

## DAMAGE CONTROL COMMUNICATIONS

Although training personnel in interior communications may appear to be simple, it is one of the troublesome phases of damage control training. It is doubtful if any Damage Control Officer is ever fully satisfied with his communications. It is imperative therefore, to train personnel constantly and thoroughly so that the organization can handle all communications quickly, correctly and intelligently.

In view of the enormous number of ship types, it is impracticable to cover in detail all types of ships in describing communication systems. The preceding diagram covers only the I. C. systems found in large ships. A general knowledge of these systems, however, will promote better understanding of the other systems in use on smaller ships. The training features of this chapter apply to all types of ships. Thorough understanding and correct application of these principles promotes good training in damage control communications.

### COMMUNICATION SYSTEMS

The normal means of damage control communications aboard large ships are:

1. Battle telephone circuits (sound-powered).
2. Inter-station two way systems (Intercoms).
3. Ship's service telephones.
4. Ship's loud speaker system (General Announcing).
5. Voice tubes (where installed).
6. Messengers.

### BATTLE TELEPHONE CIRCUITS

The battle telephone circuits are sound powered circuits. They require no outside source of electrical power. The transmitter of the sound powered telephone is an instrument designed to transform sound waves into electric energy. The receivers are instruments usually at a distant point capable of reconverting this electric energy into similar sound waves. The action of these instruments is as follows:

Sound waves set the diaphragm of the transmitter in motion and cause an armature to vibrate in a field of permanent magnets. This vibration generates a fluctuating current in the coils surrounding the magnets and in the line leading to the receiver. At the receiver the process is reversed; the fluctuating electric current varies the field of the permanent magnets causing vibration of the armature and the diaphragm. The motion of the diaphragm then sets up sound waves which are reproductions of those originally striking the transmitter.

Outlets for sound powered telephones are located at numerous critical locations aboard ship. The wiring and cabling interconnecting these outlets in various combinations constitute the sound powered Battle Telephone System. The normal damage control sound powered circuits are:

<u>Circuit</u>	<u>Name</u>	<u>Function</u>
2JZ	Damage & Stability Control	Provides communication between the Damage Control Officer and: All Repair Parties, Pump Rooms, Draft Gauges, Diesel Fire Pumps, and, in carriers only. Primary & Auxiliary Fly Control Stations, Hangar Control & Conflagration Stations.
3JZ	Upper Deck Repair	Provides communication between the Officer at Repair I & each Repair I Patrol party, each battle dressing station in superstructure and, in carriers, each hangar deck patrol party & Repair VII.
4JZ	Forward Repair	Provides communication between the Officer at Repair II and each Repair II patrol party, each forward battle dressing station, each remote valve control station forward of engineering spaces.
5JZ	After Repair	Provides communication between the Officer at Repair III and each Repair III patrol party, each after battle dressing station each remote valve control station aft of the engineering spaces.
6JZ	Amidship Repair	Provides communication between the Officer at Repair IV & each Repair IV patrol party, each amidship battle dressing station & each remote fire & flood valve control station amidship.
7JZ	Engineer's Repair	Provides communication between Officer at Repair V & each remote valve operating station (steam & fuel oil) each engine room, each fire room, each auxiliary engine room & each amidship battle dressing station.
8JZ	Flight Deck Repair (Carriers only)	Provides communication between the Officer at Repair VIII & each flight deck patrol party, each topside battle dressing station.



9JZ	(New designation of X5J)	
3JG	Aircraft Service	These circuits are found on carriers only & are primarily for use by the air division for gassing planes, bomb & torpedo handling and other services. In the event of a casualty they are to be used for disposing of gasoline, bombs and torpedoes to prevent further damage.
5JG	Conflagration Control	
7JG	Aviation Ordnance	
JA	Captain's Battle Circuit	Provides communication between the Captain & the heads of the various departments at their battle stations including the Damage Control Officer.
1JV	Maneuvering Docking and Catapult Control	These circuits are provided for the proper operation of the propulsion & auxiliary power plants but may be used by the engineering repair parties in the event of an emergency.
2JV	Engineer's Circuit (Engines)	
3JV	Engineer's Circuit (Boilers)	
4JV	Engineer's Circuit (Fuel & Stability)	
5JV	Engineer's Circuit (Electrical)	
JL	Lookouts (Surface & Sky)	This circuit is primarily installed for passing reports of lookouts to the Captain, Gunnery Officer & C.I.C. Due to the disposition of the lookouts top side they can aid in locating the damage due to high angle, shell fire, & bombs.
9JZ	Magazine Sprinkling & Ordnance Repair	Provides communication between the officers at Repair VI forward, Repair VI Aft, Sprinkling Control forward, Sprinkling Control Aft, each 5 <sup>th</sup> powder handling room, each turret powder handling room and damage control station.

EMERGENCY  
COMMUNICATION

Emergency sound powered telephone headsets and portable wire is provided each repair party (see group, S88 of Allowance List). Sound powered phones with long extensions on reels should be made up, stowed in strategic locations, and kept ready for use in emergencies. This precautionary measure has proven to be of great value in many damaged ships to date.

On vessels of 200 feet or more in length, three sound powered telephone headsets and cable are provided for ship control jury rig communication (see group S65-1 of Allowance List) between the bridge, control engine room and steering engine room. The wire provided is a special twisted pair, tough, portable wire that may be passed through watertight doors and hatches without destroying watertight integrity. It is recommended that the jury rig telephones and wires be stowed as directed by the Damage Control Officer and be made part of the electrician's mates' repair gear. The jury rig equipment can be supplemented with equipment from the primary telephone circuits in event of an emergency. It is considered bad practice to string the jury rig before a casualty has occurred. In all probability the cause of the casualty would carry away the jury rig as well as the primary communicator.

PRIMARY  
COMMUNICATIONS  
CIRCUITS

On most ships the sound powered phone circuits are the primary method of communication used by the damage control organization. Their independence from all shipboard sources of power is the greatest advantage of the sound powered phone circuit over all other forms of communications.

The 2JZ sound powered circuit is common to the damage control station and all repair parties. The 3, 4, 5, 6 and even 7JZ circuits are individual repair party circuits, connecting each repair party main station with its auxiliary station and patrol areas. Each of these repair party circuits has an outlet in the Damage Control Station, either through a selector switch, individual jack boxes, or both. The latter is preferable, and permits the manning of each circuit by individual talkers in this station.

INCOMING  
AND  
OUTGOING  
CIRCUITS

Where this is done, the 2JZ circuit is preferably used solely as an outgoing circuit from the Damage Control Station, carrying information and orders from the Damage Control Officer to the repair parties. Each individual repair party circuit thus becomes an incoming circuit into the Damage Control Station. This automatically makes the Damage Control Officer, through any of his talkers, either an "information or an addressee" on any message carried over any individual repair party circuit.

Where individual repair party circuits come into the Damage Control Station only through a selector switch, or where individual talkers are not available, this system must be reversed, and the 2JZ circuit becomes the incoming channel for information. The individual repair party circuits receive only such information or orders from the Damage Control Officer as are meant specifically for them. This may prevent the repair party officers, to a large degree, from receiving complete information as to what directions are being sent to repair parties other than their own.

In smaller ships (DD, DE and PF) where only a single circuit may be available, both incoming and outgoing messages must be handled over it.



It is also highly probable that this circuit will not be primarily, or entirely, a damage control circuit. It is imperative, therefore, that control of this circuit be established by the major controlling station so that an orderly flow of communication may be obtained. The circuit must never be allowed to get out of control as a result of "cross-talk" caused by more than one station assuming that it has the priority message. The controlling station must be able to clear the circuit immediately and establish a priority for messages, whenever the need arises.

Wherever possible, one circuit should NOT be used for both an outgoing and an incoming line because the resulting confusion will greatly increase the difficulties of getting information through correctly and speedily. Where only one circuit is available strict control over that circuit must be maintained.

AUXILIARY  
SOUND  
POWER  
CIRCUITS

Most ships have auxiliary circuits which are for all practical purposes, duplicates of the primary circuits. These circuits serve the same stations served by vital primary circuits but in the installation of the auxiliary circuits great care is taken to install their wiring as remote as possible from that of the primary circuits. The need for this feature lies in the possibility that the wiring of the primary circuits may be ruptured and an alternate system must be available.

SUPPLEMENTARY  
CIRCUITS

There is a third sound powered circuit in most ships which is installed in stations not especially vital to ship operation. These are known as Supplementary circuits. They are installed in such stations as between the upper and lower handling rooms of 5" mounts, turret stations, topside radio, radar, and direction finder stations. Although these circuits are not normally used for damage control purposes, their existence in stations or sections of the ship not served by damage control circuits must not be forgotten as they may be tied in to primary circuits to extend communications to a remote section in emergencies.

INTER-  
COMMUNICATION  
SYSTEMS

Systems of recent design employ the intercommunicating units on the Damage Control Announcing System (Circuit 4MC). These units provide a dependable and fast two way transmission of damage control orders and information between the damage control station and each repair station as well as provide additional one way communication from each repair station to each repair party area served by that station by utilizing satellite reproducers.

However, unless a general broadcast system to all repair parties is used, the procedure requiring each Repair Party to keep a log of all messages emanating from Control cannot be employed, and the chain of control for damage may be broken. "Chain of control for damage," will be discussed in detail later. It must also be kept in mind that such systems are electrically powered circuits and subject to failure if all power is lost. This is not an uncommon casualty and there are many recorded cases of power being lost as a result of damage,



particularly on smaller vessels where the auxiliary power circuits have sometimes failed at the same time as main power circuits.

SHIP'S  
SERVICE  
PHONES

Ship's service telephones are available for use where they are installed at or near Repair Stations. Too much reliance should not be placed on them because they are not part of a rugged battle system and may go out of commission early in action. They are available for training purposes, however. If sound power, intercommunication and ship's service telephones should fail, alternative methods by portable telephone and messenger must be organized.

SHIP'S  
GENERAL  
ANNOUNCING  
SYSTEM

The ship's general announcing system is a means of communication, but so many stations other than damage control are effected that it is not desirable to use it unless all other methods fail. However, it should be kept in mind as a possible means of communication.

MESSENGERS

Repair party personnel should be trained as messengers for relaying orders and information. There have been cases where all means of communication have failed as a result of shock, or damage, and messengers had to be employed. The Condition I damage control organization should provide for messengers. Possible sources in addition to unemployed Repair Party personnel are gun crews out of action and the like. A written message carried by messenger is always more reliable than an oral message to assure that messages get through without error. However, messengers should be trained to carry oral orders and addressees should give a check-back from the destination as to the message received there. Messengers may be employed in "chains" to pass certain words. It is an interesting and instructive drill to line up about ten or fifteen people and give the first one in line an oral message to be relayed down the line. A check with the last man in the chain yields results which are sometimes astounding. The message that he receives frequently bears little resemblance to the message originated.

TRAINING  
OF  
TALKERS

Good telephones with poor talkers are often worse than no telephones at all. Impediments of speech or hearing should automatically disqualify a man as a talker. Personnel with distorted accents or drawls have a difficult time making themselves understood over the phone. Look for all these defects in choosing talkers. In training talkers, make full use of the "Telephone Talker's Manual" - NavPers 14005.

Several talkers should be trained for each station. This will avoid the difficulty of getting phones manned at General Quarters by virtue of the fact that "the talker has not yet arrived to man his phones."



Phones should be manned promptly at General Quarters by personnel first arriving on the station. Until communications are established, the damage control set-up cannot function in an orderly manner.

TALKER  
PERSONNEL

Yeoman and storekeepers have frequently been used as talkers. By virtue of their normal duties aboard ship they spend much of their time talking on telephones, and in many cases are capable of taking shorthand notes. Shorthand tends to expedite the transmission of accurate messages and should not be overlooked as a desirable achievement in a talker. Again it may be that yeomen and storekeepers have normal General Quarters stations with the Gunnery and Damage Control Departments. Not being trained in gunnery or damage control, they may be assigned to "fill in" as telephone talkers. Regardless of rating, the telephone talker must be able to speak clearly and receive messages intelligently despite outside noises and distractions.

DRILLING  
THE  
TALKER

During cruising conditions at sea a telephone watch is normally not an exciting watch. There is a tendency for the talker to become lethargic and careless. He must be kept alert by frequent instruction and drill.

A good training drill is to parallel circuits and have excerpts from damage control publications read to all talkers during each watch. The messages should be read through once, without repeating, at a normal writing rate. Talkers should be required to write the message and read it back to Damage Control Headquarters. This trains talkers both at Control and at the Repair Parties. The drill should be made competitive and standings of the various Repair Parties should be posted. No man wants to stand last in any type of competition; thus a stimulus is provided for improving relative standing. Reading from damage control publications has the added advantage of acquainting the talker with damage control nomenclature, systems and subject matter.

The message must be transmitted slowly enough for the talker at the destination to write the message. A good training procedure is for the transmitting talker to write the message as he reads. It will be found that the rate of transmission is otherwise faster than the average person can write. There is no advantage in a fast transmission if at the end of the transmission the receiving talker has only partially received the message and says "repeat". Considerable time is lost in repeating a message, with a resultant delay in the time to take action. Training in the speed of transmission must therefore take place in order to regulate the rate of transmitting orders. The aim of damage control communications is to transmit orders and information expeditiously and correctly.

RULES FOR  
TALKERS

Some general rules for telephone talkers are given below:

1. Be alert. Pay attention to what is said over your phone. Keep a written log of the activities of other stations on your circuit in order that your station can properly assume control for damage, and know what all other stations are doing. Pay attention to the officer or petty officer in charge of your station.
2. Repeat all messages word for word. Don't paraphrase a message. Changing of a single word can often change the meaning of an entire message.
3. Do not indulge in idle conversation on the 'phone. Do not play, skylark, or make funny noises. Don't smoke. You can't talk and smoke at the same time.
4. Speak into the transmitter in a clear tone of voice. Do not shout or whisper into the 'phone. If you shout the result will be mushy and will result in slurred noises. A whisper cannot be heard, enunciate words distinctly. Pronounce every syllable.
5. Hold the button down when talking. Don't touch it when listening. (This applies only to the head set. The button must be held down for speaking and listening when the hand set is used).
6. Hold the transmitter about  $\frac{1}{2}$  inch from the mouth when talking. Other distances are not as effective.
7. An ear piece may be used as a transmitter in the event something goes wrong with the transmitter. In this case the button is not used.
8. Don't use alphabetical letters in referring to anything. It is apt to lead to confusion and error which may result in a considerable loss of time and prevent action which might have been taken if the message had been received correctly. For instance, the expression B-101 could be mistaken for C-101 in referring to a compartment. The expression BAKER-101 could not be mistaken for CHARLIE-101.
9. Test your circuit regularly. A line may go dead as a result of damage or faulty equipment. Unless you test regularly you will be unaware of this fact and you may lose out on an important message. The talkers at the repair stations may restore a dead circuit by opening the witchbox and opening the switch that ties in the faulty line to the telephone switchbox.
10. Never secure from your station until released by the petty officer or officer-in-charge of your station.



11. Remember that all talkers are part of the Repair Party. You must be familiar with the duties of your Repair Party. Familiarity with Damage Control phraseology, nomenclature, damage control systems and the duties of the Repair Party will enable you to perform your duties more efficiently.
12. Strive to be the best talker on your circuit. Confidence in the ability of a talker is reflected in the efficiency of a Repair Station.

CARE OF THE  
TELEPHONES

Since telephones are in most ships the primary means of communication while underway during drills, during battle, or whenever the ship is engaged in any activity and because telephone communication is so essential to the operation of the ship, personnel handling phones must carefully observe the following instructions:

(a) When in use:

- (1) Keep the cord free from turns and kinks.
- (2) See that plug is straight in the jack box, and that it is tight.
- (3) Be careful of the cord. Don't permit any one to walk on it and see that it doesn't become fouled. Don't put a strain on it.
- (4) Adjust ear pieces to fit the head.

(b) Securing the phones:

- (1) Remove the head band and ear pieces from the head.
- (2) Place the metal head band over the metal arm from the breast plate to the transmitter.
- (3) Unhook the neck band and hand the entire phone to another talker if being relieved. If securing the phone, unplug the cord as you would a small line.
- (4) Place the coiled cord over the arm from the chest plate to the transmitter, on top of the head band.
- (5) Wrap the neck strap around the cord, head band and transmitter arm, and then secure to the catch on the chest plate.
- (6) Stow the phone in the box provided. See that ear pieces and transmitter do not touch the metal inside of the box.

- (7) Close and secure the box. This is important in order to keep water out and avoid shorting the phones or rotting the rubber cord.
- (8) Place cap on the jack boxes. Dampness, dirt, foreign matter, etc., will short out the jack box or prevent tight connections.
- (9) Never let phones hang by the wires connecting chest plate to the ear pieces.
- (10) Do not play with phones or attempt to repair them. If they do not work properly, take them to the I. C. Room and draw a good set.
- (11) Your telephones though rugged should be treated with care. Their replacement is difficult and sometimes impossible unless you are lucky enough to be at an issuing source. Proper care in the handling and use of telephones, combined with a proper stowage space, will prolong the usefulness and the life of the phones and avoid many of the troubles caused by indifference and carelessness.

Note: Bureau of Ships Bulletin #12 authorizes the issuing of repair kits for sound powered phones to battleships, carriers, cruisers, tenders and repair ships by submitting a ship's requisition. A book entitled "Operation, Maintenance and Repair of the Sound Powered Phone", should be on every ship.

STANDARD PHRASES  
AND PRACTICE

It is not enough to train talkers for the individual ship. Because of the rapid turnover of personnel on board ship, especially in heavy seas, they must be trained along standard lines in order that they will fit into the organization of ships to which they may be transferred. It is for this reason that standard phrases and practices are adopted aboard ship. Some standard phrases that must be learned are:

- (1) "All Stations -- (name your station) -- testing".
- (2) "Bridge (or the station you are calling) -- Damage Control", (or the name of your station).
- (3) "Repeat". If you don't understand the message, do not say, "Control would you please repeat all after the word \_\_\_\_" etc. On the other hand, keep the text of the message to a minimum but do not sacrifice the meaning of the text.
- (4) "Silence!" This means just what it says. All stations immediately maintain silence. Care should be used by the authority granting the use of this command.



The Damage Control Officer may reserve the exclusive right to use this command, or he may permit a station with a priority order, command, or message, to use it when other stations are talking to each other. Control of the circuit is of paramount importance

(5) Upon manning stations at General Quarters, all communication systems should be tested. Damage Control sends out the following message: "All Repair Parties, Damage Control Testing." Repair Parties then answer in numerical order answering thus, "Repair One, aye, aye," -- "Repair Two, aye, aye," etc. All other circuits are tested in the same manner. Be sure all stations are checked off to insure that you have communication with them. If only one station fails to answer, the trouble normally is at that station and they should be ordered by some other means of communication to shift phones.

(6) In general messages are divided into three parts:

- (a) Name of the station called.
- (b) Name of the station calling.
- (c) The message.

These steps follow in order without waiting for an acknowledgement from the station called. Stations will acknowledge the message after it has been received and is understood.

Example:

Assume Damage Control wishes to transmit a message to Repair Three:

"Repair Three - Damage Control. Text of message. "Repair Three acknowledges that the message is received and understood by saying "Repair Three, aye, aye." This is standard procedure and promotes clarity and speed of transmission. Talkers must be alert in order to get the message.

If time permits, and the message is very important, the Damage Control Officer may request the receiving station to repeat the message back to insure that it has been understood.

Note that the standard practice of calling the station addressed first, and identifying yourself later, is observed. This is important not only from the point of view of standardization, but also as a means of identification of the calling station. In a case on record Main Control got the following message in substance: "Control, we are being gassed and are about to pass out". No identification of the calling station was mentioned.

Control, by the process of elimination, finally located the station as a fireroom and sent out an investigating party. They found that smoke stack gases had been drawn into the fireroom, but because of the time delay in aid reaching them, all personnel were dead. If they had identified themselves, as they should have, some of them might have been saved. A lesson.

CHAIN OF  
CONTROL FOR  
DAMAGE

Provision should be made for the succession of Repair Stations to the Control for damage. Every ship, no matter how small, must have a pre-arranged permanent plan for such succession to control for damage in the event damage control headquarters becomes a casualty. There must be no possibility of losing control, and the chain must therefore be tested to the last station that could assume control for damage.

DRILLS

In order to test the efficiency and speed with which stations can take over control, Damage Control may simulate being wiped out by answering no communications. The next station in the chain of control, by testing at regular intervals, should soon discover that Damage Control is "out", if they can communicate with other Repair Stations and cannot contact Damage Control by any means of communication. They should then take over control and notify all other Repair Stations, The Commanding Officer, and Main Control that they are doing so. This information must be positive and there must be no doubt about who has control for damage. After assuming control, an investigating party should be sent to Damage Control.

This procedure should be followed until all stations have succeeded to control for damage and have exercised this control. Damage Control should check to see that all stations assume control properly, and should note the time it takes to discover that they have succeeded to the control for damage. This should be made a competitive drill and standings should be posted. Damage Control can always restore control by saying "Damage Control taking over control", and getting proper acknowledgements.

This drill emphasizes the necessity for keeping written logs of all information and orders given by Damage Control whether it applies to the specific station or not. In the event a station succeeds to control for damage, it must know what problems or casualties all other stations are handling in order to assume control intelligently. It must have the complete picture that is available to Damage Control Headquarters.

DAMAGE  
CONTROL  
COMMUNICATION  
BILL

A communication bill should be made up. Its uses will be numerous. An excellent type of bill is one that lists the circuits alphabetically with the location of their outlets. The systems are then cross-indexed by listing individual stations and showing the various circuits installed at these stations.



Example:

<u>Circuit</u>	<u>Outlets</u>
JA	Bridge, Conn, Plot, Central, NC, Spot I, Spot II, Signal Bridge, Sky Control, etc.
JB	Spot I, F.C. Tower, Spot II, etc.
etc.	

<u>Location of Jack Boxes</u>	<u>Circuits</u>
Navigation Bridge	JA(2), JL(2), 2JY, 2JT, JS, LJV, 2JV, X40J, X50J, X60J, JKm 21MC. etc.
<u>Signal Bridge</u>	JX, JA, JL, 17LY, 18JY, X50J, etc.
etc.	

This information duplicates the damage control circuits as shown on the communication diagrams, but it goes further in listing all sound power circuits on the ship. In making up the bill it is not enough to list the circuits and locations as shown on the diagram. It should be made out by actually sighting the circuits with their locations and listing them. This checks the diagram and unrecorded changes may be discovered that were made as a result in change of plans at the time of installation, or from changes made during a Navy Yard overhaul period.

#### ACTION CUT-OUT SWITCHES

During the preparation of the communication bill and organization for use of alternate circuits in the event of damage entailing loss of communication on primary circuits it is vitally important to give action cutout switches and their importance in damage control full weight.

Due to electrical characteristics involved all telephones on a circuit are connected in parallel, consequently, if any one telephone, cable, jack box, or any component part of that circuit, should become electrically short circuited, as the result of damage, all communication on that circuit is lost until the affected portion is isolated. This isolation may be accomplished by means of action cut-out switches found in the controlling station of each circuit or on the main telephone switchboard in interior communication rooms. In most installations both stations may take the action necessary to isolate short circuited portions of a circuit thus restoring the remainder of the circuit to use.

These action cut-out switches, wherever provided, are the best protection against total and continued lack of communication if their operation and damage control importance are fully recognized.

#### SUMMARY

The vulnerability of the communications on which Damage Control largely depends for its reports has been demonstrated in action. Although improvements have been made in this respect, the danger of organization must be guarded against. The various methods of communication between vital parts of the ship should be thoroughly understood so that if the line of communication normally used becomes damaged, alternative lines of communication available can be readily put into operation. All lines of communication should be tested periodically. There have been many cases where the information passed on to Damage Control has been insufficient to enable adequate action to be taken. Training in sending clear, concise and accurate reports utilizing standard phraseology, and sending them at the earliest possible moment by the quickest available means is essential.

Sound powered phones furnish the primary means by which highly important information and orders are sent from and to many parts of the ship during action. In case of damage, the accuracy and promptness with which individuals transmit a message will in many cases determine whether the damage can be properly handled or will be allowed to spread and endanger the ship. Proper transmission of a message can easily mean the saving of lives which might otherwise be lost.



ADDITIONAL COMMUNICATION INFORMATION

For information in making up a communication bill, the following list of battle circuits found on board ship is furnished. This list is for battleships. Smaller ships may select those applicable.

- JA - Captain's Circuit
- JB - Spotter's Circuit
- JC - Main Battery Control Circuit
- JD - Main Battery Units
- JE - Main Battery Sightsetters Circuit
- JF - Flag Officers Circuit
- JG - Catapult Circuit
- JK - Secondary Battery Fuzesetters
- JL - Lookout Circuit
- JN - Illumination Control Circuit
- JP - Secondary Battery Units
- JQ - Secondary Battery Sightsetters
- JS - Radio Bearings
- JT - Secondary Battery Control Circuit
- JV - Maneuvering, Docking and Catapult Control
- JW - Rangefinder Units
- JX - Radio and Signals
- JY - Anti-aircraft Units
- LJZ - Gunnery Control Circuit
- 2,3,4,5,6,7 etc., JZ Damage Control Circuits
- XJ - Supplementary Sound Powered Telephones
- MC - Announcing Systems