

CHAPTER 2

DAMAGE CONTROL ORGANIZATION, COMMUNICATION, AND INFORMATION

Learning Objectives: Recall the duties and responsibilities of members of repair parties; identify damage control communication system; and recall information pertaining to damage control diagrams and blueprints.

Damage control is vital to all ships in the Navy. If a ship is damaged in battle or by a fire or storm, the damage has to be repaired quickly. Every ship must be organized to accomplish these critical operations. This organization is accomplished through assigned jobs, training, instructions, use of diagrams, and efficient communications. In this chapter, we will discuss the damage control organization, the various means of communications, and the ship's diagrams and blueprints.

DAMAGE CONTROL ORGANIZATION

Learning Objective: Recall the elements of damage control organization and the duties and responsibilities of members of repair parties.

Organization is the key to successful damage control. The damage control organization establishes standard procedures for handling various types of damage. It sets up training for these procedures so that every person will know immediately what to do in each emergency situation.

Damage control has various vital objectives, both preventive and corrective. All personnel must adhere to these objectives. Some of these actions are as follows:

1. Maintain the established material conditions of readiness.
2. Train all personnel in all aspects of shipboard damage control.
3. Maintain damage control systems and equipment in the best condition possible to ensure survivability.

The ship's damage control organization must be coordinated with other elements of the ship's organization to achieve these goals. Therefore, each department must assign specific damage control duties to individuals in each division. This includes the

designation of a divisional damage control petty officer (DCPO) and an alternate. The corrective aspect of damage control requires the damage control battle organization to be able to restore the offensive and defensive capabilities of the ship promptly.

The damage control organization consists of two elements—the damage control administrative organization and the damage control battle organization.

ADMINISTRATIVE ORGANIZATION

The damage control administrative organization is part of the engineering department organization. However, each department has major administrative and preventive maintenance responsibilities. These responsibilities include the planned maintenance for damage control equipment, systems, and fixtures within the departmental spaces. Each department head ensures that damage control PMS assignments are completed and that discrepancies are documented and corrected.

BATTLE ORGANIZATION

The damage control battle organization includes damage control central (DCC), various repair parties, and battle dressing stations. The organization varies somewhat from one ship to another. The difference depends upon the size, type, and mission of the ship. However, basic principles apply to all damage control battle organizations. These basic principles are as follows:

1. Ensure that all personnel within the organization are highly trained in all phases of damage control. They should also be trained in the technical aspects of their ratings to assist in the control of damage.
2. Decentralize the organization into self-sufficient units. These units must have communication with each other. They must be able to take corrective action to control the various types of damage.
3. Have one central station, the DCC, receive reports from all damage control units. The DCC

evaluates and initiates those orders necessary for corrective action from a ship-wide point of view. This station also reports to and receives orders from the bridge (command control). These reports concern matters that affect the ship's buoyancy, list, trim, stability, watertight integrity, and chemical, biological, and radiological (CBR) defense measures.

4. Ensure that damage control units assign work that is peculiar to a single department are under the direct supervision of an officer from that department.

5. Provide for relief of personnel engaged in difficult tasks, for battle mending, and for the transition from one condition of readiness to another. Develop procedures to ensure that all relief crews are informed of the overall situation.

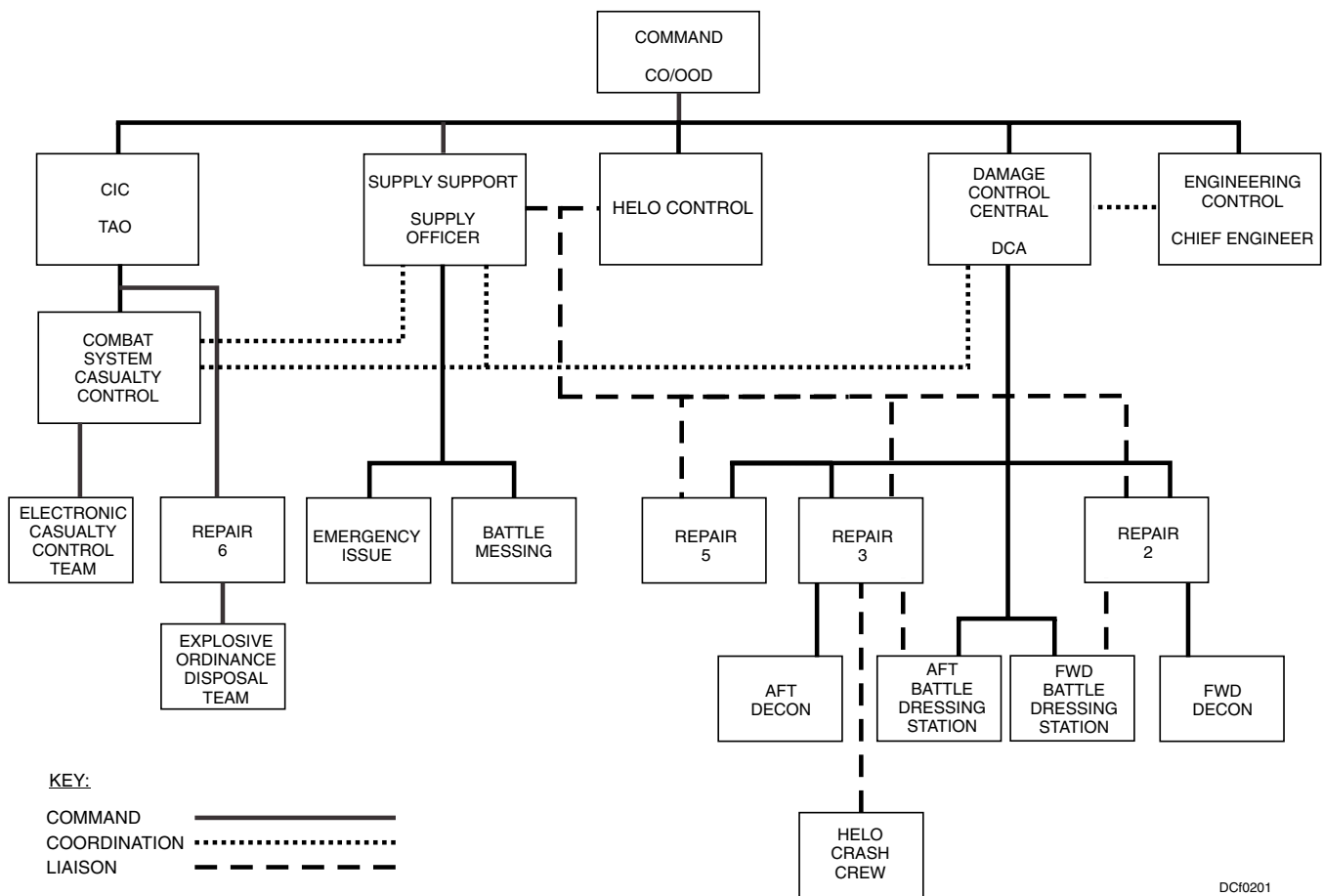
6. Provide for positive, accurate, and rapid communications between all damage control units. An overall coordination of effort and direction can then be readily accomplished.

7. Provide for a repair party, remotely located from DCC, to assume the responsibilities of DCC, in the event that DCC becomes a battle casualty.

The battle station for the damage control assistant (DCA) is in DCC. The primary damage control battle organization units, as shown in figure 2-1, are repair parties or teams. Battle dressing stations should be close to the repair parties.

Damage Control Central

Personnel assigned to the DCC are under the supervision of the DCA. These personnel perform the following tasks:



DC0201

Figure 2-1. Damage control battle organization.

- Receive and evaluate information from all repair parties.
- Inform command control of conditions affecting the material condition of the ship, including buoyancy, list, trim, stability, and watertight integrity.
- Initiate orders to repair parties, as necessary, to direct the control of damage.
- Keep command control informed of such factors as progress in combating damage, fire, and flooding; the effects of CBR attack; and significant personnel casualties. Evaluate the necessity of flooding the magazines that are endangered by fire and recommend corrective action to the commanding officer. Order repair parties to flood the necessary magazines when ordered by the commanding officer.
- Control watertight integrity, flooding, counterflooding, and dewatering.
- Post and label charts and diagrams to show the subdivisions of the ship and its vital piping and electrical systems.
- Post a casualty board in DCC to show the damage sustained by the ship visually and the corrective action in progress. Ensure a simplified schematic is maintained on the bridge for visual reference by command control on the casualty data reported by DCC.
- Post a stability board to show the liquid loading, the location of flooding boundaries, the effect of list and trim caused by flooded compartments, and the corrective action taken with regard to stability. A liquid loading and flooding effects diagram is normally used for this purpose.
- Prepare a list of access routes for ready shelters, deep shelters, electronic casualty control, and battle dressing stations.
- Prepare graphic displays to show what action was taken to correct damage control systems and electrical systems.
- Prepare deck plans to show the areas contaminated by CBR agents; show the locations of, and safe routes to, battle dressing stations and decontamination stations.
- Prepare a closure log to show the state of closure of the ship.

- Prepare a contamination prediction plot.

Repair Parties and Teams

Repair party officers should take charge of activities in their area of responsibility after damage is sustained. They should keep DCC informed of the situation. There are certain repair parties that may be subdivided to provide adequate protection for large areas. Sometimes prescribed responsibilities may be the joint responsibility of two or more repair parties. When repair parties are subdivided, they are designated by the number of the parent party followed by a letter (such as 1A, 1B). Table 2-1 summarizes the repair parties and teams required by various types of ships.

COMPOSITION.—The composition of the repair parties must permit each party to handle the damage and casualties that occur within their assigned areas. Each ship must designate a repair party as secondary DCC. Also, a complete succession for command of damage control will be promulgated and posted in each repair locker. The physical location of each repair locker, the seniority of each repair locker officer, and the communication facilities available should be considered when succession of command is designated. The following general composition is considered necessary to ensure the effectiveness of the repair parties.

Repair 1 (Main Deck Repair Party).—An officer or chief petty officer from a deck division is in charge. This repair party is made up of deck division petty officers and nonrated personnel—Storekeepers, Information Systems Technician, Electrician’s Mates, Hospital Corpsmen, and aviation details (except in aircraft carriers). Some engineering petty officers may also be required.

The hangar deck officer is in charge of Repair 1H, also known as the hangar bays repair party. Repair 1H is a subdivision of Repair 1. An officer or chief petty officer is assigned as an assistant for each hangar bay. Repair 1H is made up of petty officers and nonrated personnel from the aviation ratings. Engineering and deck petty officers may also be required.

Repair 2 (Forward Repair Party).—An appropriately trained officer or chief petty officer is in charge. This repair party is made up of petty officers of the deck and engineering departments—Electrician’s Mates, Storekeepers, Hospital Corpsmen, and nonrated personnel.

Table 2-1. Repair Parties and Teams

Repair Party/Team	Type of Ship			
	Aircraft Carrier (See Note 1)	Cruiser, Destroyer, Frigate	Auxiliary and Other Surface Craft over 225 feet	Auxiliary and Other Surface Craft less than 225 feet
Main Deck Repair 1	1F, 1B, 1A		X (See Note 5)	X (See Note 7)
FWD Repair 2	X	X	X	X (See Note 11)
After Repair 3	X	X	X	X (See Note 11)
After Repair 3A			X (See Note 12)	
After Repair 3B			X (See Note 12)	
Amidship Repair 4	X (See Note 2)		X (See Note 6)	
Propulsion Repair 5	X (See Note 2)	X	X (See Note 7)	X (See Note 7)
Ordnance Casualty-Control Team 6	X			
Galley Deck and Island Structure Repair 7	7F, 7B, 7A			
ECCT 8	X (See Note 3)	X (See Note 3)		
Aviation Fuel Repair Team	X		X (See Note 4)	
Crash and Salvage Team	X	X (See Note 4)	X (See Note 4)	
Explosive Ordnance Disposal (EOD) Team	X (See Note 8)		X (See Note 9)	X (See Note 10)
At Sea Fire Party	X	X	X	X
DC Equipment Locker	X (See Note 13)	X (See Note 13)	X (See Note 13)	X (See Note 13)

NOTES:

1. Pertains to CV, CVN, LHA, LHD, and LPH.
2. In certain classes of these ship types, the designation of Repair 5 and Repair 5 as “forward/after propulsion repair” results in more efficient use of personnel.
3. Applies to those types as determined by type commanders and approved by fleet commanders in chief.
4. Applies to ships equipped for manned helicopter operation.
5. Large amphibious ships.
6. Large new construction auxiliaries; includes superstructures.
7. Type commanders may omit Repair 1 and/or in those ships where appropriate.
8. Applies to ships equipped for armed aircraft operations.
9. Applies to AE types.
10. MHC & MCM operations.
11. MHC & MCM only. Supports R&A equipment requirement, equipment repositioning for major conflagration; does not require manning.
12. LPDs and LSDs shall remain repair lockers IAW type commander instruction to provide full coverage of assigned areas on both sides of vehicle stowage decks and the well deck and allow entry to both sides of main propulsion spaces by fire parties.
13. Supports R&A equipment requirement, equipment repositioning for major conflagration; does not require manning.

Repair 3 (After Repair Party).—Same as or very similar to Repair 2.

Repair 4 (Amidship Repair Party).—Same as or very similar to Repair 2.

Repair 5 (Propulsion Repair Party).—An engineering department officer is in charge. This repair party is made up of an electrical officer or senior Electrician's Mate and a broad cross section of personnel within the engineering ratings. In the assignment of personnel to Repair 5, emphasis should be placed on fireroom/engine room takeover qualifications instead of on damage control qualifications.

Repair 6 (Ordnance Repair Party).—An officer or chief petty officer of the weapons department is in charge. This repair party is comprised of Gunner's Mates, Fire Control Technicians, and Electrician's Mates. This party may be divided into forward and after subgroups; that is, 6A, 6B.

Repair 7 (Gallery Deck and Island Structure Repair).—This repair party is required on aircraft carriers and may be necessary on other types of ships. An appropriately trained officer is in charge. The party is made up of personnel from the air and engineering departments and can be augmented by personnel from other departments when necessary.

Repair 8 (Electronics Repair Party).—An officer or chief petty officer of the operations department is in charge. This repair party is comprised of Electronics Technicians, Sonar Technicians, Fire Control Technicians, and Electrician's Mates. This repair party works under the supervision of electronics casualty control.

Aviation Fuel Repair Team and Crash and Salvage Team.—These teams are required on aircraft carriers and other ships that are equipped for manned helicopter operations. On aircraft carriers, an officer or chief petty officer of the air department is in charge and this team is made up of air department personnel. On other ships that are equipped for manned helicopter operations, appropriate deck and engineering department personnel are assigned.

Ordnance Disposal Team.—The ordnance disposal team is made up of specially trained personnel deployed aboard ships as required. The team is organized within and administered as a unit of the ship's weapons department. The ordnance disposal team normally operates under the direction of the ship's weapons officer.

GENERAL RESPONSIBILITIES OF REPAIR PARTIES.—The general responsibilities of repair parties demand maintenance of close coordination between the parties. Responsibilities common to all repair parties are as follows:

- Repair electrical and sound-powered telephone circuits.
- Give first aid to injured personnel and then transport them to battle dressing stations without seriously reducing the damage control capabilities of the repair party.
- Detect, identify, and measure dose and dose-rate intensities from radiological involvement.
- Survey areas and personnel; decontaminate those that receive radiological contamination.
- Obtain samples of biological agents to be sent to a laboratory for identification because ships do not have the capability to identify biological agents.
- Identify any chemical agents used.
- Decontaminate areas and personnel affected by biological or chemical attack.
- Control and extinguish all types of fires.
- Evaluate and report correctly the extent of damage in their areas. This responsibility includes maintaining the following:
 1. A graphic display board showing damage and action taken to correct disrupted or damaged systems.
 2. Deck plans showing locations of CBR contamination and locations of, and safe routes to, battle dressing and personnel decontamination stations.
 3. A casualty board for visual display of structural damage.

SPECIFIC RESPONSIBILITIES OF REPAIR PARTIES.—The specific responsibilities of the repair parties are as follows:

- Repair 1, 2, 3, 4, and 5 will maintain the stability and buoyancy of the ship as follows:
 1. Station themselves to reach all parts of the ship while opening a minimum of watertight closures.
 2. Repair damage to structures, closures, or fittings that maintain watertight integrity.

Shore, plug, weld, and caulk the bulkheads and decks; reset valves; and blank or plug lines through watertight subdivisions of the ship.

3. Sound, drain, pump, counterflood, or shift liquids in tanks, voids, or other compartments when necessary. Be familiar with the methods used to transfer liquids from one location to another and the equipment used for that purpose.
4. Maintain two status boards for accurate evaluation of underwater damage. The Stability Status Board (Flooding Effects Diagram) is a visual display of all flooding, flooding boundaries, corrective measures taken, and effects on list and trim. The Liquid Load Status Board shows the current status of all fuel and water tanks and the soundings of each tank in feet and inches.

• Repair 1, 2, 3, and 4 will maintain the ship's structural integrity and maneuverability as follows:

1. Repair primary and auxiliary methods of steering.
2. Clear the upper decks of wreckage that interferes with the operation of the battery, ship, or fire control stations. Clear wreckage that fouls the rudder, propellers, or sides of the ship. Extinguish all types of fires.
3. Maintain and make emergency repairs to battle service systems. These systems include ammunition supply, ventilation supply, high- and low-pressure air lines, communications systems, electrical systems, and cooling water systems.
4. Provide emergency power to vital electrical equipment, using casualty power cables.
5. Assist the crash and salvage team as required.
6. Repair damage above the waterline that could cause flooding in the event of further damage.

• Repair 5 will maintain the ship's propulsion equipment as follows:

1. Maintain and make repairs, or isolate damage, to main propulsion machinery and boilers.
2. Operate, repair, or isolate vital systems. Modify the methods of segregating vital systems when necessary.

3. Assist in the operation and repair of the steering control systems.
4. Assist in the maintenance and repair of communications systems.
5. Assist Repair 1, 2, 3, and 4 and the crash and salvage team when required.

• Repair 6 will protect ordnance and magazines as follows:

1. Make emergency repairs to all ordnance installations, including the supply and renewal of parts.
2. Operate the magazine sprinkler systems and other ordnance systems.
3. Assist other repair parties in extinguishing fires in the vicinity of magazines.
4. Assist other repair parties in making hull damage repairs.
5. Station repair party control at the forward magazine sprinkler control station.
6. Maintain communications with weapons control, DCC, and its own detached units.
7. Isolate those magazines to be sprinkled from others in the same group.
8. Notify DCC of the sprinkling/flooding of magazines. Remember that the magazines are NOT to be flooded unless authorized by the commanding officer.

• Repair 1 and its subdivisions will maintain the main deck and hangar bays in aircraft carriers as follows:

1. Control and extinguish fires.
2. Repair damage in assigned areas.

• Repair 7 will maintain the gallery decks and island structure in aircraft carriers as follows:

1. Control and extinguish fires.
2. Repair damage in assigned areas.

• Repair 8 will maintain electronics equipment on selected ships. On ships with highly complex electronic weapons systems, such as missile ships and large aircraft carriers, Repair 8 will meet its responsibilities as follows:

1. Repair radar, radio, countermeasures, and all associated electronics equipment.
2. Repair fire control equipment.

3. Repair sonar equipment.
4. Extinguish minor electrical fires.

- The aviation fuel repair team will maintain the aviation fuel systems as follows:

1. Operate, maintain, and repair all aviation fuel systems.
2. Extinguish fires.

- The crash and salvage team will maintain the flight deck and hangar deck as follows:

1. Extinguish aircraft fires, rescue pilots promptly, and conduct aircraft salvage operations on the flight deck.
2. Make repairs of all types to the flight deck and associated equipment.
3. Make repairs of all types to the hangar deck and associated equipment.

- The weapons officer is responsible for maintaining protection of exposed ordnance. The air officer is responsible for this function during flight quarters on the flight and hangar decks. The principal assistance for this function comes from the explosive ordnance disposal team that has responsibilities as follows:

1. Remove ordnance from aircraft on fire, or at any time required.
2. Safely jettison ordnance as necessary to prevent damage to the ship.

SPECIAL ORGANIZATION OF REPAIR PARTIES.—Special organization, with regard to stations and responsibilities, is described below for specific types of ships.

- Repair 5 may be split on large ships. Each half of the party is assigned one half of the engineering plant. This arrangement allows for maximum use of manpower and equipment and for greater dispersal of personnel. However, each section of the repair party must be assigned a sufficient number of qualified engineering casualty control and damage control personnel.

The responsibilities of Repair 5 are assigned to the appropriate repair party designated by the type commander on small ships that do not have a Repair 5 (see table 2-1).

- The aviation fuel repair team and the crash and salvage team may be combined in small carriers. They

may also be incorporated into existing repair parties on ships equipped for manned helicopter operations.

Battle Dressing Stations

Most ships have a minimum of two battle dressing stations equipped for emergency handling of personnel battle casualties. However, many smaller ships, such as minesweepers, have only one such station. Those ships having two or more battle dressing stations should have the stations well separated from each other. Each battle dressing station must be accessible to the stretcher bearers from repair parties within the vicinity. Medical department personnel as assigned by the senior member of that department should man each battle dressing station. First-aid kits or boxes are available at battle stations as well as battle dressing stations. The medical department furnishes the material for these first-aid kits and boxes.

At-Sea Fire Party

Most surface ships have organized a special fast-response fire party, known as the at-sea fire party. This party is sometimes called the “Flying Squad.” It may be a standing organization or part of a special detail organized for special evolutions. These special evolutions include weapons handling, underway replenishment, helicopter operations, and towing operations. The at-sea fire party will carry out the following responsibilities:

- Respond immediately to fire alarms when the ship’s repair parties are not manned.
- Extinguish small fires without disrupting other ship operations.
- Control fires until ongoing sensitive critical evolutions can be secured and general quarters (GQ) stations can be manned and ready.

Where appropriate, an at-sea fire party may also perform the duties of a helicopter fire party according to *NAVAIR 00-80R-14*.

The at-sea fire party may be incorporated intact into the GQ damage control organization. It may be a repair party or unit, or it may be composed of members of various repair parties, as manning permits.

The at-sea fire party will respond to all fires at sea, except when the ship is already at GQ. If a fire breaks out and the fire alarm is sounded, immediately followed by the general alarm, the at-sea fire party will continue to respond to the fire. When GQ stations have

been manned, the appropriate repair party will relieve the at-sea fire party at the scene. The DCA is responsible for the organization and training of the at-sea fire party.

The functions and manning requirements for both at-sea and in-port repair parties are shown in figure 2-2.

NUMBER OF PERSONNEL	FUNCTION
1	Repair Party Leader ¹
1	Fire Marshal ²
1	Scene Leader ⁹
1	Team Leader "Attack Team" ³
2	Nozzleman "Attack Team"
4	Hoseman "Attack Team" ⁴
2	Plugman
2	Investigator
4	Boundaryman ⁸
2	Messenger/Phone Talker
1	Electrician
1	NFTI Operator ^{5*}
1	Access*
1	Reflashwatch*
1	Overhaul*
2	Smoke Control*
1	Post Fire Test Assistant*
2	Dewatering*
AsAssigned	First Aid ^{6*}
4	Rapid Response ^{7*}

(1) Repair party leader function is required only during Condition I.

(2) Fire marshal function is required in port and at sea during non-Condition I.

(3) The team leader is required when the hose team requires use of the Naval Firefighter's Thermal Imager (NFTI). If the scene leader determines the NFTI is not required, the number 1 nozzleman may assume team leader responsibilities.

(4) Number of hosemen required is based on minimum manning for two 1 1/2-inch hoses. More hosemen may be required based on compartment layout, length of hose run, and size of hose employed.

- (5) NFTI operator function may be combined with other functions. At a minimum personnel assigned the function of scene leader, team leader, nozzleman, investigators, electrician, boundaryman, and overhaulman shall be trained in cardiopulmonary resuscitation (CPR).
- (6) All personnel assigned shall be trained in performing basic first aid and burn treatment and at least one person should be trained in CPR.
- (7) The rapid response team is required in port and at sea during non-Condition I. The team shall be led by the fire marshal. Several of the assigned boundarymen and the electrician may be used to comprise the remainder of this team.
- (8) It is recognized that four boundarymen may not be sufficient to set fire boundaries. Additional personnel may be obtained from other sources, i.e., in-port duty section, other repair lockers, non-critical watch stations, etc.
- (9) The scene leader will make the decision to employ one or more hoses in the attack of the fire.
- Note:** * Denotes functions that may be performed by personnel assigned other functions.

Figure 2-2. Functions and manning requirements for repair parties.

In-port Fire Party

The in-port fire party will function as a repair party while the ship is in port. CBR defense operations are not a normal evolution for an in-port fire party. However, this fire party should still be prepared to handle any incident. There is always a possibility of an accident involving a nuclear weapon or a nuclear reactor. Also, civilian chemical plants have had tanks explode, discharging the contents into the atmosphere. But for the most part, the in-port fire party will normally be concerned with fires and flooding.

The duty in-port fire party organization will vary from one ship to another. The number of personnel assigned to this fire party will depend upon the number available in each duty section. Some ships have enough personnel to stand six-section duty and maintain an effective duty in-port fire party. Other ships may be required to remain in a four-section duty status to maintain an effective duty in-port fire party.

No two emergency situations are identical. Therefore, the corrective action taken will vary to some extent. The responsibilities of each member of the fire party will normally remain the same. However, there

are times when a person will have to assume other responsibilities. As an example, the nozzleman is injured while fighting a fire. The hoseman then takes the nozzleman's place. The nozzleman is evacuated from the scene and another person replaces the hoseman. The responsibilities of some personnel remain the same for fires, collisions, and flooding. However, you do not need a fire fighter in a compartment that is completely flooded. So the assignments of the nozzlemen, hosemen, and some other personnel will change to accommodate the emergency situation at hand.

The following information is a brief description of the responsibilities and requirements of various key fire party personnel. The equipment mentioned in this section will be discussed in more detail later in this nonresident training course (NRTC).

FIRE MARSHAL.—When there is a fire the fire marshal shall proceed directly to the scene of the fire to direct efforts of the rapid response team. If the fire is beyond rapid-response team capabilities, the fire marshal shall turn duties over to the scene leader and assume other duties as directed. These duties may include:

- Being repair party leader.
- Supervising the establishment and maintenance of communications.
- Posting of boundaries.
- Providing direct logistic support. The fire marshal must assume a “big picture” role upon being relieved by the scene leader providing particular attention to the potential for vertical fire spread. The fire marshal will make recommendations for additional personnel or GQ as required by the magnitude of the casualty.

ON-SCENE LEADER.—The on-scene leader is the person in charge at the scene. When a fire is “called away,” the scene leader will proceed immediately to the scene after donning proper protection, equipped to assume control of the fire party. The scene leader will receive reports from team leader and investigators and pass on those reports, as required. The scene leader shall:

1. Wear an oxygen breathing apparatus (OBA) equipped with voice amplifier where available.
2. Immediately assess extent of fire.
3. Determine the firefighting agent to be used.
4. Determine the method and direction of attack.

5. Be positioned where best able to control the fire party.
6. Establish communications as required using best means. Wire-free communication (WIFCOM), where available.
7. Determine the protective clothing requirement for the fire party, based on assessment of conditions found.

TEAM LEADER.—As the team leader, you will direct the efforts of attack teams to extinguish or overhaul a fire. You must know the layout of the affected space, and be aware of any hazards. You will direct personnel while using the Naval Firefighter's Thermal Imager (NFTI). Conditions within the space will include reduced visibility; sometimes there will be no lighting and often there will be smoke or steam. You will direct nozzlemen and hosemen around hazards, following specific routes to reach the source of the fire. Once the fire is extinguished, you will use the NFTI to observe for hot spots and to complete overhaul of the space. You will relay reports of conditions by word of mouth to the on-scene leader.

INVESTIGATOR.—Investigators are assigned to repair lockers to ensure that no further damage occurs outside the boundaries of the existing casualty. Investigators normally operate in pairs, travel assigned routes, and report conditions to the repair locker. As an investigator, you will ensure that the boundaries around the casualty are maintained, and that further damage is not occurring. It may be necessary for you to access locked spaces to ensure their integrity, and you will carry tools to open these spaces. You must have an in-depth knowledge of the ship's layout and the systems that are in your assigned area. To qualify as an investigator, you must complete the required PQS.

NOZZLEMAN.—As the nozzleman, you will man the attack hose nozzle. You will be directed by the team leader through the compartment to extinguish the fire. For your protection, you will be required to wear an OBA. Once the fire is extinguished and a reflash watch is established, you may be involved in the overhaul of the space. You may be involved in conducting atmospheric tests, desmoke the compartment, and further investigations for damage. When conducting atmospheric tests, the accessman will check the space for the percentage of oxygen content and the presence of explosive and toxic gases. You should be qualified in first aid, the operation of all fire-fighting equipment, and the procedures for overhauling a fire.

HOSEMAN.—As a hoseman, you will have several duties. You will wear an OBA. You will run the attack hose from the fireplug to the scene, and you will keep the hose from getting fouled while fighting the fire. The nozzleman will be able to handle the hose and nozzle better if you keep the weight and tension of the hose off the nozzleman. Your other duties include the relaying of spoken messages and orders between the on-scene leader and the nozzleman. You will assume the duties of the reflash watch when directed to do so. After the fire is out, overhauled, and the space is safe to enter, you will help clean up the compartment. In the event of a collision or flooding, you will be on the shoring detail. There you will reinforce weakened bulkheads, brace warped watertight closures, and patch holes in bulkheads and piping. Shoring, plugging, and patching procedures will be discussed in a later chapter.

PLUGMAN.—As the plugman, you will connect the hose to the fireplug. When directed to do so and while the nozzle is closed, open the fireplug valve to activate the hose. You will need to keep an eye on the hose for loss of water pressure or a hose rupture. In the event of loss of water pressure, make a report to the on-scene leader and secure the plug. In the event of a ruptured fire hose, secure the fireplug, replace the ruptured section of hose, and reactivate the hose as quickly as possible. You may be involved in rigging a jumper hose or in setting up portable pumps.

ELECTRICIAN.—When there is fire or flooding, the repair party electrician will immediately secure electrical power to all compartments that are affected by the casualty. The electrician will report to the on-scene leader when the electrical power is secured. The electrician is responsible for the plugging in, energizing, and de-energizing of the electrical submersible pumps, and any other electrical equipment required. Other members of the fire party may set up the equipment for use; however, they are not to plug in, energize, or de-energize the equipment. Once the casualty is corrected, the electrician will investigate the compartments for electrical damage when directed to do so by the on-scene leader. The electrician will complete repairs to vital electrical systems as soon as possible. Repairs to nonvital electrical systems will be completed as time allows.

ACCESSMAN.—If you are assigned as the accessman you will open doors, hatches, and clear routes as necessary to provide access to the fire when directed by the scene leader. You may use forcible entry equipment such as dogging wrenches, pry bars, bolt cutters, or exothermic torch.

When the hose teams are ready to enter a space, you will open the door, hatch, or scuttle. There are times when you have to clear a route so that the fire party can gain access to the fire. If the space is locked, you will have to decide which forcible-entry tools to use. Once entry has been made, you will stand by to assist where needed until the on-scene leader gives orders to otherwise.

STRETCHER-BEARER.—If you are assigned as a stretcher-bearer, you will be required to take the repair locker first-aid kit, or box, to or near the scene. If medical department personnel are available, you will help them in administering first aid, as required. In the absence of medical department personnel, you will render basic first aid and then assist in the evacuation of injured personnel to battle dressing stations.

FIRE BOUNDARYMEN.— Fire boundarymen proceed directly to the scene when a fire is called away and set primary and secondary fire boundaries as directed by the repair party leader or fire marshal. They secure all doors, hatches, and openings in the boundary of the fire area. They remove or relocate combustibles as required. They cool boundaries with hoses as required. They are normally monitored by and report to the roving investigators.

When acting as setter during a fire, you will need a means to keep the bulkheads and decks cool. A fire hose is normally used if available. Otherwise, you may use a bucket of water and a swab.

In the case of flooding, the first set of watertight transverse bulkheads forward and aft of the flooded compartment is used as the flooding boundaries. While acting as boundary setter during flooding, you will have to keep a watchful eye on the situation. If a closure or seam begins to leak or if the bulkhead starts panting, report it to the on-scene leader.

AFFF STATION OPERATOR.—The aqueous film-forming foam (AFFF) station operator ensures that there is a constant supply of AFFF to the hose team for fire fighting. You must be knowledgeable in the operation of your ship's AFFF system, and you will refill the AFFF tank as necessary. To qualify as an AFFF station operator, you must complete the required PQS.

PHONE TALKER.—If you are assigned as a phone talker, you will report to DCC, the repair locker, or other stations such as the bridge. You will man the phone between your supervisor at your location and other stations. You will receive messages from other phone talkers and relay them to your supervisor.

MESSENGER.—If you are assigned as a messenger, you will be responsible for carrying messages between the scene of the casualty and the repair locker. You will need to be thoroughly familiar with your ship and know how to get from one place to another. You are to stay near the on-scene leader at all times except when you are taking a message to the repair locker. When carrying a message from one point to another, you do so quickly because the leader may have another message ready for you when you return.

REVIEW QUESTIONS

- Q1. The two elements of the damage control organization are the damage control administrative organization and the damage control battle organization.
1. True
 2. False
- Q2. The three objectives of damage control are as follows: (1) Maintain the established material conditions of readiness; (2) train all personnel in all aspects of shipboard damage control; (3) maintain damage control systems and equipment in the best condition possible to ensure survivability.
1. True
 2. False
- Q3. What damage control station receives reports from all others and coordinates their actions?
1. Repair station 1
 2. Fire marshal station
 3. Damage control central
 4. Repair station 4
- Q4. The three responsibilities of the at-sea fire party are as follows: (1) Respond immediately to fire alarms when the ship's repair parties are not manned; (2) extinguish small fires without disrupting other ship operations; (3) control fires until ongoing sensitive critical evolutions can be secured and GQ stations can be manned and ready.
1. True
 2. False

- Q5. What person is in charge of the fire party at the emergency scene and directs the efforts of the fire party to combat the emergency situation?
1. The LCPO
 2. The on-scene leader
 3. The repair party supervisor
 4. The damage control assistant
- Q6. Investigators normally operate in pairs, travel assigned routes, and report conditions to the repair locker.
1. True
 2. False

DAMAGE CONTROL COMMUNICATIONS

Learning Objective: Identify the damage control communication systems and recall the purpose of each.

Damage control communications are vital to a ship's survival during emergency conditions. Each repair party is required to keep DCC informed of the damage status within its area. At the same time, each repair party needs to monitor the reports from all the other repair parties. By monitoring these reports, each repair party will be able to assume the duties of DCC if DCC becomes a battle casualty. If adequate damage control communications are not maintained, the entire damage control organization could break down rapidly and fail to perform its primary responsibilities.

The following communication methods may be used for damage control communications:

1. Sound-powered battle telephone circuits
2. Two-way intercoms
3. Ship's service telephones
4. Ship's general announcing system
5. Integrated voice communications system
6. Voice tubes
7. Messengers
8. WIFCOM (wire-free communication)

As a Damage Controlman, you must be familiar with the communication systems used by the damage control organization on your own ship. Detailed

information on communications can be found in the Ship Information Book for your ship. Various communication methods will be discussed in this chapter. However, the information given here must be regarded as general in nature; it does not apply to all types of ships.

BATTLE TELEPHONE CIRCUITS

The battle telephone circuits are sound-powered circuits. Therefore, they require no outside source of electrical power. The transmitter of a sound-powered telephone transforms sound waves into electrical energy. The receiver transforms this electrical energy back into corresponding sound waves.

Each sound-powered circuit provides communication between certain designated stations. Each circuit consists of telephone jack outlets connected by a line or lines. The connection may be direct or it may be through intermediate equipment such as switchboards, switch boxes, or transfer switches. Some of the vital circuits can be cross-connected with other circuits.

The sound-powered battle telephone system is made up of five types of circuits—primary, auxiliary, supplementary, emergency, and miscellaneous. Sound-powered telephones are also classified according to the type of control as follows:

1. Switchboard-type circuits are controlled from a switchboard at a central location.
2. Switch box-type circuits are controlled from a switch box located at the station exercising operational control over the circuit.
3. String-type circuits have all stations connected in parallel, with no switching provided.

The primary, auxiliary, and supplementary circuits of the ship's battle telephone system are permanently installed. These circuits have outlets located at numerous critical locations throughout the ship. The emergency circuits are string-type circuits, which have permanently installed jack boxes. These "salt-and-pepper lines" are stored on a reel and are strung from a sound-powered jack box to the location of the casualty.

Primary Circuits

The number of primary circuits used within the sound-powered battle telephone system varies among ships. The size and type of your ship normally determines the choice of circuits. The primary circuits discussed here are normally found on large combatant

ships. Not all of these circuits are found on smaller ships. The circuits discussed here include only those that are of particular importance in damage control communications.

CIRCUIT 2JZ is the damage and stability control circuit. This circuit provides vital communication between DCC, engine rooms, repair stations, weapons control center, and other critical stations. Each repair party circuit has an outlet in DCC. These circuits may connect through selector switches, individual jack boxes, or a combination of both. The latter arrangement is preferred because it permits the manning of each circuit by individual phone talkers. When the combination of the selector switch and individual jack boxes is used, the 2JZ circuit is preferably used as an outgoing circuit. Information and orders from DCC are passed to the repair parties. Each individual repair party circuit thus becomes an incoming circuit into DCC. Therefore, the DCA either receives information or orders action to be taken on any message carried over any individual repair party circuit.

When individual repair party circuits come into DCC only through a selector switch or when individual phone talkers are not available, the system must be reversed so that the 2JZ circuit becomes the incoming channel for information. The individual repair party circuits receive only such information or orders from DCC that is intended specifically for them. This may prevent repair party officers from receiving all of the information being sent to other repair parties.

In smaller ships, only a single circuit may be available. In this situation, both incoming and outgoing messages must be handled over it. It is also possible that this circuit will not be primarily or entirely a damage control circuit. The major controlling station must establish control of this circuit. This will ensure an orderly flow of communication. The circuit must never be allowed to get out of control as a result of cross-talk when more than one station assumes priority. The controlling station must be able to clear the circuit immediately and establish priorities for messages whenever the need arises.

CIRCUIT 3JZ provides communication between Repair 1 and DCC, secondary DCC, topside battle dressing station, and each unit patrol station associated with Repair 1.

CIRCUIT 4JZ provides communication between Repair 2 and DCC, secondary DCC, forward battle dressing station, each unit patrol station forward of engineering compartments, fire pump controllers

(except aircraft carriers), and fog-foam injection stations (aircraft carriers only).

CIRCUIT 5JZ provides communication between Repair 3 and DCC, secondary DCC, after battle dressing station, each unit patrol station associated with Repair 3, remote-operated valve control stations aft of the engineering compartments, fire pump controllers (except aircraft carriers), and fog-foam injection stations (aircraft carriers only).

CIRCUIT 6JZ provides communication between Repair 4 and DCC, secondary DCC, amidship battle dressing station, each unit patrol station associated with Repair 4, remote-operated valve control stations amidship, fire pump controllers (except on aircraft carriers), and fog-foam injection stations (aircraft carriers only).

CIRCUIT 7JZ provides communication between Repair 5 and DCC, secondary DCC, engine rooms, firerooms, and each unit patrol station associated with Repair 5.

CIRCUIT 8JZ provides communication between Repair 8 and DCC, secondary DCC, primary and secondary fly control, auxiliary fly control, and each unit patrol station associated with Repair 8.

CIRCUIT 9JZ provides communication between forward Repair 6F and DCC, secondary DCC, gunnery control station, remote sprinkling control station, and each manual sprinkling valve control unit.

CIRCUIT 10JZ provides communication between after Repair 6F and DCC, secondary DCC, gunnery control station, remote sprinkling control stations, and each manual sprinkling valve control unit.

CIRCUIT 12JZ provides communication for the operating orders for fire pump control and the maintenance of firemain pressure in the event of damage. Communication facilities are provided between such stations as DCC, secondary DCC, each conflagration station and hangar deck lighting control station, and the controllers for each fire pump.

CIRCUIT JA is the captain's battle circuit. This circuit provides communication between such stations as the open bridge, pilot house, captain plot, secondary corm, combat information center (CIC), gunnery control stations, anti-aircraft stations, weapons control center, fire control plotting rooms, DCC, secondary DCC, and flag plotting station.

Auxiliary Circuits

Most ships have auxiliary circuits, which duplicate primary circuits. The wiring for the auxiliary circuits is installed as far away as possible from the wiring for the primary circuits. This helps to minimize the danger of both the primary and the auxiliary circuits being placed out of commission at the same time. An X in front of the circuit designator identifies auxiliary sound-powered circuits. Examples of auxiliary circuits are X2JZ and X1JV.

Supplementary Circuits

Supplementary circuits are primary circuits as related to their principal functions. However, when the circuit is also used for damage control communications, the circuit is considered as a supplementary circuit. The following primary circuits are examples of supplementary circuits when they are used for damage control purposes.

CIRCUIT 3JG provides communication between such stations as primary and secondary fly control, flight and hangar deck control stations, each aviation lubricating oil station on the hangar and the gallery deck walkway, flight deck crew shelters, and the lubricating oil pump controllers.

CIRCUIT 4JG provides communication for the supervision of the various elements of the high-capacity aviation gasoline and JP5 system. Communication facilities are provided between such stations as flight deck control station, DCC, secondary DCC, forward and after gasoline pump and control rooms (or gasoline control rooms), and aviation gasoline filling stations.

CIRCUIT 1JV is the maneuvering and docking circuit. This circuit provides communication between the pilot house, open bridge, secondary conn, DCC, engine rooms, emergency stations, steering gear rooms, gyro rooms, standard compass, fog watch forward and aft, and each line handling and transfer-at-sea station.

CIRCUIT 2JV is the engineering circuit for main engines. This circuit provides communication between DCC, each propulsion engine throttle station, auxiliary machinery room, refrigerating machinery room, air-conditioning machinery room, each shaft alley, and Repair 5.

CIRCUIT 3JV is the engineering circuit for boilers. This circuit provides communication between each boiler operating station, each main feed pump and

feed booster pump, smoke watch, DCC, control engine room, auxiliary control engine room, and Repair 5.

CIRCUIT 4JV is the engineering circuit for fuel and stability. This circuit provides communication between DCC, the oil king, controls the engine room, secondary DCC, Repair 5, fuel oil transfer pumps, fuel oil manifolds, and sounding tubes.

CIRCUIT 5JV is an engineering circuit that provides communication between each ship's service power switchgear group, each load center switchboard, each emergency power switchboard, each IC/gyro room, each turret power transfer panel, DCC, secondary DCC, Repair 5, and steering gear room.

CIRCUIT JL is for surface and sky lookouts. The circuit is used primarily to pass reports from lookouts to the captain, gunnery officer, and CIC. Because of the location of the lookouts topside, they can help locate damage caused by high-angle shellfire and bombs.

Emergency Circuits

Emergency circuits are used to provide a means of reestablishing communications once a casualty has occurred to the primary lines. The emergency sound-powered circuit of main concern to damage control personnel is the X40J casualty control communication circuit. The X40J circuit provides portable emergency communications between the main below-deck stations after casualties have occurred to the primary circuits. Portable leads are used for communication between the outlets that are permanently connected to the below-deck stations forming this emergency circuitry. The below-deck stations are usually located in the firerooms, engine rooms, forward and aft IC rooms, emergency generator rooms, DCC, and steering gear rooms. These stations have individual single-gang jack boxes. These boxes are permanently installed and connected to individual four-gang jack boxes above decks. The four-gang outlets are wired in parallel but are not interconnected.

Repair party lockers are equipped with portable jack boxes and two-conductor twisted cable. These are commonly referred to as salt-and-pepper rigs. The salt-and-pepper rigs may be used to connect the individual X40J circuits to operating primary or auxiliary circuits or directly to the bridge.

Miscellaneous Circuits

There are several miscellaneous circuits that provide for the transmission of information of direct interest to damage control stations. These circuits include the flooding alarm (FD), remote draft indicator

(DG), and security alarm (FZ) circuits. Not all of the miscellaneous circuits transmit verbal messages. Some of the circuits are used for alarms that have a definite meaning. You will become acquainted with most of the miscellaneous circuits aboard ship while performing your daily duties.

INTERCOM UNITS

Intercom units (circuit 4MC) provide fast and dependable two-way communication between DCC and each repair party locker. Using extra speakers at various places can provide one-way communication from each repair party locker to its unit patrol stations.

SHIP'S SERVICE TELEPHONES

Many ships use ship's service telephones for damage control communications when there are telephones installed at or near repair party lockers. The ship's service telephones are standard telephones. They may be either rotary-dial or push button. The majority of the compartments aboard ship will have a telephone installed within them. However, do not depend too much on this system. It is not part of a rugged battle system, and it could easily be knocked out of commission early during battle action.

SHIP'S GENERAL ANNOUNCING SYSTEM (1MC CIRCUIT)

The circuit that will affect you the most is the general announcing system circuit identified as 1MC. The 1MC is used to pass information to the ship's crew on a regular basis each day. It is also another means of damage control communication because information can be passed throughout the ship.

The 1MC system should be used only to pass warnings or vital information that affects the entire ship's company. When information does not affect the entire ship and other communication methods are available, the 1MC should NOT be used.

MESSAGE BLANKS

A written message is another means of passing information within the damage control organization. To standardize this method of communication, you should use preprinted message blanks (fig. 2-3). To write out a message word for word takes unnecessary time. Therefore, to expedite message preparation, you should use damage control standard abbreviations (fig. 2-4) and damage control standard symbology (fig. 2-5). A detailed listing of damage control standard symbology is provided in Appendix III of this NRTC.

	TIME _____	
	FROM _____	TO _____
	_____ R2 _____	
	_____ R3 _____	
	_____ R5 _____	
	_____ DCC _____	
	SCENE LEADER _____	
	BRIDGE _____	
	INVESTIGATOR _____	
	LOCATION _____	
	FRAME _____	
	REMARKS _____	
	OVHD/FWD	
	P O R T	S T B D
	DECK/AFT	

DCI0203

Figure 2-3. Preprinted message blank.

- | | |
|----------|--------------------------------------|
| AD | Armored Door |
| AH | Armored Scuttle |
| AQUES | Armored Quick-Acting Escape |
| AP | Air Ports |
| ATC | Air Test Cap |
| BP | Battle Port |
| CP | Casualty Power |
| CPPT | Casualty Power Passing Tube |
| COV | Cut Out Valve |
| DDV | Deck Drain Valve |
| DS () * | Deck Socket (List: i.e. Reach Rod) * |
| DV | Drain Valve |
| FLWV | Flushing Water Valve |
| FMCOV | Firemain Cutout Valve |
| FMRV | Firemain Riser Valve |
| FMV | Firemain Valve |
| FPL | Fire Plug |
| FTD | Fire Tight Door |
| FWV | Fresh Water Valve |
| FZD | Fire Zone Door |
| NTD | Non-Tight Door |
| OBDV | Overboard Drain Valve |
| PS | Passing Scuttle |
| QAWTD | Quick-Acting Watertight Door |
| WTH | Watertight Hatch |

Figure 2-4. Sample list of standard abbreviations for damage control fittings.

<p>CASUALTY POWER</p> <p> Casualty Power Ordered</p> <p> Casualty Power Riggged</p> <p> Casualty Power Energized</p>	<p>PANTING</p> <p> Panting Bulkhead (Location Bulkhead)</p> <p> Panting Bulkhead Shoring in Progress (Type of Shoring)</p> <p> Shoring Complete</p> <p> Shoring Watch Set</p>	<p>SPLIT SEAM OR CRACK</p> <p> Split Seam or Crack Reported (Size in IN or FT) (use of " or ' not allowed) (Pinpoint the Damage)</p> <p> Split Seam or Crack Repair in Progress</p> <p> Split Seam or Crack Repairs Complete</p>
<p>FIXED HALON SYSTEM</p> <p> Halon System Activated in Time</p> <p> Halon System Released in Time</p> <p> Halon System Effective</p>	<p>TOXIC GAS</p> <p> Toxic gas or HAZMAT Spill Reported</p> <p> Toxic gas or HAZMAT Spill contained</p> <p> Toxic gas or HAZMAT Spill removed</p> <p> Oxygen Test</p> <p> Explosive Gas Test</p> <p> Toxic Gas Tests</p>	<p>MECHANICAL</p> <p> Mechanical Isolation Ordered</p> <p> Mechanical Isolation Complete</p> <p> Mechanical Isolation Restored</p>

DCI0205

Figure 2-5. Samples of Navy standard damage control symbology.

MESSENGER

The messenger's responsibility is to relay orders and information. These messages will normally be relayed between the scene, the repair locker, and, if in port, the quarterdeck. Written messages are always more reliable than oral messages. However, the messenger should be trained to relay oral messages without errors.

MAINTAINING COMMUNICATIONS

If you are a member of a repair party, you should understand and be able to use all of the available methods of communication. This includes the ability to switch from normal to alternative methods when necessary. Damage control communication drills should be held frequently; some circuits should actually be shorted without warning to test your ability to maintain communications during an emergency situation.

The succession of command for repair stations must be well established if you are to maintain communications control. The proper succession should be put into effect immediately if DCC is destroyed or otherwise put out of commission. The sequence of command for each ship is given in the ship's Repair Party Manual, and posted in each repair locker.

Drills are useful in establishing the chain of succession. DCC may pretend to be out of commission by not answering up. This will provide a test of the organization and the procedures of the repair party station designated to assume command. The repair party taking control should notify all other repair parties, the commanding officer, and main engine control that it has control. This procedure should be followed until all repair parties have succeeded to control and have exercised their control properly. DCC can always regain control by saying "Damage control central taking control," and receiving the proper acknowledgments.

This drill should emphasize the necessity for all repair parties to maintain a record of all information and orders issued by DCC. When a repair party succeeds to DCC, it must know what casualties the other stations are handling.

Communication difficulties become apparent when there are numerous hits or other casualties throughout the ship. Under these conditions, all repair parties usually try to send information to DCC at the same time. The communication circuits can become

overloaded and jammed unless proper control is maintained. A priority system for different types of messages should be established. All repair party personnel should understand the priority of messages. Messages containing vital information and messages that require immediate action by some other damage control unit should be sent first. Then other important messages or reports should be sent. Routine or relatively unimportant messages should not be transmitted until the lines are free.

TRANSMITTING INFORMATION

Repair party personnel at the scene of the damage are obviously in the best position to provide accurate information on the casualty. However, the entire damage control organization can break down if repair party personnel do not know how to transmit information correctly.

The initial report from a repair party should contain the location and the nature of the damage. Subsequent reports should contain information of the extent of the damage, the measures being taken to correct the damage, and assistance required (if any). These general guidelines for transmitting information from repair parties to DCC apply to both oral reports and written messages.

As an example, consider the following series of reports. These reports concern an exercise for a fire in a living compartment resulting from a bomb or shell hit. The ship is at GQ. These reports are set up as message blank reports. However, the same information would be required if you were making oral reports over a damage control communication circuit.

The first message blank (fig. 2-6) is from Repair 3 to DCC. The message is written WTD 2-130-2 H/J. This means that watertight door 2-130-2 is hot and jammed.

The second report from Repair 3 to DCC is IN PROGRESS, as shown in figure 2-7. This means that corrective action is being taken to cool and unjam the watertight door so it can be opened.

The third report from Repair 3 to DCC is WTD 2-130-2 C/U (cooled and unjammed), as shown in figure 2-8.

The fourth report from Repair 3 to DCC is CLASS ALFA FIRE, COMPARTMENT 2-130-2-L, as shown in figure 2-9.

The fifth report from Repair 3 to DCC is CLASS ALFA FIRE CONTAINED, COMPARTMENT 2-130-2-L, as shown in figure 2-10.

H/J	TIME <u>0940</u>	TO
	FROM	R2
	XXX	R3
		R5
		DCC
		OSL
		BRIDGE
/	COMP'T	<u>2 - 130 - 2 - L</u>
	FRAME	<u>130</u>
△	REMARKS:	
		WTD 2 - 130 - 2
△	OVHD/FWD	
	P O R T	S T B D
DECK/AFT		
△		

DCI0206

Figure 2-6. Sample message of the first report.

	TIME <u>0942</u>	TO
	FROM	R2
	XXX	R3
		R5
		DCC
		OSL
		BRIDGE
/	COMP'T	<u>2 - 130 - 2 - L</u>
	FRAME	<u>130</u>
△	REMARKS:	
		WTD 2 - 130 - 2
△	OVHD/FWD	
	P O R T	S T B D
DECK/AFT		
△		

DCI0208

Figure 2-8. Sample message of the third report.

	TIME <u>0941</u>	TO
	FROM	R2
	XXX	R3
		R5
		DCC
		OSL
		BRIDGE
/	COMP'T	<u>2 - 130 - 2 - L</u>
	FRAME	<u>130</u>
△	REMARKS:	
		WTD 2 - 130 - 2
△	OVHD/FWD	
	P O R T	S T B D
DECK/AFT		
△		

DCI0207

Figure 2-7. Sample message of the second report.

A	TIME <u>0943</u>	TO
	FROM	R2
	XXX	R3
		R5
		DCC
		OSL
		BRIDGE
/	COMP'T	<u>2 - 130 - 2 - L</u>
	FRAME	
△	REMARKS:	
△	OVHD/FWD	
	P O R T	S T B D
DECK/AFT		
△		

DCI0209

Figure 2-9. Sample message of the fourth report.

	TIME <u>0958</u>	
	FROM	TO
	<u>XXX</u>	<u>R2</u>
		<u>R3</u>
		<u>R5</u>
		<u>DCC</u> <u>XXX</u>
		<u>OSL</u>
		<u>BRIDGE</u>
	COMPT	<u>2-130-2-L</u>
	FRAME	
	REMARKS:	
	OVHD/FWD	
	PORT	STBD
	DECK/AFT	

Figure 2-10. Sample message of the fifth report.

	TIME <u>1012</u>	
	FROM	TO
	<u>XXX</u>	<u>R2</u>
		<u>R3</u>
		<u>R5</u>
		<u>DCC</u> <u>XXX</u>
		<u>OSL</u>
		<u>BRIDGE</u>
	COMPT	<u>2-130-2-L</u>
	FRAME	
	REMARKS:	
	FN JONES	
	OVHD/FWD	
	PORT	STBD
	DECK/AFT	

Figure 2-12. Sample message of the seventh report.

The sixth report from Repair 3 to DCC is CLASS ALFA FIRE OUT, COMPARTMENT 2-130-2-L, as shown in figure 2-11.

The seventh report from Repair 3 to DCC is REFLASH WATCH SET BY FN JONES, COMPARTMENT 2-130-2-L, as shown in figure 2-12.

The eighth report (fig. 2-13) from Repair 3 to DCC is that compartment atmospheric tests show sufficient oxygen and no explosive gases present in COMPARTMENT 2-130-2-L. There must be sufficient oxygen and no explosive or toxic gases present before you may remove your OBA.

Additional reports may be required, such as personnel casualties, electrical damage, investigation of surrounding areas, desmoking, dewatering, ruptured firemain, shoring, and compartment overhaul. In all reports, pinpoint the damage as accurately as possible. This gives DCC a clearer picture of the damage. For example, don't just say, HOLE IN COMPARTMENT 2-107-1-L. Instead, say COMPARTMENT 2-107-1-L, FRAME 112, 8-INCH HOLE, STARBOARD SIDE, 4 FEET OFF DECK, as shown in figure 2-14. Specific messages like this give DCC an exact picture of the damage.

	TIME <u>1011</u>	
	FROM	TO
	<u>XXX</u>	<u>R2</u>
		<u>R3</u>
		<u>R5</u>
		<u>DCC</u> <u>XXX</u>
		<u>OSL</u>
		<u>BRIDGE</u>
	COMPT	<u>2-130-2-L</u>
	FRAME	
	REMARKS:	
	OVHD/FWD	
	PORT	STBD
	DECK/AFT	

Figure 2-11. Sample message of the sixth report.

	TIME 1016	TO
	FROM	R2
	XXX	R3
		R5
		DCC
		OSL
		BRIDGE
	COMPT	2-100-2-L
	FRAME	
	REMARKS:	
	OVHD/FWD	
	PORT	STBD
	DECK/AFT	

DCI0213

Figure 2-13. Sample message of the eighth report.

REVIEW QUESTIONS

- Q7. Each repair party will be able to assume the duties of DCC if DCC becomes a battle casualty by monitoring ALL casualty reports.
- True
 - False
- Q8. Battle telephone systems include primary, auxiliary, telemetric, kinetic, and miscellaneous.
- True
 - False
- Q9. Message blanks are the standardized method of written communication used to relay damage control information.
- True
 - False

DIAGRAMS AND BLUEPRINTS

Learning Objective: Recall the purpose and use of damage control diagrams and blueprints.

As a Damage Controlman you will often use various shipboard diagrams and blueprints. The ship's plans (blueprints) and isometric damage control diagrams are the drawings that you will use most. To better understand the ship's plans and blueprints, you should complete the *NRTC Blueprint Reading and Sketching*, NAVEDTRA 12014.

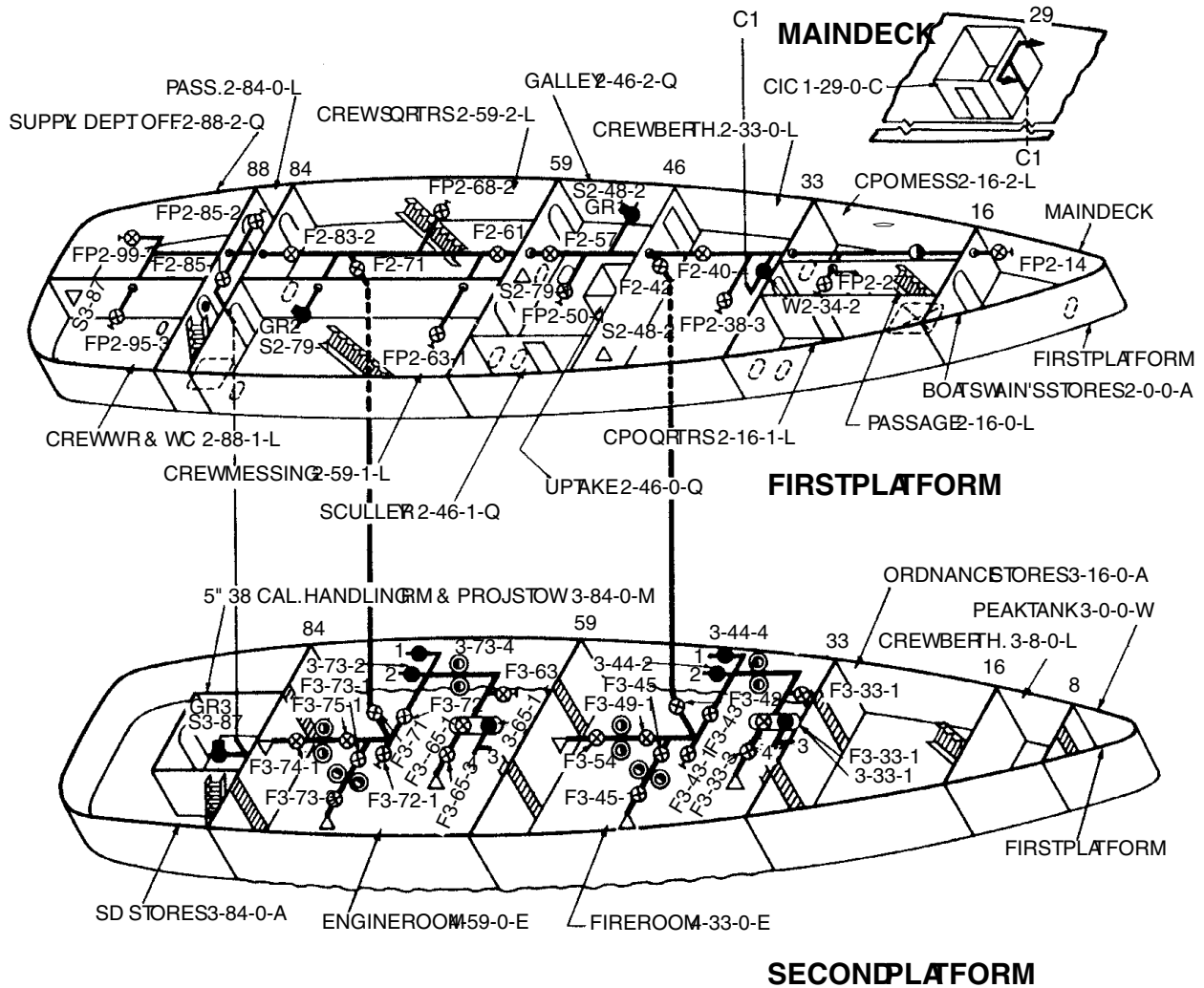
In addition to knowing how to read drawings, you must also know how to locate applicable drawings. The onboard drawings, which are sometimes referred to as ship's plans or ship's blueprints, are listed in the Ship's Drawing Index (SDI). The SDI is kept in the engineering department office (log room).

The SDI lists all working drawings that have a NAVSHIPS or NAVSEA drawing number, all manufacturer's drawings, all equipment drawing lists, and all assembly drawings that list detail drawings. Drawings that are actually kept onboard are identified in the SDI by an asterisk (*). Drawings are listed in numerical order in the SDI.

	TIME 1025	TO
	FROM	R2
	XXX	R3
		R5
		DCC
		OSL
		BRIDGE
	COMPT	2-107-1-L
	FRAME	112
	REMARKS:	
	OVHD/FWD	
	PORT	STBD
	DECK/AFT	

DCI0214

Figure 2-14. Sample message to report the size and location of a hole.



FIRE MAIN, SPRINKLER AND WASHDOWN SYSTEMS

KEY

- F FIRE MAIN
- S SPRINKLER } SEE NOTE
- W WASHDOWN } SEE NOTE
- VALVE AND CHANGE OF SYSTEM
- ⊗ VALVE
- ⊗ VALVE - REMOTELY OPERATED
- VALVE - REMOTELY OPERATED AND CHANGE OF SYSTEM
- ⊕ CHECK VALVE - SHADED PORTION IS OUTLET
- ⊗ HOSE VALVE, FIRE PLUG OR JUMPER CONN
- ⊗ VALVE MANIFOLD
- ▽ REMOTE CONTROL STATION - FIG. INDICATES VALVE OPERATED
- ← WASHDOWN SPRAY NOZZLE - FLOW IS IN DIRECTION OF APEX
- ⊕ PUMP - SHADED PORTION IS OUTLET
- △ SEA CHEST
- ◇ BULKHEAD PENETRATION

- 1-OVERBOARD DISCHARGE
- 2-TANK BALLASTING
- 3-FO TANK DRAIN
- 4-DRAINAGE SUCTION

NOTES

DOTTED LINES INDICATE BOUNDARIES, PIPING AND FITTINGS HIDDEN FROM VIEW

HEAVY LINES INDICATE WATERTIGHT OR OILTIGHT BOUNDARIES

THIN LINES INDICATE AIRTIGHT FLAMETIGHT OR NON-TIGHT BOUNDARIES

THE LETTER PRECEDING THE VALVE OR FITTING NUMBER REFERS TO THE SYSTEM AND IS NOT ACTUALLY PART OF THE VALVE OR FITTING NUMBER EXCEPT FP FOR FIRE PLUG

Figure 2-15. A typical isometric damage control diagram.

DCf0215

The onboard drawings are filed in numerical sequence. On most ships, they are kept in file cabinets in the log room. However, they may be filed in a technical library or the microfilm library on aircraft carriers, tenders, and repair ships. Although you may use blueprints and drawings for damage control purposes, you will primarily use the isometric damage control diagrams, as shown in figure 2-15. These diagrams are three-dimensional. They are developed and provided under strict requirements set forth by NAVSEA.

When NAVSEA furnishes a group of ships their diagrams, the ship's force must verify the diagrams for accuracy. Corrections should be made to show the actual installation within the ship. To read these diagrams correctly, you need to recognize the standard symbols used. A few of these symbols are shown in figure 2-16. Each diagram will have a key, which will identify the symbols used on that diagram. As a rule, the different systems are drawn in different colors. This makes it easier to distinguish one system from another.

Isometric damage control diagrams that are not kept in the damage control books are usually sealed in plastic. They are stowed in special cabinets and are

located in DCC and in the various repair party lockers. During casualties, these drawings may be used to plot casualties and provide an overview for their coordination.

On the isometric damage control diagrams, each deck or platform is shown at a separate level. Compartments that are not intersected by a particular deck are not shown on the diagram for that deck. Instead, they are drawn as part of the deck from which they extend. Heavy lines indicate watertight and oiltight boundaries. Lighter lines indicate airtight, fumetight, and nontight boundaries.

The isometric damage control diagrams show piping systems as close as possible to their actual shipboard locations. All piping and fittings that are actually contained within a compartment are shown in that compartment on the diagram. However, the precise location may be shifted a little to make the diagram clear and readable. Dotted lines and cross-hatchings indicate hidden boundaries, piping, and valves. Usually the isometric damage control diagrams are not drawn to scale.

SYMBOL	SYMBOL KEY	SYMBOL	SYMBOL KEY
	FOG FOAM PROPORTIONER PUMP AND CONTROL		QUICKACTING WATERTIGHT DOOR
	HOSE STOP OR FIRE PLUG		DECK DRAIN VALVE
	REMOTE CONTROL STATION (FIGURES INDICATE VALVE NUMBER)		DECK DRAIN
	REMOTE CONTROL STATION (FIGURES INDICATE VALVE NUMBER)		EDUCATOR (JET PUMP) FLOW IN DIRECTION OF FLARE
	VENTILATION CLOSURE (POSITION INDICATES DIRECTION OF FLOW)		OVERBOARD CONNECTOR FOR SUBMERSIBLE PUMP
	VALVE MANIFOLD		STOP CHECK VALVE
	BLOWER VENTILATION SYSTEM		STOP-LIFT CHECK VALVE
	REMOTE OPERATED CLOSURE FITTING		RELIEF VALVE OR SPRING LOADED CHECK VALVE
	BILGE SUCTION		HATCH
	SEA CHEST		MANHOLE
	BULKHEAD PENETRATION		QUICKACTING SCUTTLE
	WATERTIGHT DOOR		REMOTE CONTROL VALVE

DCf0216

Figure 2-16. Some symbols used on damage control diagrams.

REVIEW QUESTIONS

- Q10. What types of drawings does a Damage Controlman use most often?
1. Working drawings and site plans
 2. Structural and architectural drawings
 3. Rough sketches and geometric drawings
 4. Blueprints and isometric damage control diagrams
- Q11. Damage control central and the various repair lockers are locations that may use isometric damage control diagrams during a casualty.
1. True
 2. False
- Q12. On an isometric damage control diagram, what types of information are indicated by dotted lines and cross-hatchings?
1. Telephone lines and working areas
 2. Hidden boundaries, piping, and valves
 3. Fire hose lines and hatch openings
 4. Water lines and watertight doors

SUMMARY

This chapter has covered the organization of the damage control program aboard ship and some sources of information that cover damage control. You learned about the responsibilities of the various repair parties and the personnel within those parties. You studied the use of blueprints and diagrams in damage control. Also, you have learned about various communications systems aboard ship and how they work in damage control.

REVIEW ANSWERS

- A1. The two elements of the damage control organization are the damage control administrative organization and the damage control battle organization. **(1) True**
- A2. The three objectives of damage control are as follows: (1) Maintain the established material conditions of readiness; (2) train all personnel in all aspects of shipboard damage control; (3) maintain damage control systems and equipment in the best condition possible to ensure survivability. **(1) True**
- A3. What damage control station receives reports from all others and coordinates their actions? **(3) Damage control central**
- A4. The three responsibilities of the at-sea fire party are as follows: (1) Respond immediately to fire alarms when the ship's repair parties are not manned; (2) extinguish small fires without disrupting other ship operations; (3) control fires until ongoing sensitive critical evolutions can be secured and GQ stations can be manned and ready. **(1) True**
- A5. What person is in charge of the fire party at the emergency scene and directs the efforts of the fire party to combat the emergency situation? **(2) The on-scene leader**
- A6. Investigators normally operate in pairs, travel assigned routes, and report conditions to the repair locker. **(1) True**
- A7. By monitoring the reports of other repair stations, each repair party will be able to assume the duties of DCC if DCC becomes a battle casualty. **(1) True**
- A8. The five types of sound-powered battle telephone systems include primary, auxiliary, telemetric, kinetic, and miscellaneous. **(2) False**
- A9. Message blanks are the standardized method of written communication used to relay damage control information. **(1) True**
- A10. What types of drawings does a Damage Controlman use most often? **(4) Blueprints and isometric damage control diagrams**
- A11. Damage control central and the various repair lockers are locations that may use isometric damage control diagrams during a casualty. **(1) True**
- A12. On an isometric damage control diagram, what types of information are indicated by dotted lines and cross-hatchings? **(2) Hidden boundaries, piping, and valves**

