

CHAPTER 9

DAMAGE CONTROL COMMUNICATION SYSTEMS

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CHAPTER 9**DAMAGE CONTROL COMMUNICATION SYSTEMS****0901. General**

The main form of communication used in the Damage Control (DC) organisation is a mains-operated, battery-maintained, point-to-point interphone system in which the battery operation takes over automatically and immediately if the main power fails. In addition a number of group intercom lines are provided for use between DC outstations, HQ1 and the Command. The communication systems used in DC are as follows:

- a. The Rationalised Internal Communication Equipment (RICE) that includes the Versatile Console System (VCS).
- b. Main broadcast system.
- c. Ancillary broadcast systems (eg Machinery Broadcast).
- d. Main exchange telephones.
- e. Messengers (whose value in communications must never be underestimated).
- f. Firefighters' communication sets (helmet-mounted and hand-held radios).
- g. Standard Short Range Portable (SSRP) radios.
- h. Sound powered field telephones.

0902. Rationalised Internal Communication Equipment (RICE)

a. The RICE is a system that embraces all direct internal speech communications, with or without call up, with the exception of the automatic telephone exchange, main broadcast, sound reproduction equipment and loud-hailing systems. Outstation terminal equipment includes the following.

- (1) Microphones (with carbon, electromagnetic or noise-cancelling inserts as applicable); these may be hand-held, stalk-mounted or headset mounted.
- (2) Handsets (with carbon, electromagnetic or noise-cancelling inserts as applicable).
- (3) Headsets (single ultra-lightweight; double ultra-lightweight, lightweight, noise excluding or inductive loop for use on magnetic broadcast loops; split ultra-lightweight, lightweight or noise excluding, as applicable).
- (4) Loudspeakers, muted or non-muted, 1, 4 or 16 W output.
- (5) Switching elements.
- (6) Amplifying elements.

- (7) Plug and socket connections.
- (8) Headset, handset and microphone stowages.
- (9) Extensible cords.
- (10) Miscellaneous elements, eg non-amplifying mixers, etc.

b. At each outstation all the terminal equipment necessary to the outstation is installed. In certain instances, the facilities terminate in other equipment such as the versatile console system (VCS) units. The cabling from each outstation unit or assembly is wired via junction boxes as necessary to connection boxes sited in the Electrical Distribution Centres (EDCs) and Operations Room. In association with each connection box, a transformer, rectifier, filter and battery is fitted for the provision of the necessary 24 V DC power supply.

0903. Versatile Console System (VCS)

- a. The instrument panel (console) is formed by the grouping of selected units to satisfy control, indication and communication requirements of the operator. Each unit can perform a single function or a series of associated functions, is designed in a fixed range of sizes and can exist as a separate or complete unit.
- b. VCS units can be used in conjunction with interphones, telephone exchange systems, main broadcasts and intercoms. Matching units are fitted in some consoles for sound-powered telephone system, whereby the incoming call from the sound-powered hand generator is converted to the power call-up of an interphone and vice-versa.

0904. Group Lines

Multi-way group (conference) communications, utilising handsets/headsets between key positions and personnel, are provided as follows and shown schematically at [Fig 9-1](#):

- a. **Command Hot Line.** Permits information exchange between specified officers

Users: Command (Ops Room)
MEO (HQ1)
WEO (Ops Room)
DMEO (HQ2 in large ships)

- b. **Damage Control Hot Line.** Permits information exchange on Damage Control and Firefighting between specified officers. In larger ships additional, dedicated DC Hot Lines are provided between FRPPs and their controlling Section Base.

Users: DCO (HQ1)
All Section Bases OIC (Large ships)
All FRPPs OIC (Small ships).

- c. **DC Telling Line.** Enables DC information to be exchanged between Incident Board Operators. In larger ships additional, dedicated DC Telling Lines are provided between FRPPs and their controlling Section Base.

Users: HQ1 Incident Board Operator(s).
All Section Base/FRPP Incident Board Operators.
Ops Room Incident Board Operator.
Weapon Section Base Incident Board Operators.

- d. **‘L’ Reporting Group (‘Green Line’)**. Permits information exchange on electrical distribution between specified positions.

Users: SCC Electrical Control Desk
HQ2 Electrical Control Desk
All Switchboards and EDCs
Weapon Section Base WO2ET(WE)
Alternative Weapon Section Base CPOET(WE)
FRPPs

- e. **Weapon Repair Hot Line**. Provides communication to manage the Weapon Repair Organisation in the Action and Defence states.

Users: WEO (Ops Room)
DWEO (Weapon Section Base)
OIC/RIC (Alternative Weapon Section Base)

- f. **Weapon Repair Group**. Provides communication to co-ordinate Weapon Repair in the Action and Defence state.

Users: WO2ET(WE) (Weapon Section Base)
CPOET(WE) (Alternative Weapon Section Base)
All Weapon Repair Outstations
WEO’s Assistant (Ops Room)

- g. **Cleansing Station Intercom**. Permits information exchange within individual Cleansing Stations and adjoining citadel entrances.

Users: Cleansing Station Entrance (Weatherdeck)
Cleansing Station First Stage
Cleansing Station Second Stage
Cleansing Station Exit (Citadel)

- h. **Command Open Line**. Enables the DC and Weapon Repair Organisation to monitor the tactical situation as required.

Users: Command
WEO (Ops Room)
Command Team (Ops Room)
WSB (Loudspeaker watch only)
HQ1 (Loudspeaker watch only)
Alternative WSB (Loudspeaker watch only).

0905. Main Broadcast

Microphones with input to the entire Main Broadcast system are fitted at HQ1 and HQ2 with alarm pushes for both the General and Chemical Alarms.

0906. Main Exchange Telephones

The exchange telephone system is robust and well fitted with alternative and emergency power available and may include battery power back up. It must be borne in mind that any system of internal communication is a good channel for DC information.

Fig 9-1. Damage Control Minimum Communication Requirements

		COMMUNICATION								POSITION/PERSONNEL																		
		HOT LINE	OPEN LINE	DC TELLING LINE	'L' REPORT GROUP	WEAPON REPAIR GROUP	WEAPON REPAIR HOT LINE	DC HOT LINE		WEO - OPS ROOM	WEO ASSISTANT	MEO - HQ1	DCO - HQ1	CBRNPO ASSISTANT	'L' DESK HQ1	DMEQ ALT HQ1	DWEO WSB	OIC ALT WSB	WO2ET(WE)	CPOET(WE)	WEAPON REPAIR PERSONNEL	NAVAL STORES	OIC REPAIR POSTS	COMMAND SHELTER	CLEANSING STATION	MONITORING POSITIONS	WEAPON REPAIR WSB 1	WEAPON REPAIR WSB 2
OPS ROOM	COMMAND	X	X							X		X																
	PWO		X							X																		
	WEO	1	X				1				X		X			X	X	X										
	WEO'S ASSISTANT					3								X					X	X						X	X	
	INCIDENT BOARD			X																								
HQ1	MEO	1														X								X				
	DCO							3															X					
	CBRN ASSISTANT	1/4																						X	X	X		
	INCIDENT BOARD			X																								
	'L' DESK				X														X	X								
AHQ	OIC	1								X		X																
	INCIDENT BOARD			X																								
	'L' BOARD				X									X					X	X								
WSB	DWEO/ WO2ET(WE)		2			3	1			X								X										
	WO2ET(WE)																			X	X	X						
	'L' BOARD				X									X														
	INCIDENT BOARD			X																								
	WPN/SENSORS BOARD					3																						X
ALT WSB	OIC		2			3	1			X							X											
	CPO/PO ET(WE)																		X		X	X						
	'L' BOARD				X										X													
	INCIDENT BOARD			X																								
	WPN/SENSORS BOARD					3																					X	
WEAPON REPAIR PERSONNEL						3													X	X								
NAVAL STORES OFFICE																			X	X								
FRP P	OIC												X															
	INCIDENT BOARD			X				3																				
	'L' BOARD				X																							
SWITCHBOARD (L)					X																							
COMMAND SHELTER				X							X		X															
CLEANSING STATION													X															
MONITORING POSITION													X															

- Key** **X** Communication Link.
- 1** Exclusive person to person interphone line separate from other communications and able to operate without ships supplies.
 - 2** Loud speaker only.
 - 3** A dedicated weapon repair group and a DC hot line, not fitted in older ships.
 - 4** Communication link when under a CBRN threat.

0907. Messengers

Messengers should be nominated in case of complete communication failure. The messages they carry should be in a written format wherever possible. They are a useful means of relaying lengthy or complicated messages that might easily be misunderstood or take too much time on the telephone.

0908. Firefighters Helmet with Built In Communications (FFHBC)



WARNINGS

- 1. THE HELMET MOUNTED AND HAND HELD RADIOS ARE NOT TO BE USED INSIDE MAGAZINES. THIS APPLIES TO BOTH THE STANDARD AND INTRINSICALLY SAFE VERSIONS.**
- 2. RN FIREFIGHTING TEAMS ASSISTING WITH THE FIREFIGHTING EFFORT ON RFA SHIPS ARE TO BE AWARE OF THE ADDITIONAL HAZARDS AND THE REQUIREMENT FOR INTRINSICALLY SAFE RADIOS ONBOARD. EVERY EFFORT IS TO BE MADE TO MINIMISE THE HAZARD INCLUDING, IF NECESSARY, THE REMOVAL OF BATTERIES FROM NON-INTRINSICALLY SAFE RADIOS. UNDER NO CIRCUMSTANCES ARE NON-INTRINSICALLY SAFE RADIOS TO BE USED ONBOARD RFA VESSELS FOR TRAINING.**
- 3. IF A RN VESSEL COMMITS PERSONNEL TO ASSIST WITH THE FIREFIGHTING EFFORT ON A RFA SHIP, THEY ARE NOT TO USE THE STANDARD FFHBC BUT USE THE INTRINSICALLY SAFE VERSION INSTEAD. FOR INFORMATION, ALL RFA VESSELS ARE ISSUED WITH THE INTRINSICALLY SAFE VERSION ONLY.**
- 4. PERSONNEL ARE TO BE AWARE THAT THE MAXIMUM PEAK NOISE OUTPUT OF THE FFHBC IS 105 DB. CARE IS TO BE TAKEN TO LIMIT VOLUME SETTING DURING TRAINING SERIALS TO REDUCE EXPOSURE TO THIS NOISE HAZARD.**

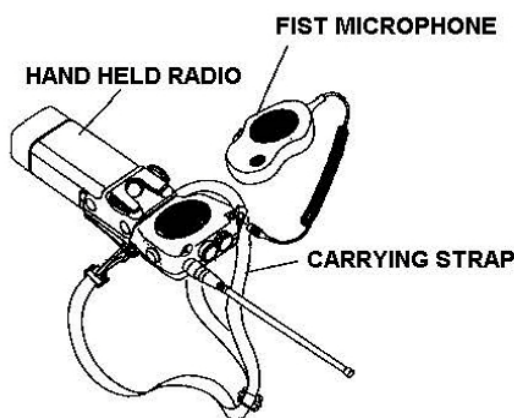
- a. The FFHBC is described in [Chapter 25](#) and full details are contained in BR 9215. The helmet contains a built-in radio, a bone-conducting microphone, a press-to-talk switch and earphones, enabling the members of a firefighting team to communicate with each other. A hand-held radio (see [Fig 9-2](#)) is provided to enable the I/C at the Forward Control Point (FCP) to communicate with the team.
- b. The radios have 10 channels. In the standby condition, all hand-held and helmet-mounted radios are to be set to Channel 1. At Damage Control State 1, each FRPP is allocated discrete channels (eg odd channels forward and even channels aft); these channels are to be specified in the Ships CBRNDC Orders.

The hand-held and helmet-mounted radios have a function switch that may be set to the FF or TL positions. The Team Leaders radio is to be set to the TL mode, allowing him to override the other radios on the same channel. The remainder of the firefighting team and the I/C at the FCP are to set their radios to the FF mode. Exceptionally, the I/C at the FCP may have to switch to the TL mode, eg for emergency withdrawal of the team. For Damage Repair Parties, communications may be between 2 hand-held radios.

0909. Intrinsically Safe FFHBC

The standard helmet-mounted and hand-held radios are not certified safe for use in dangerous spaces in RFAs, such as cargo tanks, cofferdams, pump rooms and areas within a tankers gas envelope. Intrinsically safe versions of the FFHBC and hand-held radio, with an explosion-proof rating of 'Ex i', are supplied to RFAs. A blue band on the helmet, the hand-held radio and their special batteries can identify these (see [WARNINGS](#) above).

Fig 9-2. Hand Held Radio



0910. Standard Short Range Portable (SSRP)

These are a small, transistorised portable radio transmitter/receives (eg Cougar) used for DC purposes and other ship activities. The case is splash and dust proof and contains the transmitter and receiver circuits with their controls, a speaker-microphone, a ship rechargeable battery, and built-in aerial. They are not intrinsically safe but they are acceptable for general use in HM ships (those sets supplied to RFAs are intrinsically safe). Their use must be subject to the following precautions:

- a. The set must not be used where an explosion hazard exists, as in the presence of petrol vapour or in empty fuel tanks.
- b. Although the set is splash proof, if it is used in an excessive water spray it should be contained in the plastic cover provided.

0911. Sound Powered Field Telephones

Two field telephones with a drum of connecting cable are provided at each FRPP to provide communication between it and the Forward Control Position (FCP). In harbour, field telephone communications and a guideline are run out from the upper deck to the FCP along a route decided by the Senior Fire Officer of the Fire Rescue Service (FRS) and the OOD. A field telephone link is established between HQ1 and the FCP when the location of the FCP is known.

0912. Secondary Communications Position (SCP)/Emergency Communications Post (ECP) arrangements for FF/DD/LPD/LPH/QEC

a. The aim of establishing a SCP/ECP is that it should be possible after an attack or major incident to remain within the force and maintain communications. When the ship is operating in continuous Defence Watches and pre-planned Action Stations, the nominated ET(WE)(CIS) rating is to ensure that the following minimum equipment is readily available to be taken to a designated position on the upper deck:

- (1) 1 x HF Portable Transceiver (Bowman PRC 325 HF Man-pack).
- (2) 1 x UHF Portable Transceiver (Walter Dittel FSG7016 2CNI).
- (3) Associated ancillary equipment including spare batteries.
- (4) SCP pack containing current COMPLANs, Callsigns, EMCON, NUCO, Mini-SOCs, Chinagraphs and Signal Pads.
- (5) PPE for upper deck working and State 1 posture.

b. Portable VHF communications is to be should be available on the Bridge and deployed as required by the Tactical Support (TCS) operators. Portable equipment on the SCP/ECP should be set to frequencies nominated on the COMPLAN as the Command's highest priorities. These may be amended according to the situational requirements.

c. The SCP/ECP position should be available in the Aft part of the ship with easy access to internal communications. A regular routine for testing the equipment deployed to this position should be in place along with a battery management organisation.

d. Activation of the SCP/ECP is to be exercised on a regular basis to ensure all staff can quickly react to an emergency condition and personnel are all fully conversant with the emergency communications arrangements.