by the senior naval officer afloat or other competent military authority during an emergency.

V. CONDITIONS OF READINESS.

A. The provisions of this bill shall be placed into effect immediately in case of imminent attack or upon attack by atomic, biological or chemical agents either underway or in port. Set readiness condition of "Emergency" (Buttoned-Up) as prescribed in "Damage Control Bill."

B. Defensive Measures. Defensive measures before and following an atomic, biological or chemical agent attack must be clearly understood by all personnel. Confusion and panic following attack must be avoided.

C. Taking Cover. All personnel will remain inside after making required closures and rigging the washdown countermeasure (water curtain) for protection of ship. Repair personnel assigned to exterior lockers will report to designated locations within the ship.

VI. SIGNAL. The ABC defense alarm is a steady ringing of the general alarm for not less than 10 seconds followed by short and long rings ("A") on the general alarm bells for at least another 10 seconds. Supplementary PA announcements shall be made in ships so equipped.

VII. EMERGENCY PROCEDURES. During drills and in actual emergencies, upon sounding of the ABC defense alarm, all stations shall be manned as assigned in the ship's station bill. Ships in port shall comply with "Atomic Attack Instructions for MSTS Ships in Port, "MSTS Form 3541-4, which shall be posted