

CHAPTER 10

THE ENGINEER OFFICER

(MOD Sponsor: NAVY COMMAND HQ – ES DIV SO1 DOCTRINE and POLICY)

This chapter has been diversity and inclusion impact assessed by the sponsor in accordance with Departmental policy. No direct discrimination or adverse impact was identified. This chapter is due for review at the next routine amendment exercise.

CONTENTS

SECTION I - THE STAFF ENGINEER OFFICER

Para

- 1001. Assistant Chief of Naval Staff and Assistant Chief of Staff
- 1002. The Chief Naval Engineer Officer (CNEO)
- 1003. Chief Staff Officer Engineering (CSO(E))
- 1004. Deputy Assistant Chief of Staff (Engineering Support) (DACOS(ES))
- 1005. Superintendents Fleet Maintenance/Captains Engineering
- 1006. Flotilla Staff Engineer Officers and Engineer Officers on the Staff of Flag Officer Sea Training
- 1007. General Responsibilities of Staff Engineer Officers
- 1008. The Fleet Constructor

SECTION II - HEADS OF ENGINEERING DEPARTMENTS

- 1016. Head of an Engineering Department
- 1017. Supplementary Instructions
- 1018. Organisation of Department
- 1019. Training
- 1020. Maintenance and Repair
- 1021. Requirements of Other Departments
- 1022. Standards
- 1023. Explosives and Armament Stores
- 1024. Records and Reports
- 1025. Responsibilities for Work Done by DE&S, Dockyard Companies and Other Repair Authorities
- 1026. Relief of the Head of an Engineering Department
- 1027. Stores Accounting
- 1028. Environmental Compliance
- 1029. Provision of Safety Case Management Advice to the Commanding Officer
- 1030. Provision of information to Platform Authority during an Emergency Incident

SECTION III - THE MARINE ENGINEER OFFICER (SURFACE SHIPS AND SUBMARINES)

- 1041. General Duties
- 1042. Specific Duties
- 1043. Station of the Marine Engineer Officer
- 1044. Hull and Watertight Integrity
- 1045. Propulsion Controls, Steering Gear, Engine Order Telegraphs, Sirens and Navigation Lights
- 1046. Danger of Damage, Injury or Inefficient Plant Operation
- 1047. Machinery Trials
- 1048. Requisitioned or Hired Merchant Ships
- 1049. Fuelling
- 1050. Nuclear Propulsion Safety

SECTION IV - THE WEAPON ENGINEER OFFICER (SURFACE SHIPS)

- 1081. General Duties
- 1082. Specific Duties
- 1083. Station of Weapon Engineer Officer

SECTION V - THE WEAPON ENGINEER OFFICER (SUBMARINES)

- 1091. General Duties
- 1092. Nuclear Weapon Safety
- 1093. Explosives and Safety
- 1094. Watertight Integrity
- 1095. Training
- 1096. Administration
- 1097. Weapon Practice

CHAPTER 10

THE ENGINEER OFFICER

SECTION I - THE STAFF ENGINEER OFFICER

1001. Assistant Chief of Naval Staff and Assistant Chief of Staff

1. Those Officers appointed as Assistant Chief of Naval Staff (ACNS) or Assistant Chief of Staff (ACOS) on the staff of the Second Sea Lord are to perform the Develop, Deliver and Generate functions as detailed in the Navy Command Operating Model, through Letters of Delegation or as may be ordered by the Second Sea Lord.

2. The HQ consists of three divisions where engineering staff functions exist, Ships led by ACNS(Ships), Submarines (ACNS(SM)) and Engineering Support DNS (Director Naval Support).

1002. The Chief Naval Engineer Officer (CNEO)

1. CNEO is the functional head of the Royal Navy and Royal Fleet Auxiliary Engineering Branch. The role is responsible for providing leadership of the Branch by promoting a culture and ethos of professional engineering excellence, pride and a strong sense of belonging to the Royal Navy, Royal Fleet Auxiliary and Engineering Branch. CNEO provides a focal point for championing RN/RFA engineering issues and risks by influencing and advising MOD and RN executive organisations. Delivery of CNEO's responsibilities is enacted through the Naval Engineering Strategy and CNEO's annual conference. The role is supported by the Deputy CNEO, Heads of Specialisation (appointed by CNEO), CSO(E)s, DACOS(ES), DACOS(AE) and the CNEO Warrant Officer – all of whom make up the Naval Engineering Board.

1003. Chief Staff Officer Engineering (CSO(E))

1. CSO(E)s specializing in Surface Ships and Submarines respectively will be appointed to assist ACNS(SM) and ACOS(Ships) in executing their duties.

2. The CSO(E)s are additionally delegated authority from Fleet Commander to act as the Operating Duty Holder Chief Engineer (ODH CE) for the Surface Ships and Submarines respectively in accordance with DSA-02 and JSP 9147. As the ODH CE and Capability Managers they are to provide responsive engineering service to ACNS(Ships), ACNS(SM), and ACNS (A & C) and support to units and establishments such that units can ensure safe operation and maintenance that support the continuous improvements in capability delivery.

3. The CSO(E)s are responsible to ACNS(SM) and ACOS(Ships) for meeting Second Sea Lords requirements for operational units through the generation of available, capable vessels that are safe to operate and maintain.

4. The CSO(E)s are to set and implement Surface and Submarine Flotilla engineering policy in concert with other MoD authorities. They are to take corrective action to overcome shortfalls, and action to continuously improve current and projected availability that assures optimal operational capability via the performance of engineering personnel, equipment and systems. They are also to assess the material state of Upkeep ships and to advise associated personnel.

1004. Deputy Assistant Chief of Staff (Engineering Support) (DACOS(ES))

1. DACOS(ES) supports DNS through ACOS(FS&E), in providing sponsorship of key engineering enablers. Responsibilities include Operational Engineering capability management, whole force development, engineering support innovation and implementation of the Naval Engineering Strategy (NES).
2. Supporting ACOS(FS&E) as Deputy Chief Naval Engineer Officer (DCNEO), DACOS(ES) co-ordinates the development of engineering doctrine and engineering policy processes and governance, in consultation with CSO(E)s, and DACOS(AE), through the NES to the NEB.

1005. Superintendents Fleet Maintenance/Captains Engineering

1. Superintendents Fleet Maintenance/Captains Engineering on the staffs of Naval Base Commanders at Portsmouth, Devonport and Faslane deliver maintenance and repair support to the Navy Command HQ on behalf of Assistant Chief of Staff Support (ACNS(SPT)). They will also provide engineering advice and guidance to Fleet units as required. At NBC Devonport this responsibility is split between Captain Engineering (for Surface Ship support) and Superintendent Upkeep Submarines (for Submarine support).

1006. Flotilla Staff Engineer Officers and Engineer Officers on the Staff of Flag Officer Sea Training

1. Engineer Officers on the staffs of COMPORFLOT, COMDEVFLOT and COMFASFLOT are to perform such duties in connection with ships and submarines in their base ports as may be ordered by their waterfront commander, having due regard to the instructions issued by the Fleet Commander, ACNS (Ships) ACNS(SM), ACNS (A & C) ACOS(Ships) and ACOS(ES). Their duties will primarily be to have oversight of engineering standards and safety, seek appropriate delivery of the Naval Base services to Fleet units and to provide guidance and advice to Engineer Officers in sea-going appointments. In conducting these tasks, Waterfront staffs also provide assurance to the ODH (via the ODH CE) that ships and submarines are being maintained and operated in accordance with DSA-02 and BR9147.
2. Engineer Officers on the Staff of Flag Officer Sea Training will oversee the delivery of all training both ashore and at sea. They will also assist heads of engineering departments in ships and submarines with essential safety and administrative checks and inspections prior to the vessel proceeding to sea following Upkeep or maintenance periods.

1007. General Responsibilities of Staff Engineer Officers

1. The responsibilities of each Staff Engineer Officer under the direction of their Flag or senior officer are as follows:
 - a. To advise generally on all matters which are the responsibility of the Engineer Officers of the appropriate profession or sub-specialization within or attached to the command.

- b. To ensure that the operation and upkeep of machinery and equipment which are their material concern are being carried out in accordance with the appropriate instructions and accepted professional standards.
- c. To carry out such inspections and audits as are called for in the appropriate manuals and instructions.
- d. To propose to the Flag or senior officer any measure which in their opinion will effect improvement in any matter which is their concern.
- e. To bring immediately to the notice of the Flag or senior officer any important defects or reduction in the efficiency of machinery or equipment which are their concern, and to ensure that timely action is taken to remedy these, having regard to all the resources available.
- f. To ensure that proposals for dockyard work, such as defect lists and proposed Alterations and Additions, are correctly prepared and are adequately supported by factual information.
- g. To advise on the professional conduct and ability of the Engineer Officers of the appropriate profession or sub-specialization within or attached to the command.
- h. To ensure that the requirements for training and advancement of junior officers and ratings of the appropriate sub-specializations and branches are being met.
- i. To maintain such records and to carry out such personal visits as will enable them to discharge their responsibilities in a timely and efficient manner.
- j. To ensure the appropriate CSO(E) is appraised on any concerns, issues and risks identified and to ensure that timely action is taken to mitigate these, having regard to all the resources available.
- k. To provide assurance to CSO(E), as the ODH SPOC that the units are being maintained and operated safely as laid down in DSA-02.
- l. To assess, and as permitted, issue SQEP waivers to units when applied for by the unit's Commanding Officer (CO) on behalf of CSO(E). In so doing: to consider the cumulative as well as the specific risks that may be presented by a reduction in competent personnel onboard a particular ship, cogniscent of the unit's tasking and material state.
- m. To provide the initial assessment of unit Engineering ISIs, capturing the lessons and actions required, following up on such actions with the unit's Engineer Officers.

1008. The Fleet Constructor

1. The Fleet Constructor is permanently assigned to NCHQ and is principally responsible for the provision of submarine naval architecture advice to CSO(E)SM, and supporting CSO(E)SS as required. In addition the Fleet Constructor supports CSO(E)SM in all aspects of the SM Operating Duty Holder single point of contact role.

1009–1015. Unallocated

SECTION II - HEADS OF ENGINEERING DEPARTMENTS

1016. Head of an Engineering Department

1. This section applies to Engineers assigned to ships, submarines and craft, Government Owned Contractor Operated (GOCO) vessels, Contractor Owned Contractor Operated (COCO) vessels and ships on MOD/DTMA charter, as Head of an engineering department, in accordance with the Unit Establishment List (UEL), from standing by in build, through to handover for sale or disposal (N Role).

2. The Marine Engineer Officer and the Weapon Engineer Officer are the heads of their respective engineering departments of a ship, or unit, with direct responsibility to the Commanding Officer for the efficient functioning of their departments; a single Engineer Officer may be the head of a combination of two or more engineering departments. An Engineer Officer Head of Department of OF3 rank or above is considered to be exercising Professional Command (Engineering) analogous to Sub-Unit Command (BR3) of his/her department.

3. Engineer Officers at sea are to:

a. Operate, maintain, diagnose and repair equipment in accordance with the established procedures to assist the Command in achieving the highest levels of Operational Capability.

b. Provide feedback from operational ships of any perceived shortfalls in Operational Capability. Provide the Delivery Duty Holder (DDH) / ODH SPOC with incident reports and feedback from operational ships of any incidents, accidents and near misses. This is to include any simulator training events.

c. Provide engineering advice to the Command.

d. Support the Commanding Officer as required with provision of advice for Safety Case Management. (article1029)

4. The head of an engineering department must hold a Charge Qualification (for Marine Engineer Officers this is to be equivalent to the appropriate IMO STCW Certificate of Competency).

5. An Engineering Department without an Engineer Officer. A Suitably Qualified and Experienced Senior or Junior Rate will be assigned as head of the engineering department, and they are to hold the necessary competencies stipulated in the UEL. The Commanding Officer is:

a. To ensure that all relevant Defence Instructions and Notices, correspondence and hand-books are available to such Senior/Junior Ratings and that the work of preparing reports and returns is properly supervised.

b. To appoint an Officer to look after the welfare of the ratings of the engineering department.

6. The Absence of the Marine Engineer Officer is to be managed as detailed in BRd 3000, Art 0205.

7. The absence of the Weapon Engineer Officer is to be managed as detailed in BRd 300(SS), Art 0402, and BRd 300(SM), Art 0214 and 0215.

8. The absence of the Explosives Responsible Officer is to be managed as detailed in QRRN Chapter 27 and JSP 862(Pt 1(SS) 0106 & Pt 2(SM)) Chapter 1.

1017. Supplementary Instructions

1. In the performance of their duties, heads of engineering departments are to comply with the instructions in appropriate manuals, which are to be considered as supplementary to the instructions in this chapter. Their attention is particularly directed to BRd 3000 Marine Engineering Manual or BRd 0300 (SS & SM) Naval Weapon Engineering Manual and BRd 1313 Maintenance Management in Surface Ships as appropriate, and to BRd 3001 Fleet Engineering Orders (Surface Ships) and BRd 023 Technical Instructions for Submarines Volume 1.

1018. Organisation of Department

1. The head of an engineering department is responsible to the Commanding Officer for the organisation and good order of their department, including the production and implementation of the departmental watch bill, operating procedures and instructions.

1019. Training

1. The head of an engineering department is responsible to the Commanding Officer for the state of training of all personnel, including ship system operators and duty officers, operating and maintaining systems and equipment in their charge. In carrying out this responsibility they are to ensure that the Executive Officer is kept informed of the state of training of operators so that the latter can carry out their co-ordinating duties for training.

1020. Maintenance and Repair

1. The head of an engineering department is to take every opportunity, both at sea and in harbour, to make progress with the maintenance of the machinery and equipment for which they are responsible. Whenever possible, they are to make good defects as soon as they are discovered.

2. Engineering HODs are to represent to the Commanding Officer details of any important repair to, maintenance or preservation of, machinery or equipment which the exigencies of the Service do not permit to be carried out either immediately or at an early date.

3. Prior to each occasion of arrival in harbour, the head of an engineering department is to ascertain from the Commanding Officer, who will have been informed by the Fleet Commander or senior officer, what time is available for maintenance. The head of each engineering department is then to arrange their work accordingly, taking care that the ship remains within the given notice for sea.

BRd 2

4. Should a defect develop which in the opinion of the head of an engineering department makes it absolutely necessary that the ship should put into port, they are to inform the Commanding Officer immediately. If necessary, they are also to submit a written report to the Commanding Officer as soon as possible thereafter.

1021. Requirements of Other Departments

1. The head of an engineering department is responsible for meeting the requirements of other departments for the maintenance of equipment in their charge or use, in so far as it is the material concern of their department. Such other departments are equally responsible for providing the opportunity for the work to be done.

1022. Standards

1. The head of an engineering department is to ensure that proper professional standards and practices are adhered to in the upkeep and maintenance of the machinery and equipment which are in their charge.

1023. Explosives and Armament Stores

1. Heads of engineering departments have responsibilities for certain fittings, wiring, lighting and appliances associated with the ship's magazines and ordnance. The appropriate regulations are contained in JSP 862, MoD Maritime Explosives Regulations, Pt 1, Art 0115 and Pt 2. For responsibilities of Weapon and Air Engineer Officers relating to safety of explosives see Chapter 28, Art 2803.

2. Engineering HODs may also have responsibilities for associated stores, the appropriate accounting regulations for which are contained in JSP 886, Defence Logistics Support Chain Manual.

1024. Records and Reports

1. The head of an engineering department is to keep such technical records as are required and to prepare such reports or material as may be ordered. In particular they are responsible to the Commanding Officer for:

a. Records, reports, returns and other forms associated with the installation, operation, performance, and upkeep of systems and equipment in their charge, in accordance with the instructions in BRd3001, BRd300(SM), BRd023, BRd024 and BRd1313.b. The maintenance of records of approved alterations and additions and class modifications. The head of engineering department is also responsible for the coordination of for new alterations and additions and class modification proposals.

b. The maintenance of records of approved Minor/Fleet trials and supplementary reports.

1025. Responsibilities for Work Done by DE&S, Dockyard Companies and Other Repair Authorities

1. The principle to be followed is that the repair authority undertaking the work is responsible for the satisfactory completion of that work. This applies to DE&S , dockyard companies or other contractors.
2. The responsibilities for trials and acceptance of work undertaken by contractors are to be specified in the relevant contracts. Where a dockside test organisation exists, approved procedures of this organisation are normally to be used.
3. Ship's staff are to take every opportunity to witness the maintenance and repair of their equipment whilst in the hands of the repair authority including shop trials/inspections whenever possible.

1026. Relief of the Head of an Engineering Department

1. When the head of an engineering department is relieved, the transfer of stores, fittings and fixtures, spare gear, drawings and books is to be carried out in accordance with instructions in BRd 3000, BRd 0300 (SS & SM). The MEO's and WEO's Supersession Certificates are to be forwarded in accordance with BRd 3000, Marine Engineering Manual, Article 0221 and BRd 300, Naval Weapon Engineering Manual, Article 0601 or BRd 0300(SM) Submarine Weapons Engineering Manual, Article 0217 as appropriate.

1027. Stores Accounting

1. The head of an engineering department is to ensure that the equipment, stores and spare gear for which they or members of their department are responsible are properly accounted for and mustered.

1028. Environmental Compliance

1. Heads of engineering departments are to take particular care to avoid the pollution of the environment through any discharge, spillage or emission in contravention of MARPOL regulations. Any such contravention is to be reported to the administrative authority in accordance with current orders, BRd 0167.

1029. Provision of Safety Case Management Advice to the Commanding Officer

1. The Commanding Officer is the person charged with safe operation of a ship. Each Head of Engineering Department is to support the CO to enact his duty by:-
 - a. Ensuring that the CO is aware of relevant safety limitations applicable to the platform, especially any assumptions made in the safety case that limit operational capability and availability. The Command Safety and Environmental Summary or associated Addendums are the principal documents that supports this and must be reviewed as part of the supersession of the Commanding Officer.
 - b. Ensure equipment is maintained and operated in accordance with the assumptions of the safety case.

BRd 2

- c. Ensure that staff are suitably qualified and experienced (SQEP) in accordance with the Unit Establishment List (UEL), which will cover the assumptions of the safety case. If this cannot be achieved, suitable concessions are to be sought from the DDH / ODH, and the risk of this deficiency understood and briefed to the CO.
- d. Ensure that engineering safety certification upon which the Platform Safety Case relies, is held and the CO is informed when there is concern that certification may lapse.
- e. Assure that all on board mitigations and contingencies required to reduce safety hazards to tolerable and ALARP are enacted. Where this is not practicable the engineer shall ensure that the CO, Platform Authority (PA), DDH and ODH are informed as appropriate.
- f. When a conflict exists between the safety case assumptions and operational requirements, the HOD shall support the CO by ensuring that operations out with the scope of the safety case are only undertaken having considered the safety implications and undertaken a safety risk assessment to an appropriate degree, the justification should be documented. If time permits the ODH, DDH and PA should be consulted iaw DSA-02.

1030. Provision of information to Platform Authority during an Emergency Incident

- 1. During the midst of an CBRNDC incident or other emergency scenario, the HOD will have many conflicting demands upon their time. As the scenario permits, the HOD is to ensure that technical information regarding the emergency incident is provided to FOMO/FOMOSM to allow the PA to provide relevant technical assistance. In particular for events involving grounding, collision, or flooding the requirements of BR2170 Vol 1 Chapter 31 Annex A and BR 2170 Vol 4 Chapter 7 are to be complied with.

1031–1040. Unallocated

SECTION III - THE MARINE ENGINEER OFFICER (SURFACE SHIPS AND SUBMARINES)

1041. General Duties

1. The Marine Engineer Officer is the head of the Marine Engineering department and is accountable to the CO for:
 - a. The organisation, administration, training and good order of their department, including the welfare of personnel, but taking account of the Executive Officer's responsibility for the general organisation of the ship, the discipline and welfare of the whole ship's company and co-ordination of training. (See **0901**).
 - b. The operation, maintenance, performance, availability, security, custody and safety of all systems and equipment in their charge as defined in BRd 3000, Marine Engineering Manual.
 - c. Carrying out their responsibilities as the head of an engineering department as defined in Chapter 10, [Section II](#).
 - d. Reduction of acoustic and infra-red signature in accordance with BRd 9348.
 - e. Providing feedback to Navy Command and DE&S of any perceived shortfalls in Operational Capability, availability, sustainability, design or material state.
 - f. The provision of engineering Operation, Maintenance, Diagnostic and Repair (OMDR) advice.
 - g. The production and implementation of the propulsion plant watchbill, operating procedures and instructions outside of those promulgated by the PA.
 - h. The custody of drawings and publications associated with the equipment and systems in their charge.
 - i. The maintenance of records of approved alterations and additions and class modifications and co-ordination of proposals for new alterations and additions and class modifications for the whole submarine.
 - j. The records, reports, returns and other forms associated with a, b, and c above and with the installation, operation, performance and upkeep of machinery in their charge.
2. In ships in which no marine engineering sub-specialist officer is borne, the officer and rating detailed in accordance with Article 1016 are to assume respectively the responsibilities and carry out the duties of Divisional Officer of all marine engineering personnel and Marine Engineer Officer.
3. The responsibilities of the Marine Engineer Officer are detailed in BRd 3000, Marine Engineering Manual, Chapter 1, Section 1, with the boundaries of responsibility between the weapon and marine engineering departments for equipments defined in BRd 0300 (SS & SM) and BRd 3000.

BRd 2

4. To ensure that a high standard of efficiency is maintained within their department, the Marine Engineer Officer is to work closely with the other heads of departments (see also [Para 1021](#)). In particular they are to:
 - a. Ensure all appropriate officers are aware of the operational requirements and performance capabilities and limitations of the systems and equipment in their charge.
 - b. Inform Commanding Officer and Operations Officer of defects which affect propulsion and platform system performance.
 - c. Ensure that the Executive Officer and Operations Officer are kept informed of the requirements for system maintenance so that maintenance and repair programmes are effectively co-ordinated within the ship's programme. (See 0903.1 and [Para 1020](#)).
 - d. Ensure that the Weapon Engineer Officer is kept informed of any degradation in the services supplied to weapon systems, i.e. electrical power supplies, conditioned ventilation, hydraulic power, chilled water and LP and HP air supplies for which they are responsible.
 - e. Provide technical advice and assistance to other departments (see also [Para 1021](#) and [Para 1030](#)).

1042. Specific Duties

1. In addition to their general duties the Marine Engineer Officer is accountable to the Commanding Officer for the performance of the following duties:
 - a. Internal Battle Controller (Charge Engineering Function in Submarines).
 - b. Noise Engineer Officer in accordance with BRd 9348 Art 0203. For Submarines this role is conducted by the Deputy Marine Engineering Officer.
 - c. In Ships with High Voltage Power Systems they are normally to be the Authorising Engineer in accordance with BR 2000(52)(1).
 - d. Ballast Water Management Officer in accordance with BRd167.

1043. Station of the Marine Engineer Officer

1. The station of the Marine Engineer Officer in action and emergency stations is to be that approved by the Commanding Officer, who is to be guided by the instruction in BR 2170(1), Ship CBRNDC Manual, Vol 1 (SS) / Vol 4 (SM).and the vessels specific BR 2170(7).
2. When the ship/submarine is entering or leaving harbour, and at other times when particular care is necessary in the operation of machinery under their charge, the Marine Engineer Officer's station in surface ships is normally to be the Ship Control Centre/Machinery Control Room/Manoeuvring Room or primary control position.

They are to arrange for a suitably qualified person (DMEO or MEOOW1 qualified POET(ME) or above) to attend the bridge to monitor bridge machinery control and provide advice to the Command/MCR as appropriate. Alternatively, the Marine Engineer Officer may, with the approval of the Commanding Officer, be stationed on the bridge, but in any event should the Marine Engineer Officer consider that their presence is required elsewhere, they are to arrange that the Commanding Officer is informed immediately of their whereabouts.

1044. Hull and Watertight Integrity

1. The Marine Engineer Officer is accountable to the Commanding Officer for the maintenance and integrity of the hull and fittings, including the stability, strength, watertightness, gas tightness and preservation of the whole hull structure of the ship, including all opening and operating mechanisms except for those openings which are the responsibility of the Weapon Engineer Officer.

2. The Marine Engineer Officer is to ensure that the ship's draught forward and aft is reported to the Commanding Officer and the Navigating Officer, for entry into the Ship's Log before sailing and on arrival in harbour. The MEO shall ensure that the vessel is operated within the operating restrictions indicated on Naval Authority Certificate (Structural Strength and Stability – NSSC).

1045. Propulsion Controls, Steering Gear, Engine Order Telegraphs, Sirens and Navigation Lights

1. Before getting under way the propulsion controls, steering gear, engine order telegraphs, emergency communications, sirens, emergency / salvage equipment, navigation lights, davits and capstans are to be tested and proved fully functional by the Marine Engineer Officer, or other officer or responsible engineering rating nominated by them. The Marine Engineer Officer or their representative is to satisfy themselves, by actually working the steering gear, telegraphs and sirens, that they are free from obstruction and in good working order.

2. The report that the propulsion controls, steering gear, telegraphs, navigation lights and sirens are correct is to be made by the Marine Engineer Officer to the Commanding Officer at the same time as the propulsion machinery is reported ready for sea in accordance with BRd 3000.

3. Where two or more marine engineering ratings are allowed by complement for watch-keeping at each propulsion machinery control position the Marine Engineer Officer is to ensure that a record is kept of all orders received for starting, stopping and altering the revolutions of the propulsion machinery except when control is from the bridge or a machinery control system with automatic data capture is fitted. In coastal craft, minesweepers and motor driven craft 47.5m long or less, engine telegraph and revolution orders need not be recorded (See BRd 3000, Marine Engineering Manual).

BRd 2

4. **Emergency Communications.** A recognised emergency method of communication between the propulsion machinery control position(s) and the bridge is to be arranged by the Marine Engineer Officer so that:

- a. The Commanding Officer, or Officer of the Watch (OOW), can be informed that an engine or engines have had to be stopped owing to circumstances beyond control.
- b. The Commanding Officer, or OOW, can be asked for permission to stop immediately an engine or engines to prevent serious damage to the machinery.
- c. Main engine orders may readily be passed if telegraphs fail; and
- d. The Commanding Officer, or OOW, can override the emergency stop/slow in the interests of ship safety.

1046. Danger of Damage, Injury or Inefficient Plant Operation

1. The Marine Engineer Officer is to represent to the Commanding Officer or to the Officer of the Watch anything which is being done, or which is ordered to be done, which, in their opinion, creates a risk of damage to machinery or systems, an increase in through life cost for equipment, injury to personnel, or which will result in inefficient use of fuel or resources. Having made this representation they are to be guided by the directions contained in BRd 3000, Marine Engineering Manual.

1047. Machinery Trials

1. The Marine Engineer Officer is responsible for ensuring that machinery trials are carried out as laid down in BRd 3000, Marine Engineering Manual.

1048. Requisitioned or Hired Merchant Ships

1. In requisitioned or hired merchant ships in commission or ordered by the Defence Council to be commissioned to which BRd 3000 may be issued for guidance and in which the machinery is run by the mercantile crew, the instructions in BRd 3000 are to be observed as far as they are applicable to the machinery and propulsion plant fitted in the ship and are not opposed to the regulations and instructions issued to the mercantile crews, or those under which crews are serving.

1049. Fuelling

1. Marine Engineer Officers are to ensure that all fuelling operations are conducted in accordance with the instructions contained in the relevant section of the following publications:

DFL Defence Logistics Framework
BR 875, Regulations for Royal Fleet Auxiliaries
BR 1754, Safety Regulations for Storing and Handling Petroleum Oils and Lubricants,
and certain other hazardous stores in HM Ships
BRd 3000, Marine Engineering Manual

BRd 3009, Naval Oils Manual
BRd 0167 Fleet SHE Manual
ATP 16, Replenishment at Sea
JSP 317, Joint Service safety Regulations for the Storage and Handling of Fuels and Lubricants (POL)

1050. Nuclear Propulsion Safety

1. The Marine Engineer Officer of a submarine is the professional advisor to the Commanding Officer on nuclear propulsion safety matters.
2. They are responsible to the Commanding Officer for the integrity and efficient operation of the propulsion plant containment and the implementation of the appropriate containment state.
3. He/She will assume the duties of the Environment Control Officer (BRd1326) and Radiation Safety Officer (BRd9465). These duties may be delegated to the deputy if qualified in accordance with the NRPA's Safety Management Arrangements.
4. He/She is responsible in conjunction with the Executive Officer for training and exercising the crew in emergency procedures required to combat all hazards that can arise from the nuclear propulsion plant.
5. He/She is responsible to the Commanding Officer for the correct implementation of Safety Management Arrangements pertaining to Naval Reactor Plant.

1051–1080. Unallocated

SECTION IV - THE WEAPON ENGINEER OFFICER (SURFACE SHIPS)

1081. General Duties

1. The Weapon Engineer Officer/Senior Weapon Engineer is responsible to the Commanding Officer for:

- a. The material performance, availability, maintenance, safety, security and custody of all individual weapon systems and equipment in their charge, as defined in BRd 0300, Fleet Weapon Engineering Manual (Surface Ships).
- b. The material performance and availability of the ship's Combat System, Mission Systems, Communications Systems and all other systems for which the WE Department has responsibility.
- c. When serving as the Explosives Responsible Officer, complying with Chap 28 and JSP 862.

2. They are the head of the weapon engineering department and, as such, are responsible to the Commanding Officer for the administration, organisation and good order of their department, but through the Executive Officer for matters involving general organisation of the ship, discipline and welfare of the whole ship's company and the co-ordination of training. Their responsibilities as head of an engineering department are defined in Chapter 10 [Section II](#).

3. The responsibilities of the Weapon Engineer Officer are detailed in BRd 0300. The boundaries of responsibility between the weapon and marine engineering departments for equipments are defined in BRd 0300 and BRd 3000, and those between the weapon engineering and warfare department are defined in Fleet and Ship's Standing Orders.

4. To ensure that a high standard of efficiency is maintained within their department the Weapon Engineer Officer is to work closely with the other Heads of Department, and officers of the Warfare Department (See also [Para 1021](#)). In particular they are to:

- a. Ensure all appropriate officers are aware of the performance capabilities and limitations of the systems and equipment in their charge.
- b. Inform the Commanding Officer and Operations Officer of defects which affect combat and communications system performance.
- c. Ensure that the Executive Officer, Operations Officer and Marine Engineer Officer are kept informed of the requirements for system maintenance and enhancement so that maintenance, repair and capability update programmes are effectively coordinated within the ship's programme.
- d. Ensure that the Marine Engineer Officer is aware of the requirement for services for which they are responsible, i.e. supplies of electrical power, conditioned ventilation, hydraulic power, chilled water and LP and HP air supplies.
- e. Provide technical advice and assistance to other departments (See also [Para 1021](#) and [Para 1030](#)).

- f. Carry out weapon systems performance analysis in collaboration with the Operations Officer.
- g. Ensure that the Operations Officer is kept informed of the state of operator training on systems for which the Weapon Engineer Officer has operational responsibility so that the former can carry out their coordinating duties for weapon and communication systems training. (See 1962 sub para 2).
- h. Ensure that routine operator checks, and performance checks, are conducted correctly on those systems for which they have responsibility for operation. They are to keep the Operations Officer informed of the state of these checks so that the latter can carry out their coordinating duties for these checks. (See 1962.sub para 2). For other systems employing weapon department personnel as operators, they are to provide personnel as operators to enable the Operations Officer to carry out routine operator checks and are to ensure that performance checks on these systems are carried out correctly.
- i. Make full use of the assistance which warfare officers are required to give them (see 1966).
- j. Prior to getting under way, to check and report to the Commanding Officer that all navigation, communications and other equipment for which they are responsible are functioning correctly to allow the ship to safely proceed to sea in accordance with BRd 0300.

1082. Specific Duties

1. In addition to their general duties the Weapon Engineer Officer is accountable to the Commanding Officer for the performance of the following specific duties.
 - a. Command Adviser. See BRd 0300.
 - b. Explosives Responsible Officer, (except on QEC and some Minor war Vessels). See 2802 and JSP 862.
 - c. Radiation Safety Officer. See JSP 392 Pt1, Section 2 and BRd 0300.
 - d. Laser Safety Officer. See JSP 390 and BRd 0300.
 - e. CBRN Adviser. See BR 2170 (1).
 - f. Signature Reduction Officer. See BRd 9348.
 - g. TEMPEST Control Officer. See BRd 0300.

1083. Station of Weapon Engineer Officer

1. In their role as Command Adviser the Weapon Engineer Officer is to close up with the Commanding Officer at Action Stations, Emergency Stations and as otherwise required.
2. When the ship is entering or leaving harbour and at other times when particular care is necessary for the safe navigation of the ship, their station is to be that approved by the Commanding Officer, who is to be guided in their choice by the need for efficient communication between Command and the Weapon Engineer Officer and between Weapon Engineer Officer and ship staff available for emergency repairs. Should the Weapon Engineer Officer consider that their presence is necessary elsewhere they are to proceed but ensure that the Commanding Officer is informed immediately of their whereabouts.

1084–1090. Unallocated

SECTION V - THE WEAPON ENGINEER OFFICER (SUBMARINES)

1091. General Duties

1. The Weapon Engineer Officer is responsible to the Commanding Officer for:
 - a. The material performance, availability, maintenance, safety, security and custody of all Combat System equipment, tactical weapons (including small arms), weapon discharge equipment, communications, navigation and command systems and additionally in SSBNs, the Strategic Weapon System. The responsibility for sensors and communications extends to the associated masts, periscopes, streamable aerials and includes the equipment specific operating gear, and associated control and indication.
 - b. The material performance and maintenance of all office machinery and non-operational Information Systems; users are responsible for safe custody and security.
 - c. The efficient operation of the Combat System and, in SSBNs, the Strategic Weapon System.
2. They are the head of the weapon engineering department and, as such, are responsible to the Commanding Officer for the administration, organisation and good order of their department, but through the Executive Officer for matters involving general organisation of the submarine, discipline and welfare of personnel and co-ordination of training. They are the professional Weapon Engineer Officer and are to ensure that proper professional engineering standards and practices are adhered to in the upkeep and maintenance of weapon systems. Primary and secondary purposes, accountability, authority and key tasks are detailed in Chapter 2 of BR 300(SM).
3. The boundaries of responsibility between the weapon and marine engineering departments are defined in BR 3000.
4. To ensure that a high standard of efficiency is achieved they are to work closely with the Marine Engineer Officer and the Executive Officer. In particular they are to:
 - a. Ensure that all are aware of the operational requirements and performance of the equipments for the material state of which they are responsible.
 - b. Inform the Executive Officer of any defects which affect performance.
 - c. Ensure that the Executive Officer is kept informed of the requirements for system maintenance, so that maintenance and repair programmes are effectively co-ordinated with operational programmes.
 - d. Be aware of the operational training programme and assist the Executive Officer in the co-ordination of all weapon system training and drill and the collective training of the officers and men who man the submarine's operational equipment, making available such of their staff as required.
 - e. Make full use of the assistance which warfare officers are required to give them.

BRd 2

5. They are the professional weapon system adviser to the Commanding Officer and as such are to be aware of the capabilities and use of the system and, in SSBNs, Strategic Weapon System matters.
6. In SSBNs they are adviser to the Commanding Officer on strategic weapon target plans, conduct of launch instructions and nuclear weapon release procedures.
7. They are the Signature Reduction Officer, responsible for ensuring that the submarine operates with the minimum signature through an effective Signature Reduction Organisation, calling on the assistance of the Executive and the Marine Engineering Officer, as required.
8. In collaboration with the Executive Officer they are to ensure that any detectable emission from any equipment undergoing maintenance, repair or test takes place only in accordance with the detectable emission policies currently in force.
9. On all occasions before getting underway they are to satisfy themselves that all radio, navigational and other equipment for which they are responsible, including internal communication (except those of which the Marine Engineering Department is the sole user) necessary for the safe conduct of the submarine when underway, is functioning correctly and they are to make a report to this effect to the Commanding Officer.

1092. Nuclear Weapon Safety

1. The Weapon Engineer Officer of a SSBN is the professional advisor to the Commanding Officer on nuclear weapon safety matters.
2. He/She is responsible to the Commanding Officer for the integrity of the nuclear weapon and all supporting systems and equipment ensuring that the system is operated within extant instructions and guidance.
3. He/She is responsible in conjunction with the Executive Officer for training and exercising the crew in emergency procedures required to combat all hazards that can arise from the nuclear weapon.
4. He/She is responsible to the Commanding Officer for the correct implementation of Safety Management Arrangements pertaining to nuclear weapon system.

1093. Explosives and Safety

1. They are responsible to the Commanding Officer as the Explosives Responsible Officer for:
 - a. The safety of all small arms and explosives including pyrotechnics on board and, in SSBNs, nuclear weapons. They become responsible from the moment of transfer or loading, as defined in approved standard operating procedures.

- b. Ensuring that the regulations contained in JSP 862 Part 2, MoD Maritime Explosive Regulations (Submarines) and, in SSBNs, the regulations contained in Chief of Strategic System Executive CB 8890 Instructions for the Safety and Security of the Trident II D5 Strategic Weapon System in HM Submarines are complied with at all times.
 - c. Ensuring that only the authorized standard procedures are used in all handling, operating, testing, and maintenance of all weapons and weapon systems.
2. They are responsible to the Commanding Officer for ensuring that the ship's organisation complies with the regulations in JSP 862 part 2, MoD Maritime Explosive Regulations (Submarines).
 3. They are to advise the Commanding Officer of the possible effects of any abnormal incident involving weapons, particularly strategic missiles or re-entry systems.
 4. In SSBNs, they are the Nuclear Weapon Safety Officer.

1094. Watertight Integrity

1. They are responsible to the Commanding Officer for the watertight integrity of hull openings that form part of weapon systems.

1095. Training

1. They are responsible to the Commanding Officer for the state of training of all personnel maintaining weapon systems and for the state of training of all personnel operating those weapon systems for which they are responsible for efficient operation. In carrying out this responsibility they are to ensure that the Executive Officer is kept informed of the state of training of the operators and availability to the weapon system so that the latter can carry out their co-ordinating duties for weapon system training. They are to assist the Executive Officer in the training of all weapon engineering department personnel to fulfill their role in the command and attack teams (including blind pilotage).
2. They are responsible, in conjunction with the Executive Officer, for training and exercising the crew in the emergency procedures required to combat all hazards that can result from the weapons carried.

1096. Administration

1. They are to ensure that the equipment, stores, spare gear, test equipment, and documentation, for which they or members of their department are responsible, are properly accounted for and mustered.
2. On being relieved, they are to ensure that the transfer of stores, fittings, spare gear, drawings and books in the charge of the weapons department, is carried out in accordance with current instructions. They are to carry out an inspection, in the presence of the relieving officer, of all major items of equipment in their charge.

1097. Weapon Practice

1. The Weapon Engineer Officer in conjunction with the Executive Officer is responsible to the Commanding Officer for:
 - a. The planning of, and preparation for, weapon practice firings.
 - b. Arranging and conducting briefings for weapon practices.
 - c. The conduct of weapon practice firings and simulated firings or countdowns.
 - d. Ensuring that any recommendations arising from analysis of weapon practices, which are within their powers to accomplish, are acted upon.