

EXAMINATION FOR CERTIFICATES OF COMPETENCY  
(DECK) REGULATIONS, 1963

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L.N. 79 of 1963

MERCHANT SHIPPING ACT, 1962  
(1962, No. 30)

**Examination for Certificates of Competency (Deck)  
Regulations, 1963**

In exercise of the powers conferred by section 427 of the Merchant Shipping Act, 1962 and of all other powers enabling him in that behalf the Minister of Transport hereby makes the following regulations—

CHAPTER I  
Introductory

- |   |   |
|---|---|
| Citation.                               | 1. These regulations may be cited as the Examination for Certificates of Competency (Deck) Regulations, 1963.   |
| Commence-<br>ment.                      | 2. Part II of these Regulations shall come into force on the 1st day of July, 1963 and Part I on a date to be appointed by the Minister by Notice in the Gazette.   |
| Application<br>and inter-<br>pretation. | 3. These Regulations shall apply to examinations for certificates of competency required to be held by the deck officers and crew of merchant ships in compliance with the Merchant Shipping (Manning) Regulations, 1963 and in these regulations the term "Act" shall mean the Nigerian Merchant Shipping Act, 1962. |

PART I—FOREIGN-GOING OR HOME TRADE CERTIFICATES

CHAPTER 2

General

- |                                   |  |
|-----------------------------------|--|
| Non-<br>Examination<br>of Aliens. | 4. No candidate other than a Commonwealth citizen may be examined for any certificate of competency in Nigeria. The onus of proving nationality in any case of doubt shall lie on the candidate. This regulation may be waived at the discretion of the Government Inspector of Shipping and with the agreement of the Consular or Diplomatic Officer of the nation concerned.   |
| Mode of<br>Application.           | 5. Candidates for examination shall apply therefor only on the official application form obtainable from any examiner. The form, properly completed, together with the necessary fee specified in the Merchant Shipping (Fees) Regulations, 1963 and any testimonials, discharges, first aid certificates, watch-keeping certificates, radar observer certificates or sight test certificates or any other documents which may be required by the examiner shall be lodged with the examiner at the proposed place of examination. If the examiner is satisfied that the candidate's application and service are in order, he will inform the candidate as to the time and place of the examination. |
| Doubtful<br>cases.                | 6. Where a candidate is in doubt as to whether or not his service or other qualifications comply with the requirements of these regulations he may submit all his certificates, discharges, testimonials, etc., to any examiner for a decision. If the said examiner cannot come to a decision on the matter and the candidate is not satisfied, the papers may be sent to the Government Inspector of Shipping, Federal Ministry of Transport and Aviation, Lagos, whose decision shall be final.   |



7. A candidate's eligibility for examination shall depend (amongst other things) upon the amount of service afloat. The particulars of such service shall be accurately stated upon the application form and supported by such documentary evidence as may be required by these regulations or by the examiner. The amount of service laid down in these regulations for each grade of certificate shall be the minimum that can be accepted, and unless a candidate can prove that he has the total amount required he shall not be admitted to the examination.

Service  
afloat.

8. If a candidate offers a gratuity to any officer of the Ministry of Transport he will be regarded as having committed an act of misconduct and will be rejected and will not be allowed to be examined again until a period of at least 12 months has elapsed. He shall also be liable to prosecution under the provisions of the Criminal Code Act.

No gratuities  
to be offered.

9. Candidates who, after having served afloat, are found guilty of gross misconduct on board, will be required to produce satisfactory proofs of two years subsequent service and good conduct afloat before they can be allowed to sit any examination under these regulations, unless the Government Inspector of Shipping, after investigation, should see fit to reduce that time.

Unsatisfac-  
tory conduct.

10. All candidates must prove to the satisfaction of the examiners that they can speak and write English sufficiently well to perform the duties required of them by the various grades of certificates of competency.

Literacy.

Provided that this regulation shall not apply to candidates for certificates of competency as Power Driven Small Craft Operators, or that the test for literacy in the case of candidates for certificates of competency as Rivermen shall be confined to proof that they can read simple orders in English.

11.—(1) A candidate who passes the examination, will receive as provisional certificate of competency from the examiner which will be valid for a period of not more than two months. A copy of such provisional certificate will be sent to the Government Inspector of Shipping who will in due course issue a proper certificate through the examiner. If successful candidates wish their proper certificates delivered through an examiner at a place other than the place of examination they should so inform the examiner at the time of receiving the provisional certificate and the examiner will endorse such certificate accordingly.

Issue of  
certificates.

(2) A candidate who is partially or wholly unsuccessful will receive from the examiner a form stating the full facts. Such candidates must retain this form and reproduce it to the examiner when he next presents himself for examination.

12. If, after a candidate has passed the examination, it is discovered that his service is insufficient or that he was at the time otherwise unqualified to sit the examination, the certificate of competency to which he would have become entitled by passing the examination will not be issued, or, if already issued, will be withdrawn. The candidate shall, if his service entitles him to a lower grade certificate, be given the option of receiving that lower grade certificate. Otherwise the superior grade certificate will not be granted until the candidate has made up his deficiency in service and has been re-examined in all the subjects, but the Government Inspector of Shipping may, at his discretion, dispense with such re-examination.

Insufficient  
service.

Provided, that where the Government Inspector of Shipping is satisfied that the error in the calculation of the candidate's service did not occur through any fault of or wilful misrepresentation by the candidate himself, he may either return the fee to him or retain it as a deposit made by the candidate.

Certificates  
of Service.

13.—(1) A person who has attained the substantive rank of Lieutenant in any of the Commonwealth Navies, and is able to prove seven years' sea service, may apply to be granted a Certificate of Service as Master of a foreign-going ship without examination. This certificate will not entitle the holder to go to sea as Master or Mate of a Home Trade passenger ship.

(2) Temporary and Reserve Officers are not eligible for the grant of a certificate of service.

(3) The application form should be completed and disposed of in the manner set out in the directions on the reverse side of the form.

(4) Ratings of the Royal Nigerian Navy who have completed their engagement with the Navy and have successfully passed the requisite test for the gradings herein specified may, on application therefor, be granted certificates of competency without examination in the following manner—

Leading Seaman .. .. .	Quartermaster's Certificate.
Petty Officer (Seaman's Branch) ..	Rivermaster's Certificate.

Examination  
of Naval  
Officers and  
Ratings.

14.—(1) An officer holding a certificate of Service as Master may be examined for a certificate of competency as Master (Foreign-going) or Master (Home Trade) without producing evidence of sea service and without taking the examination for a lower grade certificate.

(2) Service in sea-going ships of Commonwealth Navies performed by other naval officers and by ratings may be accepted as qualifying sea service for the purpose of admission to examinations if the examiner is satisfied by his valuation of such service having regard to the grade of certificate required.

(3) Applications for examination should be made in accordance with the provisions of Regulations 5 and 6 except that the naval officers and ratings referred to in sub-paragraph (2) of this regulation should also furnish a statement of service together with testimonials on the proper Naval forms in respect of all sea-going appointments and of the last active appointment. Ratings should furnish their Naval Service Certificate.

Replace-  
ment of  
certificate.

15.—(1) If the holder of any certificate issued under these regulations loses the same, or if it is stolen, destroyed or defaced, it may be replaced upon application to any examiner who will issue a replacement under the same conditions as are laid down in Regulation 11, on payment of the fee specified in the Merchant Shipping (Fees) Regulations, 1963. Provided that in the case of a lost or stolen certificate, the holder reports the incident to the Police and accompanies his application with a certified extract from the Police Station Diary. In the case of a defaced certificate, that certificate must be returned to the examiner along with the application.

(2) No replacement fee will be charged if the holder can prove that his certificate was lost through shipwreck or fire on board ship.

(3) If the holder of a certificate changes his name, he must at once return his certificate to an examiner for renewal in the new name.

16.—(1) Recipients of Government awards can have their certificates of competency suitably endorsed if they submit evidence of the award together with their certificate to the Government Inspector of Shipping, either direct or through an examiner or a mercantile marine shipping office.

Endorsement  
of certificate

(2) Certificates of Competency may also be endorsed with other qualifications relating to the merchant service such as—

(a) possession of a Certificate of Competency in radio telegraphy or radio telephony ;

(b) possession of Radar Maintenance or Radar Observers Certificate ;

(c) possession of a qualification in compass adjustment ;

(d) possession of a qualification in signalling, other than that required to be part of the examination for a Certificate of Competency.

17.—(1) No candidate for a Certificate of Competency as Second Mate (Foreign-going) or Mate (Home trade) shall be issued with his certificate unless or until he produces a Certificate of Proficiency as Radar Observer issued by an authority approved by the Government Inspector of Shipping.

Radar  
Observer  
Certificate

(2) A Radar Observer Certificate shall be valid for the purposes of this paragraph if obtained after the completion of three years' qualifying sea service (either in Home trade or Foreign-going ships).

18.—(1) Every candidate for a Certificate of Competency as Master or Mate of any grade must produce a certificate issued by the St. John Ambulance Association, the St. Andrew Ambulance Association, the St. Patrick's Ambulance Association, the British Red Cross Society or any other authority approved by the Government Inspector of Shipping to the effect that he has passed the examination in First Aid to the injured.

First Aid  
Certificates.

(2) The certificate must be an adult certificate, *i.e.*, obtained by the candidate when sixteen years of age or more, and the qualifying examination or re-examination must have been passed not more than three years before the date of the examination for the Certificate of Competency.

19.—(1) Every candidate for a Certificate of Competency as Master or Mate of any grade must pass the Ministry's sight tests before he can receive a certificate. If circumstances make it necessary for him to be examined in navigation and seamanship before undergoing the sight tests, such examination will be cancelled if he fails to pass either of the sight tests. A pass certificate in the sight tests is valid for three months.

Sight Test.

(2) No candidate for a Certificate of Competency as Rivermaster, Quartermaster, Boatswain or Riverman shall be required to take the Ministry's sight tests, but such candidate shall, before the examination, produce a certificate signed by a Government Medical Officer to the effect that his sight is normal both in colour and vision.

Provided that in any case where the Government Inspector of Shipping considers it necessary to do so he may require any such candidate to take the Ministry's sight test.

(3) Detailed information about the conduct of the Ministry's sight tests is given in Appendix II to these regulations.

Appendix II.

## CHAPTER 3

## Grades of Certificates, Age Limit and Qualifications Required.

Validity of  
certificates.

20. A Foreign-going certificate of any grade permits the holder, if a Commonwealth citizen, to act as Mate on home trade passenger vessels.

Second  
Mate (FG).

21. A candidate for examination shall not be less than 20 years of age and shall have had at least four years service at sea on a foreign-going ship or such equivalent service as is provided for in Chapter 4 of these regulations.

First Mate  
(FG).

22. A candidate for examination shall be not less than 21 years of age and shall have had at least five years service at sea on foreign-going ships, or such equivalent service as is provided for in Chapter 4 of these regulations. This period of sea service must include not less than one year on foreign-going ships in a capacity not lower than third of three watch-keeping officers whilst holding a Certificate of Competency as Second Mate (Foreign-going).

Master  
(FG).

23. A candidate for examination shall not be less than 23 years of age and shall have had at least seven years service at sea on foreign-going ships or such equivalent service as is provided for in Chapter 4 of these regulations. This period of service must include—

(i) not less than two years on a foreign-going ship in a capacity not lower than third of three watch-keeping officers whilst holding a certificate of competency not lower than Second Mate (Foreign-going); and

(ii) not less than 18 months on a foreign-going ship in a capacity not lower than third of three watch-keeping officers whilst holding a certificate of competency not lower than First Mate (Foreign-going), or equivalent sea service as provided by Chapter 4 of these regulations.

Mate (HT).

24. A candidate for examination shall not be less than 20 years of age and shall have had at least four years service at sea (*see* Chapter 4).

Master  
(HT).

25. A candidate for examination shall not be less than 23 years of age and shall have had at least five years service at sea (*see* Chapter 4) of which—

(i) one year must have been in a capacity not lower than that of First Mate of a home trade or coasting vessel, whilst holding a certificate of competency as Mate (Home Trade) or Second Mate (Foreign-going);

(ii) one and a half years must have been in a capacity not lower than Second Mate of a home trade or coasting vessel in charge of a watch whilst holding a certificate of competency as Mate (Home Trade) or Second Mate (Foreign-going);

(iii) one and half years must have been in a capacity not lower than Third Mate in charge of a watch on a foreign-going vessel whilst holding a certificate of competency as Mate (Home Trade) or Second Mate (Foreign-going); or

(iv) two and a half years must have been in a capacity not lower than Third Mate in charge of a watch in a home trade or coasting ship whilst holding a certificate of competency as Mate (Home Trade) or Second Mate (Foreign-going).

Voluntary  
examination  
in signalling.

26.—(1) All persons who hold, or have passed an examination for, or are candidates for, a certificate of competency in any grade may undertake the voluntary examination in signalling (*see* Appendix III).

Appendix  
III.

(2) If the candidate passes the examination, the fact that he passed and the place of the examination will be endorsed on his certificate of competency.



(3) Candidates may be examined at any place where examinations for certificates of competency are held upon submitting the official application form and paying the fee of £6.

(4) No fee, however, will be charged for this examination if it is taken at the same time as the examination for a certificate of competency.

#### CHAPTER 4

##### Rules for Estimating Sea Service

27.—(1) Qualifying sea service, except as hereinafter provided, must be performed in the Deck Department. Sea Service.

(2) For the purpose of these regulations, sea service is reckoned from the commencement of the voyage to its termination. Certificates of discharge for service in the foreign trade will generally be accepted as proof of sea service, but certificates of discharge for service in the home or coasting trades may be required to be sent to the proper authority (Registrar, Superintendents, etc.) for verification. Where service in charge of a watch is required, certificates of watch-keeping service must also be produced (*see* Appendix IV).

(3) For all certificates of competency as Master or Mate, the qualifying service usually required is service performed in ordinary trading vessels. While the regulations provide for the acceptance in part of certain kinds of non-trading service, specifically non-trading service which is not provided for in the regulations cannot be accepted as qualifying service without the special sanction of the Government Inspector of Shipping.

28. Sea service in whatever trade it may be performed, cannot be regarded as qualifying for examinations for certificates of competency, unless it can be verified by reference to the articles of the ship in which it is performed. For example, service claimed by testimonial or otherwise to have been as Mate when the actual rating shown by the articles was that of boatswain will not be accepted where an officer's service is required. Service determined by actual position on board.

29.—(1) Watch-keeping service performed on a ship on foreign-going articles will be accepted in full if the vessel has proceeded outside home trade limits during the course of the voyage. Service in foreign-going vessels.

(2) Where a voyage has been made within the home trade limits either as a preliminary to, or at the finish of, the foreign-going voyage, the home trade voyage shall be considered to be part of the watch keeping service in the case of an officer who has served throughout the voyage.

(3) Where such officer serves on the home trade voyage but does not serve on the foreign voyages, the home trade voyage shall be considered to be a part of the foreign-going voyage for the purpose of calculating watch-keeping service, provided always that the total allowance for such a voyage or voyages does not exceed an overall maximum of three months for a First Mate or six months for a Master.

30.—(1) Where watch-keeping service is required to be performed as equivalent to not lower than third of three watch-keeping officers on a foreign-going ship, such service may be performed in the foreign, home or coasting trade. Service with added responsibility.

(2) Candidates for certificates of competency as Masters (Foreign-going) whose watch-keeping service is performed in a higher capacity than second or third watch-keeping officer whilst holding a First Mate's certificate shall have such service reckoned—

(a) if as first watch-keeping officer next in seniority to the Master, at one and one half times of actual service.

(b) If as first watch-keeping officer not next in seniority to the Master, or as second of two watch-keeping officers, at one and one fifth times actual service.

Service in the home and coasting trades.

31.—(1) The equivalent rates for service in the home or coasting trades for admission to examinations for Certificates of Competency (Foreign-going) are as follows :—

(a) Service in home trade vessels of 1,600 tons gross and over shall count in full.

(b) Service in vessels of 500 tons gross and over, but less than 1,600 tons gross, shall count in full where the most distant ports visited are at least 500 miles apart. Where the most distant ports are less than 500 miles apart, service will count at two-thirds rate.

(c) Service in vessels of less than 500 tons gross in the home trade shall count at two-thirds rate.

(d) Service in a capacity lower than first watch-keeping officer on regular runs between near neighbouring ports which take less than two watches will not be accepted for foreign-going certificates.

(2) Candidates for certificates of competency as First Mate (Foreign-going) or Master (Foreign-going) must have actual foreign-going experience as provided for in regulations 22 and 23 (i).

(3) Such service as is indicated in (1) (a) to (d) above shall count at full rate for home trade certificates.

Service in ships trading exclusively abroad.

32. Service in ships trading exclusively abroad may be accepted either in full or at two-thirds rate on the same basis as that set out for home or coasting trade in Regulation 31. Ships so employed will not normally be regarded as foreign-going ships unless the most distant ports visited are at least 500 miles apart.

Officer's Service.

33. Service as First Mate means service as the officer next in authority to the Master. Service as junior or auxilliary First Mate or as First Mate under a "Chief Officer" will count for qualifying purposes as equivalent to service as the second of three watch-keeping officers if the more senior officer is a watch-keeper. The facts in each case must be clearly established by the candidate's certificates of watch-keeping service. For the definition of "watch-keeping service" see Regulation 34.

Watch-keeping service.

34.—(1) Where watch-keeping service is required, candidates must prove by production of certificates that during the whole period claimed they have been in full charge, or in effective charge, of a watch for not less than eight hours out of every 24 hours service claimed.

(2) "Effective charge of a watch" means responsibility for the watch, but does not preclude occasional supervision by a senior officer, provided that the senior officer does not at any time take charge of the watch. Where, however, the senior officer does take charge, the watch is doubled and the fact should be noted for entry in the Certificate of Watch-keeping Service.

(3) An officer who is the junior of two officers keeping doubled watches during a voyage may count towards the qualifying service for First Mate under Regulation 22 and for Master under Regulation 23 (i) two-thirds of the watch-keeping time so served up to a maximum of nine months (i.e., 13½ months actual service).

(4) The exact nature of a candidate's service must be clearly established by one or more certificates signed by the Master in the form set out in Appendix IV.

Appendix  
IV.

35. Officer's service, to be recognised as qualifying service for the purposes of examination, must be performed with the requisite certificate as required by these regulations or with a certificate accepted as the equivalent thereof under the provisions of section 9 of the Act. The officer's service performed by a candidate who has been duly promoted during the course of a voyage (*see* Regulation 36) or who, as a result of service in vessels plying between ports abroad, has been unable to obtain the necessary certificates, may, however, be recognised, provided that it is satisfactory in other respects.

Service in  
possession of  
certificate.

36. Whenever a man has, from any cause, in the course of the voyage, been regularly promoted from the rank in which he first shipped on the occurrence of a vacancy and such promotion, with the ground upon which it has been made, has been properly entered in the Articles and the Official Log Book, he will receive credit for his service in the higher grade for the period subsequent to his promotion.

Promotion  
during  
voyage.

37. Where a candidate has performed his sea service in more than one capacity, or partly in the foreign trade and partly in the home trade, proportionate allowances will be made for each kind of service, provided that in other respects such service complies with the requirements of these regulations.

Mixed  
service.

38. The testimonials of service of Commonwealth officers and seamen serving in foreign vessels which cannot be verified must be confirmed by the Consul or some other recognised official authority of the foreign country, or by the testimony of some credible person having personal knowledge of the facts to be established. The production, however, of such proofs will not necessarily be deemed sufficient. Each case will be decided on its own merits.

Evidence  
of service in  
foreign  
vessels.

39. Candidates whose service has been performed in capacities other than apprentices, midshipmen, cadets, deckboys, ordinary or able seamen—e.g., men who have served as carpenter or sailmaker or as cook in small vessels where cooking is only a part of a man's duty—must satisfy the examiner that they have, during the whole time claimed, performed deck duties in addition to their own particular work. These facts may possibly be established by the production of satisfactory certificates from the Masters with whom the candidate has served. Such service will only be accepted as equivalent to two-thirds of the time served as ordinary deck hand. In the absence of satisfactory evidence, the applicant will be required to perform additional service in the capacity of seaman. Service as cook (under conditions other than the above) or as steward or purser or in the engine room will not be accepted.

Service as  
carpenter  
cook, etc.

40.—(1) If a candidate has been engaged on articles as a deck rating, and has served as both deck rating and as a radio officer, two-thirds of such service may be counted as qualifying service. The candidate must, however, prove that, during the whole period claimed, he performed deck duties in addition to the duties of a radio officer.

Service as  
radio officer.

(2) If a candidate has been engaged on articles as a radio officer, and has performed deck duties in addition, two-thirds of such service may be counted as qualifying service, provided that the candidate can produce a certificate

from the Master to the effect that he has performed deck duties for a reasonable proportion of time each day and that he has not spent more than two hours a day on regular wireless watch.

(3) If a candidate has been engaged on articles as a radio officer, and has only served as such, one-quarter of his service may be counted as qualifying service, up to a maximum of 12 months qualifying service.

#### Apprentices.

41.—(1) The whole of the time claimed under indentures of apprenticeship will be accepted as actual sea service to qualify under Regulation 21 for a Second Mate's certificate, provided that—

(a) the indentures have not been cancelled through some fault of the candidate, and they are endorsed by the owner or Master to whom he was bound to the effect that he has performed his service faithfully during the time he remained as apprentice; and

(b) the candidate has served at sea four-fifths of the time claimed, that is to say, has not spent more than one-fifth of the time in home ports.

(2) In cases where an apprentice is qualified for examination before the expiration of his indentures, e.g., where he has had training ship or other sea service prior to being bound, which, together with his actual time as apprentice, makes up the required four years, or where his indentures are for a period of more than four years, a letter from the owner or Master will be accepted in place of the endorsement referred to above.

(3) In the event of the candidate being short of the required four-fifths of the time claimed as apprentice out of Nigeria, he will be required to show sufficient additional sea service, either as seaman or junior officer, to make up four-fifths of the time claimed.

(4) The general concession to apprentices set out above cannot, however, be taken to cover a case in which, during a large part of the period of apprenticeship, the vessel on which the apprentice is serving has been laid up in a foreign port. The proportion of the period of apprenticeship which can be accepted as qualifying service in such a case depends on the individual circumstances and each case will be considered on its merits. The examiners will make as generous an allowance for such service as they properly can, but they cannot forego the essential condition that candidates for certificates of competency must have sufficient experience of actual service at sea.

#### Midshipmen and cadets.

42. The whole of the time served as midshipman or cadet under indentures will be accepted subject to the same conditions as those laid down for apprentices. Similar considerations apply even when the candidate is not bound by indentures, provided that the service as midshipman or cadet has been continuous, that on the date of the termination of the period of service claimed in this capacity the candidate was on articles or attending at a recognised school (See Section D of Appendix 5) and that he can comply with the requirements of these regulations in serving or making up the four-fifths period at sea during the time claimed.

#### Promotion during Apprenticeship or Cadet service.

43. Where an apprentice, cadet or midshipman, whether bound by indentures or not, is promoted to the grade of uncertificated junior officer in the same company, for the last year of apprenticeship or cadetship, such officer's service will be treated, for the purposes of assessing sea service, as cadet or apprentice service.



44.—(1) One half of the time served after the age of 14 on board an approved training ship will be allowed to count as qualifying sea service, provided that the candidate can produce from the appropriate authority a satisfactory certificate testifying to his good conduct and proficiency up to the time of leaving the ship, subject to a given limit in the case of each training ship and to the condition that the total remission of sea service in respect of attendance at training ships and approved schools (*see* Regulation 45) shall never exceed twelve months.

(2) A list of approved training ships and the amount of time allowed in each case is given in Part A of Appendix 5.

45.—(1) Time spent after the age of 14 at a school for nautical training conducted on premises ashore may be allowed to count in some proportion as service at sea provided that :—

(a) The school is recognised by the Minister.

(b) The candidate produces a satisfactory certificate as regards conduct and proficiency from the authorities of the school on leaving it.

(2) The schools to which these arrangements may apply are of three kinds *viz.* :—

(a) Schools at which a boy resides and receives training for a period of years : or courses of not less than one academic year, in navigation and seamanship, after the age of 16 at nautical residential training colleges. The maximum remission of sea service that will be allowed in respect of attendance at such a school will be fixed at the time of approval ; it will never exceed twelve months.

(b) Courses in navigation and seamanship at junior technical schools or similar non-residential institutions, which boys attend before going to sea ; the maximum remission of sea service in these cases will be fixed at the time of approval ; it will never exceed six months.

(c) Senior courses in navigation at technical or other similar non-residential schools which candidates attend after completing the whole or the larger part of the service required to qualify for examination for a Second Mate's certificate or for a Mate's (Home Trade) certificate ; the maximum remission of sea service in these cases will be fixed at the time of approval ; it will never exceed three months.

(3) In the case of schools of class (2) (a) and (b), the certificate must show whether or not the boy has completed the course.

(4) In the case of schools of classes (2) (b) and (c), the certificates which the candidate produces (paragraph (1) (b) above) must, in addition, testify to the candidate's continuous and regular attendance at all the approved classes and, also, in the case of schools of class (2) (c), must state the total number of hours during which he has attended at the school.

(5) A candidate who, at different times, has attended two or more approved schools will be allowed a remission of sea service in respect of attendance at each of them, subject to the condition that the total remission of sea service in respect of attendance at approved schools and training ships will never exceed 12 months.

(6) Time spent at approved schools will not be accepted in lieu of any part of the officer's service required to qualify a candidate for examination for a certificate as First Mate or Master ; nor in lieu of sea service required in consequence of failure in the oral examination.

(7) A list of approved schools of nautical training is given in Appendix 5.

Service  
in Naval  
Training  
establish-  
ments.

46. Time spent at approved Naval Colleges or other establishments will, subject to the conditions laid down in Regulation 45, be permitted to count as equivalent to one half of the same time spent in service at sea, and a similar allowance will be made in respect of time spent on courses on shore after promotion to Acting Sub-Lieutenant, subject to the condition that the total remission of sea service in respect of all time spent on shore shall not exceed twelve months. Time spent on shore training will not be accepted in lieu of watch-keeping service.

Service in  
Naval  
Reserve.

47. Sea-going and/or shore based service of officers of the Commonwealth Naval Reserve with the Commonwealth Navies will be allowed to count as qualifying watch-keeping service for certificates of competency as follows, subject to a maximum allowance of six months for each grade of certificate :—

(a) Time spent by Midshipmen on board sea-going vessels will, if accompanied by a good report, be accepted in full for the Second Mate's certificate, provided that a reasonable proportion of such time has been spent at sea and that not more than four weeks have been spent on leave.

(b) Time spent by officers (other than Midshipmen) up to and including the rank of Lieutenant when undergoing training will, subject to a good report, be accepted in full if sea-going service, or at half rate if shore based service, for the First Mate's or Master's certificate.

(c) Service of officers appointed for temporary duty in the Fleet in lieu of Naval Officers, or of officers serving in the Fleet on mobilisation or in a special emergency, will be accepted in full if sea-going, or at half rate if shore based, for the First Mate's or Master's certificate.

Service  
in the Air  
Force.

48.—(1) Officers with certificates as Second Mate or First Mate who hold short service commissions in the Commonwealth Air Forces will, subject to good report, be allowed to count towards qualifying sea service for certificates of competency as First Mate or Master respectively, half the time spent by them under instruction in aviation at a flying training school or with a home defence unit and half the time in a fleet air arm or naval co-operation unit, up to a maximum of six months in all for each grade of certificate.

(2) Apprentices and seamen holding short service commissions in the Commonwealth Air Forces will, subject to good report, be allowed to count towards qualifying sea service for a Second Mate's certificate half the time spent by them under instruction in aviation at a flying training school or with a home defence unit and half the time spent in a fleet air arm or naval co-operation unit, up to a maximum of six months in all, provided that the total remission of sea service in respect of Air Force service and time spent on a shore training ship or in school shall not in any event exceed twelve months.

Service in  
fishing or  
pilot  
vessels.

49. Service performed exclusively in deep sea fishing vessels (i.e., vessels exceeding 100 feet in length and regularly engaged in deep-sea fishing) or in pilot vessels will count at two-thirds rate towards qualifying for a certificate of competency as Second Mate, but will count in full for certificates of competency as Mate (Home Trade). In addition to such service in deep sea fishing vessels or in pilot vessels, a candidate must, however, prove at least 12 months service in ordinary trading vessels in the foreign, home or coasting trades. In this regulation "pilot vessels" means vessels regularly on pilotage duty outside the port to which they are attached.

50.—(1) Service performed in tugs outside inland waters will be accepted as sea service for the purpose of qualifying a candidate for a Mate's or Master's certificate for home trade ships only.

Service in  
tugs,  
R.A.S.C.  
vessels, etc.

(2) Service performed in foreign-going tugs will be accepted in full (subject to the provisions of Regulation 32) for the purpose of qualifying a candidate for a foreign-going certificate on the following conditions—

— (a) that, of the qualifying service for a Second Mate's certificate, at least one year must have been served in ordinary trading ships in the foreign, home or coasting trade;

(b) that, of the qualifying service performed between the Second Mate's and Master's examinations, at least one year must have been served in a qualifying capacity in an ordinary trading vessel in the foreign-going trade of which the equivalent of six months foreign-going service must have been performed before qualifying for examination as First Mate.

(3) Service performed in R.A.S.C. vessels employed outside inland waters will be accepted as sea service to qualify a candidate for a Mate's or Master's certificate for home trade ships only. This service will not be accepted towards qualifying a candidate for a foreign-going certificate, except in very exceptional circumstances and then only with the express permission of the Government Inspector of Shipping.

51. Service in power driven hopper barges and dredgers will, subject to the provisions of Regulation 52 be allowed to count towards qualifying a candidate for a Mate's certificate for home trade ships only, provided that the candidate can prove at least two years service in an ordinary trading vessel in either the home, coasting or foreign trade. Service in hopper barges and dredgers will not be accepted as officer's service towards qualifying a candidate for a Master's certificate.

Service in  
hopper  
barges and  
dredgers.

52. Service performed on inland waters, no matter of what size, will not be accepted as qualifying service towards examinations for Master's or Mate's certificate of any grade.

Service on  
inland  
waters.

53. A candidate, part of whose qualifying service has been performed in cable ships or Fleet Auxiliaries (other than freighting tankers), will be required to produce, in addition to the usual evidence of sea service, a statement or certificate from the owners of the ship showing the amount of time actually spent at sea. If the time so spent constitutes or exceeds two-thirds of the total time on articles, this total time will be accepted in full as qualifying service, but in the event of the actual sea service falling below this proportion, the deficiency must be made up by additional service at sea before the total time on articles can be accepted in full as qualifying service.

Service in  
cable ships or  
fleet  
auxiliaries.

54. Service performed in sea-going powered vessels used as lighthouse tenders, buoyage and/or survey vessels and belonging to a recognised light and buoyage authority, will be accepted as sea service for the purpose of qualifying a candidate for a home trade certificate only. If such a candidate wishes to be examined for a foreign-going certificate he must show in addition to this service at least twelve months' service in an ordinary trading vessel for each grade of certificate.

Lighthouse,  
buoyage, and  
survey  
vessels.

## PART II—INLAND WATERS CERTIFICATES

## CHAPTER 5

## General

Non  
examination  
of Aliens.

55. On and after the date of promulgation of these regulations, no candidate other than a Commonwealth citizen may be examined for an inland waters certificate of competency in Nigeria. The onus of proving nationality in any case of doubt shall lie with the candidate. This regulation may be waived at the discretion of the Government Inspector of Shipping and with the agreement of the Consular or Diplomatic Officer of the nation concerned.

Application  
of Chapter 2  
Photographs  
to be  
supplied.

56. Chapter 2 of these regulations (*i.e.*, Regulations 4 to 19) shall apply except where otherwise stated to certificates of competency in respect of inland waters as they apply to foreign-going or home trade certificates, except that in addition to the requirements of Regulation 5, inland waters candidates will be required to provide three passport sized photographs of themselves.

## CHAPTER 6

## Grades of Certificates, Age Limits and Qualifications Required

P.D.S.C.  
Operator.

57. A candidate shall not be less than 18 years of age and must have served for at least two years in canoes or similar craft.

Riverman.

58. A candidate shall not be less than 21 years of age, and shall have served as a deck rating on powered craft for a period of at least two years. In these regulations the term "powered craft" does not include power driven small craft.

Quarter-  
master.

59. A candidate shall not be less than 21 years of age and shall have served as a deck rating on powered craft for a period of at least four years.

Boatswain.

60. A candidate shall not be less than 23 years of age and shall have served as quartermaster on powered craft while holding a certificate of competency as such, for at least two years.

Rivermaster.

61. A candidate shall not be less than 25 years of age, must hold a certificate of competency as a Quartermaster and have served in such capacity for not less than four years after obtaining such certificate; or, hold a certificate of competency as Boatswain and have served in such capacity for not less than two years after obtaining such certificate.

Application  
of regulation  
26.

62. Regulation 26 of these regulations shall apply to holders of inland waters certificates of competency as it applies to holders of foreign-going and home trade certificates.

Service  
afloat.

63. Where service is required to be performed to qualify for examination for a certificate of competency, such service must be performed afloat. No service ashore or in charge of laid up craft will be accepted.

## PART III.—EXAMINATIONS

## CHAPTER 7

## Success and Failure in the Examinations

64. For written work, the candidate will be furnished with sheets of blank paper on which he will be required to answer in a clear and legible hand the questions on the question paper, and to start each answer by writing in the margin the number of the question to which it relates.

Answer  
Papers.

65. To pass in a written paper, a candidate will be required to obtain the appropriate percentage pass in the subjects shown in the following tables and also to obtain 70 per cent of the total marks for all subjects. The time and marks allotted for each written part of the examination for each grade of certificate will be as follows :—

Pass marks  
written  
papers.

(1) *Second Mate (Foreign-going)*

				Percentage	
		Time	Marks	Pass	
(a) General Ship Knowledge ..	..	3 hrs.	200	—	
(b) Chart Work ..	..	2 hrs.	200	70	
(c) Practical Navigation ..	..	3 hrs.	200	70	
(d) Mathematics ..	..	2 hrs.	150	50	
(e) Principles of Navigation ..	..	2 hrs.	150	50	
(f) English ..	..	1½ hrs.	100	50	
			1,000	70	

(2) *First Mate (Foreign-going)*

(a) Practical Navigation ..	..	3 hrs.	200	70	
(b) Chart Work ..	..	2 hrs.	150	70	
(c) Ship Construction ..	..	3 hrs.	200	50	
(d) Meteorology ..	..	2 hrs.	100	—	
(e) Ship Maintenance ..	..	3 hrs.	200	50	
(f) Magnetism and Electricity ..	..	2 hrs.	150	—	
			1,000	70	

(3) *Master (Foreign-going)*

(a) Practical Navigation ..	..	3 hrs.	200	70	
(b) Magnetic Compass ..	..	3 hrs.	200	50	
(c) Ship Construction ..	..	3 hrs.	200	50	
(d) Shipmaster's Business ..	..	2 hrs.	150	50	
(e) Engineering and Radio Aids ..	..	3 hrs.	150	—	
(f) Meteorology ..	..	2 hrs.	100	—	
			1,000	70	

(4) *Mate (Home Trade)*

(a) Chart Work ..	..	2 hrs.	150	70	
(b) Practical Navigation ..	..	3 hrs.	150	70	
(c) Ship Knowledge ..	..	2 hrs.	150	50	
(d) Essay ..	..	1½ hrs.	100	—	
			550	70	



(5) *Master (Home Trade)*

					Time	Marks	Percentage Pass
(a)	Chart Work..	..	..	..	2 hrs.	150	70
(b)	Practical Navigation	..	..	..	2 hrs.	150	70
(c)	Stability ..	..	..	..	2 hrs.	200	50
(d)	Compass Deviation	..	..	..	1½ hrs.	100	—
(e)	English ..	..	..	..	1 hr.	100	—
						<hr/>	<hr/>
						700	70

(6) *Other Inland Waters Certificates.*—These are purely oral examinations except that candidates will be required (subject to the provisions of Regulation 10) to demonstrate to the satisfaction of the examiner their ability to read and write English.

Partial  
Passes.

66.—(1) A pass in either the written, orals or signals part of the examinations will remain valid for a period of six months, and if the candidate passes in all parts during this period he will be granted a certificate of competency. If more than six months have elapsed since the candidate passed any part of the examination, he will be required to take that part again. In this respect, attention is drawn to Regulation 11 (2); if the candidate cannot produce the requisite partial pass or failure form he will be required to sit the whole examination again.

(2) Candidates failing in the oral part of an examination for a certificate of competency through serious weakness in practical knowledge may, at the examiner's discretion, be required to perform further service afloat before being examined again. Such service will not exceed six months and may be performed in any capacity on deck.

(3) In the case of a second or subsequent failure in the written or oral parts of the examination, or in both such parts, two months must elapse from the date of the last examination failed before the candidate can be re-examined.

67. Candidates for any grade of certificate should proceed to the oral examination whether or not they have passed in the written part. A candidate who does not proceed to the oral examination at the time appointed will be regarded as having failed in both parts unless he produces a medical certificate or other satisfactory evidence of his inability to attend the oral examination.

Signalling.

68. A candidate for any grade of certificate in which signalling is required as part of the examination may take the signalling examination at any time up to six months before or after the date on which he presents himself for the written and oral parts of the examination. If he passes before taking the main part of the examination, such pass will be valid for six months, but if he does not pass until after taking the main part of the examination he will not be granted a certificate of competency until a pass in signals has been achieved. If the signal portion of the examination is taken separately the special fee of £3-0s-0d must be paid for each attempt.

Correction  
by tables.

69. In the Principles of Navigation paper for Second Mates (Foreign-going) the correction of altitudes by total correction tables will not be allowed. Every correction must appear on the papers of the candidate.

Candidates  
may use own  
method.

70. Candidates will be allowed to work out the various problems according to any method which they have been accustomed to use, provided that such method is correct in principle.

71.—(1) When making calculations for obtaining a ship's position, candidates are expected to work to 0.2 of a minute of arc and to the nearest second of time.

Degree of  
precision  
required

(2) The method of calculation used in obtaining a position line should be capable of giving an answer within one nautical mile.

(3) In calculation of compass errors, bearings and courses, the answer should be worked out to within 0.5 of a degree.

(4) In calculating the correction to apply to soundings, it will be sufficient if the candidate's answer is within half a foot of a precise result.

72. In answering questions on the tentative method of compass adjustment, the candidate may be tested by Beall's Compass Deviascope.

Compass  
deviation.

73. In the examination on Rule of the Road, the examiner will test the candidate's knowledge of the sense and intention of the Rules of the Collision Regulations. Mere ability to repeat the Rules word for word will not suffice to ensure the candidate's passing, nor will the lack of it necessarily entail failure, provided that the examiner is satisfied that the candidate grasps the full significance, content and practical application of the Rules. Examiners will not ask for the content of the Rules by their number, but by the subject with which they deal, and they will discourage the use by candidates of verses as aids to memorising the Rules. Candidates will not be placed in the position of handling a sailing ship but they will be required to show their ability to recognise a sailing ship's lights and to know a sailing ship's possible manoeuvres according to the direction of the wind.

Rule of the  
Road.

74. A candidate will not be allowed to undergo examination for the same grade of certificate in successive weeks. When a candidate fails, the candidate may ask the examiner when it will be convenient for the examiner to re-examine him.

Time to be  
re-  
examined.

## CHAPTER 8

### Regulation Concerning the Conduct of the Examinations

75. The examinations will begin each day at a time appointed by the examiner. A luncheon interval will be given each day, generally of one hour's duration sometime between noon and 2 p.m. As far as possible, candidates will be given ample notice of the day and time of their oral examination.

Time.

76. Candidates must appear punctually at the examination room at the time appointed. If candidates appear after the commencement of the examination they will not be allowed to sit that part of the examination then in progress.

Punctuality.

77. No person other than those whose duties require them to be present will be allowed in the room during the examination and no Instructors will be allowed on the premises.

No  
strangers to  
be present.

78. Before the examination begins, the tables or desks will be cleared of all scraps of paper and books (other than those permitted in the examination room).

Loose paper  
and books.

79.—(1) The following tables and books will be supplied by the Ministry at the examination rooms :

Use of book  
and tables.

Nautical Tables (including logarithm tables)—Norrie (full edition) or Burton's.

Alt-Azimuth Tables—Burwood ; Davis.

Admiralty Tide Tables—European and Pacific Ocean.

Abridged Nautical Almanac.

(2) Candidates who wish to use tables other than the above may bring such tables into the examination room, on condition that they submit them to the examiner for scrutiny and approval before the examination begins. Such tables must contain no manuscript notes ; if they do the candidate will be deemed to be guilty of misconduct and will not be allowed to sit the examination except under the provisions of Regulation 9. Subject to the examiner's approval, no restriction will be placed on the use of any tables, but candidates must understand the theory on which the tables are based and such tables must be capable of giving an answer within the required limits of accuracy. When tables other than those supplied by the Ministry are used in answering a question, the name of the tables and a note of what is actually obtained from them should be stated on the candidate's answer paper.

Instruments.

80. All instruments necessary for use in the examinations are supplied by the Ministry, but candidates will be expected to supply their own drawing instruments and slide rules which the examiner may examine to ensure that no notes are inscribed thereon or concealed within the container. If a slide rule is used, a note to this effect should be entered on the candidate's answer paper.

Unauthorised books, etc.

81. Candidates are forbidden to bring books or papers of any kind whatever, other than nautical tables, into the examination room. If this regulation is infringed, the offender will be regarded as having failed and he will not be allowed to present himself for re-examination for a period of three months ; and if such books or papers prove to contain notes which would materially assist the candidates to pass the examination he will be regarded as being guilty of misconduct and will not be re-examined except under the provisions of Regulation 9.

Injury to books, etc.

82. If a candidate defaces, blots, writes in, or otherwise injures any book or form, or damages any instrument belonging to the Ministry, his service papers will be retained until he has replaced the damaged book, document or instrument. He will not be allowed to remove the damaged book, document or instrument and will be regarded as having failed.

Leaving room or building.

83. No candidate may leave the examination room without permission and without giving up the paper on which he is engaged. In no circumstances will a candidate be allowed to leave the building while the examination is proceeding. A candidate who breaks this regulation will be regarded as having failed.

Silence.

84. Silence must be kept in the examination room.

All work to be shown.

85.—(1) No candidate will be allowed to work out his problems on waste paper or to write on the blotting paper supplied for his use. A candidate who breaks this regulation will be regarded as having failed.

(2) A sheet of blotting paper will be issued to each candidate with the first examination paper and it must be returned each day to the examiner when the last paper is completed. The examiner will be careful to see that the blotting paper has not been used by the candidate for conveying information to other candidates or used in solving problems. All work, except sketches, must be in ink.



86.—(1) In the event of any candidate being discovered referring to any unauthorised book or paper, or copying from another, or accepting assistance or information from another, or communicating in any way with another, during the time of examination, or copying any part of the problems for the purpose of taking them out of the examination room, he will be regarded as having failed and will not be allowed to present himself for re-examination for a period of six months.

(2) A candidate guilty of a second offence of this kind will not be allowed to present himself for re-examination until 12 months have elapsed.

87. Any candidate violating any of these regulations, or being guilty of insolence to the examiner, or of disorderly or improper conduct in or about the examination room, will render himself liable to the postponement of his examination or, if he has passed, to the detention of his certificate for such period as the Government Inspector of Shipping may direct.

Penalty for  
breach of  
rules.

## APPENDIX 1

### PILOT SIGNAL

The following signals, when used or displayed together or separately, shall be deemed to be signals for a pilot :—

#### IN THE DAYTIME.

1. The International Code Signal G signifying "I require a pilot".
2. The International Code Signal PT signifying "I require a pilot".
3. The Pilot Jack hoisted at the fore.

#### AT NIGHT.

1. The pyrotechnic light, commonly known as a blue light, every fifteen minutes.
2. A bright white light, flashed or shown at short or frequent intervals just above the bulwarks for about a minute at a time.
3. The International Code Signal 'PT' by flashing.

If a master of a vessel uses or displays, or causes or permits any person under his authority to use or display, any of the pilot signals for any purpose other than that of summoning a pilot, or uses or causes or permits any person under his authority to use any other signal for a pilot, he shall for each offence be liable to a fine not exceeding twenty pounds.

## APPENDIX 2

Regulation 19

### SIGHT TESTS

#### DETAILS AS TO THE CONDUCT OF THE TESTS

The purpose of these tests is to ensure that the candidate's eyesight is sufficiently good to enable him to pick up and identify correctly the lights of distant ships at sea. Experience has shown that for this purpose he must be able to reach certain minimum standards both of form and colour vision.

The tests employed are two ; a letter test and a lantern test, details of which are given below. The letter test is a test of form vision only, and the lantern test is a test of form and colour vision combined.

The tests will be conducted under the strict personal supervision of the Examiner, who will keep a record of all mistakes made by the candidate both in the letter test and in the lantern test.

A candidate who holds a Certificate of Competency as Master or Mate, will not be required to be examined in the lantern test.

During the examination in the sight tests candidates will not be allowed to use spectacles, contact lenses, or glasses of any kind, or any other artificial aid to vision. They will, however, have the option of using either eye separately or both eyes together.

#### A.—LETTER TEST

1. The first test which the candidate is required to undergo is the letter test conducted on Snellen's principle by means of sheets of letters. Each sheet contains 7 lines, the 5th, 6th and 7th lines corresponding to standards 5/10, 5/7.5 and 5/5 respectively.

2. *Standard of vision required.*—Every candidate will be required to read correctly five of the six letters in the sixth line and four of the seven letters in the seventh line, at a distance of 16 feet from the eye.

3. *Method of testing.*—Artificial illumination will be used in preference to daylight owing to the impossibility of securing uniformity where the latter is used. Where suitable dark rooms are available, the test sheets will be hung on a wall at a height of five or six feet from the floor, with two electric light bulbs each of 40 watts placed horizontally and suitably screened so that the light falls directly on two lines of letters on the sheet.

The test room will be moderately illuminated and care will be taken to ensure that there are no glaring lights or bright objects in the candidate's field of vision. Extreme contrast between the illuminated test card and the background will be avoided.

If a suitable dark room is not available, the test sheets will be hung on a wall at the required height in a good light, but not in direct sunlight.

When the candidate has taken up the correct position, one of the sheets will be exposed, and he will be asked to read the letters on the sheet from left to right, beginning at the top and going downwards.

If, at the conclusion of the test, the candidate is found to reach the required standard, he will be considered to have passed and he will then proceed to the lantern test unless he holds a certificate of competency.

4. *Failure.*—(a) If the candidate fails to reach the standard required on the first sheet, he will be tested with at least four sheets and the following alternatives explained to him :—

(i) He may break off the examination and present himself for re-examination in not less than three months, in which case a certificate of failure will be issued to him ; or

(ii) He may proceed to the lantern test. In this case, a record of all mistakes made in the letter test and all mistakes, if any, made in the lantern test will be forwarded to the Government Inspector of Shipping who will decide whether the candidate has passed or failed in form vision.

(b) Failure to pass the letter test is due to some defect in form vision which is sometimes curable. Whenever, therefore, a candidate fails to pass this test, he will be advised to consult an ophthalmologist with a view to ascertaining the nature of the defect in his form vision, and whether it is curable.

5. Care will be taken by varying the order of the test sheets and by every other means to guard against the possibility of any deception on the part of the candidate.

#### B.—LANTERN TEST

6. *Apparatus.*—A special lantern and a mirror is provided for this test. The test is conducted in a room so darkened as to exclude all daylight.

The lantern will be placed directly in front of the mirror, so that the front part of the lantern is exactly ten feet from the mirror, and it is in such a position that the lights reflected in the mirror show clearly when viewed by the candidate on the left of the lantern.

7. *Darkness adaptation.*—If a candidate makes mistakes at the beginning of the lantern test, he will be kept in a completely or partially darkened room for at least a quarter of an hour and will then begin the test again.

8. *Method of testing.*—The lantern supplied for the examination is so constructed as to allow one large or two small lights to be visible, and is fitted with 12 glasses of three colours—red, white and green. At the beginning of the examination the candidate will be shown a series of lights through the large aperture and he will be required to name the colours as they appear. Care will be taken in showing the white light to emphasise the fact that this light is not pure white. If a candidate makes a mistake in calling this light “red”, a proper red light will be shown immediately after and his attention directed to the difference between the two.

After a series of lights through the large aperture has been shown, two complete circuits and one broken circuit with two small aperture will be made, the candidate naming the colours of each set of two lights from left to right.

9. *Success or failure.*—(a) If a candidate does not make any mistake in the lantern test after passing the letter test, he will be deemed to have passed the whole examination and the Examiner will issue a certificate to that effect.

(b) If, with either the large aperture or the two smaller apertures of the lantern, a candidate mistakes red for green or green for red, he will be considered to have failed in the lantern test.

(c) If a candidate makes any other mistake with the lantern, *i.e.*, if he calls white “red” or red “white” or confuses green and white, his case will be submitted to the Government Inspector of Shipping and he will be told that the decision as to whether he has passed or failed, or must undergo a further examination, will be communicated to him in due course. Pending the receipt of the Government Inspector of Shipping’s instructions, a candidate for a certificate of competency will only be allowed to proceed with such examination on the express understanding that the latter examination will be cancelled in the event of his failure at the sight tests.

(d) Candidates will be notified on the appropriate form of their success or failure, or otherwise that their case has been referred to the Government Inspector of Shipping for special consideration.

(e) A candidate who fails to pass the local lantern test may not be re-examined locally, unless the Government Inspector of Shipping decides that he may be re-examined after three months. The certificate issued to the candidate will state whether or not he may be re-examined locally.

#### C.—SPECIAL EXAMINATIONS AND APPEALS

10. *Special examination : Referred cases.*—If in any case the Government Inspector of Shipping decides that a special examination is necessary before a candidate can be passed or failed, the candidate will be informed of the date, time and place of the special examination. No additional fee will be charged for such examination.

11. *Special examination : Appeal cases.*—A candidate who fails to pass the local lantern test may appeal for a special examination on payment of a fee of two guineas, which will be returned to him if he passes. The Ministry will not make any payment whatever to a candidate who, upon his own application, receives a special examination, unless the candidate passes the special examination or unless, in the event of his failure, the Ministry consider that the particular circumstances justify such payment.

12. *Examining Board.*—The special and appeal examinations will be conducted by the Government Inspector of Shipping or his Deputy, together with the Ministry's specialist adviser on eyesight.

13. *Punctual attendance at special and appeal examinations.*—Candidates who are referred for a special examination, or who appeal from the result of the local lantern tests, are notified by the Government Inspector of Shipping of the time at which they should attend for special examination. They are expected to inform the Government Inspector of Shipping whether or not they will be able to attend at that time.

Considerable inconvenience will be caused by candidates informing the Government Inspector of Shipping that they will attend at the time stated but failing to keep the appointment. Any candidate who, after informing the Government Inspector of Shipping that he will attend, fails to appear at the time appointed will be liable to have his examination postponed indefinitely and also, if an appeal candidate, will forfeit the appeal fee of two guineas and will be required to deposit a further fee of the same amount before further arrangements can be made for his special examination.

14. *Final appeals.*—Where, during the course of a special examination, a candidate, who has been referred or who has appealed, is found to have a permanent defect in his eyesight such as to render him unfit for a sea career, he will be finally rejected and will not be allowed to be examined again in the sight tests on any future occasion. This, however, is subject to the proviso that if the candidate is still dissatisfied, it will be open to him, if he so desires, to present himself for a second special examination on payment of a fee of five guineas, provided that he brings with him a friend to witness the examination who may be an ophthalmologist. Such examination will be conducted

by the Government Inspector of Shipping or his Deputy, together with the Ministry's specialist adviser on eyesight. The special appeal fee of five guineas will not be returnable unless, in special circumstances, the Ministry see fit to refund it. In no case will this fee be refunded to candidates under 14 years of age.

15. *Candidates not finally rejected at a special examination.*—In certain cases a candidate may not be finally rejected at a first special examination. Such candidates will have the option of taking a second special examination as indicated in paragraph 14 or of being specially re-examined after an interval of three months on payment of a fee of two guineas. If they are successful, the appeal fee of two guineas will be refunded.

### APPENDIX 3

#### EXAMINATION IN SIGNALLING

Reg. 26

The examination in Signalling will in all cases begin with an examination in the International Code, including Morse Flashing and Semaphore.

2.—(1) *Morse Flashing and Semaphore.*—Speeds and Tests for Voluntary Examination. Candidates for the voluntary examination in Signalling will be required to attain a minimum speed of 12 words a minute in Semaphore and 10 words a minute in Morse Flashing; the average length of a word is taken as 5 letters.

(2) The Morse Flashing test will consist of a Test message, followed by a Spelling message of 25 words.

(3) In the examination in Morse Flashing, the candidate will be first required to make a Test message, followed by a Spelling message of 25 words to be read by the candidate.

(4) The same procedure will be observed in the Semaphore test, except that, as a Test message is not given, the candidate will be required to make a Spelling message of 50 words, and then to read a message of 50 words made by the Examiner.

3.—(1) *Speeds and Tests for other Candidates.*—Other candidates will be required to attain a speed of 8 words a minute in Semaphore and 6 words a minute in Morse Flashing: The average length of a word is taken as 5 letters.

(2) The Morse Flashing test will consist of a Test Card and a Spelling message of 10 words, and the Semaphore test of a Spelling message of 25 words.

4.—(1) *Method of Signalling.*—The Semaphore messages will be made by hand flags.

(2) The Spelling message is left to the discretion of the Examiner, and may be a passage from any book or newspaper in English. The message as read by the candidate will be taken down by another candidate where possible, otherwise by a clerk, or other person as the Examiner may deem expedient.

(3) Candidates will be thoroughly tested in the various signs and the procedure of calling up, sending and answering a signal.



5.—(1) *Marks*.—In the Morse Flashing examination, marks will be allotted for the Test message in the proportion of 50/78 of a mark for each correct letter or numeral, and for the Spelling message 2 marks for each correct word or group of figures. In the Semaphore examination, 2 marks will be allotted for each correct word.

(2) Every candidate must, for a pass, gain an aggregate of at least 90 per cent of the maximum marks allotted both in making and reading in each method, *i.e.*, Morse Flashing and Semaphore.

*Note*.—The International Code of Signals, Vol. I Visual and Sound Signalling, and Vol. II Radio Signalling, may be obtained from the principal booksellers or directly from H. M. Stationery Office, London in the United Kingdom.

The attention of candidates is drawn to the fact that the Admiralty, (United Kingdom) have established Signal Schools at London, Liverpool, South Shields, Glasgow, Hull, Southampton and Cardiff, where candidates for certificates of competency can obtain instruction in Signalling free of charge.

#### APPENDIX 4

### SPECIMEN CERTIFICATE OF WATCH-KEEPING SERVICE

Reg. 34

#### FOR A FIRST MATE'S OR MASTER'S CERTIFICATE

THIS IS TO CERTIFY THAT Mr.....has served  
on the s.s.....from.....to.....  
in the capacity of \*(1st) (2nd) (3rd) Watch-keeping Officer. During this  
time Mr.....was an Officer in \* (full)  
(effective) charge of a watch for eight hours out of every twenty-four hours  
at sea, except as stated below.

Watches were not doubled at any time during the voyage.\*

Watches were doubled between the following dates and at no other times.

.....During this time Mr.....  
served as the (\* Senior) (Junior) of two Bridge-keeping Officers.†

An entry to this effect has been made in the Mate's log.

.....  
*Signature of Master*

\* Strike out the words which do not apply.

† Delete this paragraph if watches were not doubled.

## APPENDIX 5

Reg. 45

LIST OF TRAINING SHIPS AND SCHOOLS OF NAUTICAL  
TRAINING WHICH HAVE BEEN APPROVEDA. APPROVED TRAINING SHIPS QUALIFYING FOR REMISSION OF SEA SERVICE  
UNDER REGULATION 44.

H.M.S. "Worcester"

T.S. "Mercury"

T.S. "Dufferin".

Half time to count up to a maximum of twelve months.

T.S. "Arethusa"

Half time to count up to a maximum of six months.

B. APPROVED RESIDENTIAL SCHOOLS ON SHORE QUALIFYING FOR REMISSION  
OF SEA SERVICE UNDER REGULATION 45 (2) (a).

Elgin: Gordonstoun School, Elgin, Morayshire.

Liverpool: The H.M.S. "Conway" Merchant Navy Cadet School,  
Nautilus House, 6 Rumford Place Liverpool 3.

Pangbourne: Nautical College, Pangbourne, Berks.

Cardiff: Reardon Smith Nautical College, Plasmawr Road, Fairwater,  
Cardiff.Liverpool: Indefatigable and National Sea Training School for Boys,  
Liverpool. Half time to count up to a maximum of six months.Southampton: School of Navigation, University of Southampton,  
Warsash, Southampton.

Full time to count up to a maximum of nine months.

C. APPROVED CADET COURSES AT TECHNICAL SCHOOLS QUALIFYING FOR  
REMISSION OF SEA SERVICE UNDER REGULATION 45 (2) (b).

Aberdeen: Robert Gordon's Technical College, School Hill, Aberdeen.

Belfast: City of Belfast College of Technology, Belfast.

Cardiff: Welsh College of Advanced Technology, Cathays Park, Cardiff.

Dundee: Technical College, Bell Street, Dundee.

Fleetwood: Fleetwood Navigation School, Station Road, Fleetwood.

Hull: Kingston-upon-Hull High School for Nautical Training, Boulevard,  
Hull; Kingston-upon-Hull Nautical College, Boulevard, Hull; Trinity  
House Navigation Schools, Hull.Glasgow: Royal College of Science and Technology, George Street,  
Glasgow.

Greenock: Watt Memorial School, Dalrymple Street, Greenock.

Leith: Leith Nautical College, Commercial Street, Leith.

Liverpool: City of Liverpool College of Technology, Nautical College  
Department, Clarence Street, Liverpool 3.London: \*King Edward VII Nautical College, 680 Commercial Road,  
E.14; London Nautical School (Rotherhithe), Broadwall Blackfriars,  
S.E.1.Plymouth: Plymouth and Devonport Technical College, School of  
Navigation. The Technical College Tavistock Road, Plymouth.South Shields: South Shields Marine and Technical College, Westoe,  
South Shields.

Stornoway: Lews Castle College, Stornoway, Isle of Lewis.

Half time to count in each case up to a maximum allowance of six months.

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\* An additional two weeks is allowed for each term in residence at the College.

D. APPROVED SENIOR COURSES IN NAVIGATION QUALIFYING FOR REMISSION OF SEA SERVICE UNDER REGULATION 45 (2) (c).

Aberdeen : Robert Gordon's Technical College, School Hill, Aberdeen.

Auckland : School of Navigation, Ferry Building, Auckland, C.1., New Zealand.

Belfast : City of Belfast College of Technology, Belfast.

Bombay : Nautical and Engineering College, Waudby Road, Bombay.

Bristol : College of Technology, Bristol.

Cardiff : Welsh College of Advanced Technology, Cathays Park, Cardiff.

Dundee : Dundee Technical College, Bell Street, Dundee.

Fleetwood : Fleetwood Navigation School, Station Road, Fleetwood.

Glasgow : Royal College of Science and Technology, George Street, Glasgow.

Greenock : Watt Memorial School, Dalrymple Street, Greenock.

Hull : Kingston-upon-Hull Nautical College, Boulevard, Hull; Trinity House Navigation Schools, Hull.

Leith : Leith Nautical College, Commercial Street, Leith.

Liverpool : Liverpool Technical College, Central Technical School, Byrom Street, Liverpool.

London : King Edward VII Nautical College, 680 Commercial Road, E.1.

Plymouth : Plymouth and Devonport Technical College, School of Navigation, The Technical College, Tavistock Road, Plymouth.

Southampton : School of Navigation, University of Southampton, Warsash, Southampton.

South Shields : South Shields Marine and Technical College, Westoe, South Shields.

Wellington : School of Navigation, Ford Building, Courtenay Place, Wellington, C.3, New Zealand.

Half time to count in each case up to a maximum allowance of three months.

E. SCHOOLS AT WHICH COURSES LEADING TO THE ISSUE OF RADAR OBSERVER CERTIFICATES ARE HELD, QUALIFYING FOR REMISSION OF SEA SERVICE UNDER REGULATION 17.

Auckland : School of Navigation, Marine Department, Ferry Building, Auckland, C.1, New Zealand.

Bombay : Nautical and Engineering College, Waudby Road, Bombay.

Cardiff : Welsh College of Advanced Technology, Cathays Park, Cardiff.

Glasgow : School of Navigation, Royal College of Science and Technology, George Street, Glasgow.

Grimsby : Nautical Department, Grimsby College of Further Education, Orwell Street, Grimsby.

Hong Kong : Hong Kong Technical College, Wood Road, Hong Kong.

Hull : Kingston-upon-Hull Nautical College, Boulevard, Hull.

Leith : Leith Nautical College, Commercial Street, Leith.

Liverpool : City of Liverpool College of Technology, Nautical College Department, Clarence Street, Liverpool 3.

London : Sir John Cass College, Jewry Street, London, E.C.3.

Plymouth : Plymouth and Devonport Technical College, School of Navigation, The Technical College, Tavistock Road, Plymouth.

Southampton : School of Navigation, University of Southampton, Warsash, Southampton.

South Shields : South Shields Marine and Technical College, Westoe, South Shields.

Sydney : H.M.A.S. "Watson", Sydney, New South Wales, Australia.

A maximum period of one week to count unless an overall maximum remission of twelve months is being claimed.



## APPENDIX 6

LIST OF CERTIFICATES ISSUED BY GOVERNMENTS OUTSIDE THE  
UNITED KINGDOM WHICH ARE RECOGNISED AS HAVING THE SAME  
FORCE AS THOSE GRANTED BY THE MINISTER OF TRANSPORT AND  
CIVIL AVIATION IN NIGERIA

			<i>Description of Certificates</i>		<i>Certificates issued as from</i>
Canada	..	..	Master..	..	19th August, 1871
			First Mate		
			Only Mate		
			Second Mate		

Before 1st April, 1949, when the territory became part of Canada, Newfoundland issued certificates of Imperial validity :

New Zealand	..	..	Master..	..	1st May, 1872
			First Mate		
			Only Mate		
			Second Mate		

Australia	..	..	Master..	..	1st October, 1923
			First Mate		
			Second Mate		

Up to and including 30th September, 1923, certificates of Imperial validity were issued by the following States now comprised in the Commonwealth of Australia.

South Africa	..	..	Master..	..	1st July, 1928
			First Mate		
			Only Mate		
			Second Mate		

India	..	..	Master..	..	1st April, 1929
			First Mate		
			Second Mate		

Up to and including 31st March, 1929 certificates of Imperial validity were issued by the Provincial Governments of Bengal and Bombay. The Order in Council giving Imperial validity to certificates issued by the proper authority now applies equally to Pakistan, but the Government of Pakistan have not yet introduced examinations for certificates of Imperial validity.

Hong Kong	..	..	Master..	..	1st January, 1884
			First Mate		
			Only Mate		
			Second Mate		

Federation of Malaya	..	..	Master..	..	1st June, 1890
			First Mate		
			Second Mate		

Singapore	..	..	Master..	..	1st June, 1890
			First Mate		
			Second Mate		

The territories formerly known as the Straits Settlements were reconstituted by Orders in Council and now form the Colony of Singapore (1st April, 1946) and part of the Federation of Malaya (1st February, 1948). The Order in Council under which these certificates enjoy Imperial validity now applies equally to the Colony of Singapore and to the Federation of Malaya.

Republic of Ireland	..	Master..	..	..	27th May, 1954
		First Mate			
		Second Mate			
		Master (home trade)			
		Mate (home trade)			

(Except where otherwise stated, the statement above refers only to foreign-going certificates).

(Imperial validity was withdrawn from certificates of competency issued in Malta and Mauritius by an Order in Council dated 18th August, 1916).

(The relevant United Kingdom Orders in Council are those of 9th May, 1891, and 1906 No. 810, 1910 No. 823, 1923 No. 1288, 1931 No. 692, 1931 No. 693, 1931 No. 1100 and 1954 No. 640).

## APPENDIX 7

### SYLLABUSES—SEA-GOING

1. *General*—The following paragraphs show the syllabuses of examinations for the various grades of certificates.

In each paper throughout the syllabuses, questions may be set combining one or more paragraphs.

The syllabus for a higher grade in both written and orals is always to be regarded as including the syllabus of that subject (if any) for certificates of lower grades.

Candidates should demonstrate their understanding of their work by means of sketches drawn with reasonable accuracy. Answer to problems in practical navigation should, where appropriate, be accompanied by a figure drawn reasonably to scale.

In the paper on practical navigation, total correction of altitudes by means of tables may be used. In the paper on Principles of Navigation each correction must be shown separately.

The papers on Principles of Navigation and Mathematics are intended to test the candidate's grasp of fundamental technical ideas and processes required in his work at sea. Mathematical proofs of *formulae* are not required.

## SECOND MATE (FOREIGN-GOING)

## 2. PAPER 1. (WRITTEN)

## General Ship Knowledge. (3 hours)

(a) The names of the principal parts of a ship. General ideas on ship construction. The candidate will be expected to show his practical acquaintance with longitudinal and transverse framing, beams and beam knees, watertight bulkheads, hatchways, rudders and steering gear, shell plating, double bottoms and bilges, stern frame, propeller and propeller shaft, stern tube, sounding pipes, air pipes and general pumping arrangements. The stiffening and strengthening to resist panting and pounding. Cause and prevention of corrosion in a ship's structure.

(b) The meaning of the terms Block Coefficient, Displacement and Deadweight. Use of Displacement and Tons per inch scales to determine weights of cargo, etc. from draughts. Effect of density of water on draught. Fresh water allowance. The laws of floating bodies. The meaning of the terms Buoyancy and Reserve Buoyancy, General understanding of Centre of Gravity and Centre of Buoyancy and the effect of adding or removing weights. Metacentric height. The danger of slack ballast tanks.

(c) Rigging a ship for loading and discharging cargo and the use of derricks and winches. The stowage and dunnaging of cargoes including bulk cargoes. Protection against damage by sweat. Bulk oil cargoes. Conversion of weight measurement of cargo into space measurement and vice versa. Elementary ideas on the making and use of cargo plans. Ventilation systems of holds and tanks.

(d) The names functions of various parts of a ship's lifeboat. The types of construction. Capacity, buoyancy and number of persons. Care and maintenance of lifeboat equipment, lifebuoys, lifejackets, line throwing appliances, fire appliances, lights and sound signals.

## 3. PAPER 2. (WRITTEN)

## Chartwork and Pilotage. (2 hours)

(a) Given the Variation and a table of Deviations to convert True Courses into Magnetic and Compass Courses and vice versa. To find the compass course and distance between two positions. The effect of current on speed. Allowance for leeway. Given compass course steered, the speed of the ship and the direction and rate of the current to find the true course made good. To find the course to steer allowing for a current.

(b) To fix the ship's position on a chart by simultaneous cross bearings, bearing and range or by wireless cross bearings applying the necessary corrections. To fix the ship's position by bearings of one or more objects with the run between, allowing for a current and to find the distance at which the ship will pass a given point. To fix the ship's position by horizontal sextant angles.

(c) The use of clearing marks and horizontal and vertical danger angles.

(d) To find the time and height of high and low water at a Standard Port (Admiralty Tide Tables). The use of tables or diagram to find the height of tide at any given time and thence the approximate correction to be applied to soundings or to charted heights of shore objects.

(e) Candidates will be examined orally on the information given on a chart or plan, particularly about buoys, lights, depths and nature of bottom, contour lines, tides and tidal streams. Recognition of the coast. The intelligent use of Sailing Directions. Chart correction.

#### 4. PAPER 3. (WRITTEN)

##### Practical Navigation. (3 hours)

- (a) Practical problems on Plane, Parallel and Mercator Sailing.
- (b) The use of the Traverse Tables to obtain the position of the ship at any time given compass courses and errors and the run recorded by log or calculated by time and estimated speed, allowing for the effects of wind and current, if any.
- (c) To find the latitude by Meridian Altitude of the Sun or a Star. Latitude by an observation of Polaris.
- (d) From an observation of the Sun or Star near the Meridian to find the position line and the latitude through which it passes in a given longitude.
- (e) To determine the position line and a position through which it passes from an observation of the Sun or a Star out of the Meridian.
- (f) To find the ship's position at the time of the second observation by the use of position lines obtained from two different observations and thence the noon position if required.
- (g) To find the True Bearing of the Sun or Star and the deviation of the compass for the direction of ship's head.

#### 5. PAPER 4. (WRITTEN)

##### Mathematics. (2 hours)

- (a) Algebra, Addition, Subtraction, Multiplication, Division, Law of Indices, insertion and removal of brackets, Simple equations—problems. Development of Formulae, transposition and evaluation. Simultaneous equations of the first order involving two unknowns—problems. Simple Factors. Fractions. The solution of the Quadratic Equation. Graphs. Axes of reference. Co-ordinates. Construction and reading of graphical diagrams, e.g. weather statistics and displacement curves. Problems on graphs. The ideas of ratio, proportion and variation and the application to simple problems.
- (b) Common Logarithms. The practical use of logarithms to base 10; their use in simple calculations involving multiplication, division, simple powers and roots.
- (c) Mensuration. Areas and perimeters of rectangle, triangle and circle. Volumes and surface areas of box shaped bodies, cylinders, wedges and spheres. Practical applications, e.g. weight of general cargo of various shapes; volumes of holds, bunkers and tanks; weight of contents.
- (d) Practical Geometry. The construction of plane triangles. Congruence of triangles. The right-angled triangle, Exterior angle equal to the sum of the interior opposite angles. Sum of angles in a triangle. Similar triangles and ratio of corresponding sides. Parallel lines and transversal. Properties of circles, chords and tangents. Angle in a semicircle; angles subtended by any chord of a circle. Forces, resultant forces and their components. The vector diagram.

(e) Trigonometry. Measurement of angles. Circular measure. Trigonometrical ratios up to one complete revolution. Haversine. Simple relationship between ratios. Complementary and supplementary angles and their ratios. Simple Identities. Solution of right-angled and oblique-angled triangles including practical problems based thereon. The use of the Traverse Tables for solution of right-angled triangles. Elementary properties of spherical triangles. Solution of spherical triangles (given three sides or two sides and the included angle.) Solution of right-angled and quadrantal spherical triangles.

## 6. PAPER 5. (WRITTEN)

### Principles of Navigation (2 hours)

In this paper candidates may be asked to draw a figure reasonably to scale and to state the projection used.

Candidates will be required to have a general understanding of the following :—

(a) The shape of the Earth, Poles, Equator, Meridians, Parallels of Latitude. The position of a place fixed by its latitude and longitude. Direction, bearing, distance, units of measurement. Difference of latitude, difference of longitude, departure, middle latitude and meridional difference of latitude and the relationships between them. Great and small circles on a sphere. Shortest distance on the surface of a sphere between two points.

(b) The celestial sphere celestial poles, celestial meridian above and below poles, celestial equator, celestial horizon, zenith, prime vertical, circles of altitude.

(c) Solar system. The movement of the Earth and other heavenly bodies. Mean Sun. Ecliptic. First Point of Aries. Declination. Sidereal Hour Angle. Azimuth. Rising and setting of heavenly bodies. Length of day and night. Twilight. The position of a heavenly body on the celestial sphere both with and without reference to the observer, *i.e.*, Azimuth with Altitude or Declination with Sidereal Hour Angle or Local Hour Angle. Recognition of stars of the 1st Magnitude by reference to the Principal Constellations.

(d) Time, Greenwich and other Standard times. Mean time. Apparent time. Sidereal time. Equation of time. Relationship between longitude and time.

(e) Hour Angle of a heavenly body in time in arc. Greenwich Hour Angle of Sun, Moon, Planets and Aries. Sidereal Hour Angle of a star.

(f) Correction of Sextant altitudes. Dip, Refraction, Horizontal Parallax, Parallax in Altitude, Semi Diameter and augmentation.

(g) Geographical position of a heavenly body. A circle of position on the earth and its practical application, *i.e.*, position line. Intercept.

(h) Magnetic Meridian. Variation and Deviation.

(i) The simple properties of a Mercator Chart. Longitude scales. The measurement of distance. Rhumb Lines. Meridional Parts.

(j) Chronometers. Management and care, winding, tating and comparing.

## 7. PAPER 6. (WRITTEN)

English (1½ Hours)

The paper will be designed to test the candidate's ability to write clear and grammatical English with due attention to spelling, legibility and neatness. It will be in no sense a test of technical knowledge. This paper may consist of an essay, a precis or an exercise in letter writing.

## 8. ORAL AND PRACTICAL.

1.—(a) Rigging of ships. Strength of ropes including wire ropes, Rigging purchases of various kinds and knowledge of power gained by purchases. Knotting and splicing with strict reference to current practice. Seizings, rackings, chain stoppers, etc.

(b) Sending topmasts up and down.

(c) Bending, setting and taking in lifeboat sails. Management of boats under oars or sail and in heavy weather. Beaching or landing. Coming alongside.

(d) Helm Orders. Conning the ship. Effects of propellers on the steering of a ship. Stopping, going astern and manoeuvring. Turning a steamship short round. Emergency manoeuvres. Man overboard.

2.—(a) Marking and use of ordinary lead line.

(b) Use and upkeep of mechanical logs and sounding appliances.

(c) Use and upkeep of engine room and other telegraphs.

(d) Rocket and line throwing apparatus.

3.—(a) Anchors and cables and their use and stowage. Bringing a ship to a single anchor in an emergency.

(b) Knowledge of use and maintenance of deck appliances and steering gear.

(c) The use of life-saving appliances.

(d) The use of Fire Appliances including the Smoke Helmet.

4.—(a) Preparations for getting under way. Duties prior to proceeding to sea, making harbour, entering a dock. Coming alongside and securing to a buoy, with special reference to the after end of a ship.

(b) Keeping an anchor watch. Dragging anchor.

(c) Duties of officer of the watch. Use of compass to ascertain risk of collision.

5.—(a) A full knowledge of the content and application of the Regulations for Preventing Collisions at Sea. (Candidates will not be placed in the position of handling a sailing ship, but will be expected to recognise a sailing ship's lights and to have a knowledge of her possible manoeuvres according to the direction of the wind.)

(b) Distress and pilot signals ; penalties for misuse.

(c) British uniform system of buoyage ; wreck marking system.

(d) A knowledge of the contents of the United Kingdom Ministry's Book of Merchant Shipping Notices and the use of the Admiralty Notices to Mariners.



6.—(a) To read and understand a barometer, thermometer, hydrometer and hygrometer. (The instruments supplied by the Meteorological Office will be taken as standard.)

(b) To use an azimuth mirror, pelorus (bearing plate) or other instrument for taking bearings.

(c) To use a sextant for taking vertical and horizontal angles; to read a sextant both on and off the arc.

(d) To correct a sextant into which has been introduced one or more of perpendicularity, side or index errors.

(e) To find the index error of a sextant.

(f) To check chronometers by signal made by buzzer or other method; to compare two chronometers.

7. The Examiner may ask the candidate questions arising out of the written work, if he deems it necessary on account of weakness shown by the candidate.

9. SIGNALS. To send and receive signals in :—

(a) British Semaphore up to eight words per minute.

(b) Morse Code by flash lamp up to six words per minute.

(c) International Code of Signals.

#### FIRST MATE (FOREIGN-GOING)

#### 10. PAPER 1. (WRITTEN)

##### Practical Navigation (3 Hours)

This paper may include questions on the syllabus for Second Mate, extended to include Moon and Planets.

(a) To calculate the approximate time (to the nearest minute) of the meridian passage of a heavenly body; to calculate an approximate altitude for setting the sextant to obtain the Meridian Altitude of a heavenly body.

(b) To find the direction of the position line and a position through which it passes from an observation of a heavenly body near or out of the meridian.

(c) To obtain the ship's position by the combination of any two observations with or without run.

(d) To calculate the initial course and the distance on a Great Circle or Composite Great Circle track between two positions and to determine one or more positions on the track.

#### 11. PAPER 2. (WRITTEN)

##### Chart Work and Pilotage (2 Hours)

In addition to the syllabus for Second Mate, questions on the following may be asked either in the written or oral parts of this paper.

(a) Distance of sighting lights, distance from a point of land of known height.

(b) Construction and use of a line of soundings. The use of a single position line in approaching the coast. The use of Wireless Beacons.

(c) To find the times and heights of high and low water at a Secondary Port (Admiralty Tide Tables) by the use of Tidal Differences.

(d) Candidates will be examined orally on the reliability of charts. Selection of suitable points for bearings. Approaching an anchorage and entering narrow waters. Landfalls in thick and clear weather.

(e) The candidate may be examined orally or practically on the use of a Gnomonic Chart and the transfer of a Great Circle or Composite track from such a chart to a Mercator Chart and on the use of Lattice Charts.

## 12. PAPER 3. (WRITTEN)

### Ship Construction and Stability (3 hours)

(a) A general knowledge of the principal structural members of a ship. The proper names of the various parts. Midship sections of Single deck, Tween deck and Shelter deck ships and Bulk-oil carriers. Functions, construction and stiffening of watertight bulkheads, including collision bulkhead. Stern frame and stem and how secured. Rudders and the methods of attachment. Construction, stiffening and closing arrangements of hatchways. Hawse-pipes and how secured. Rivets and riveting. Testing a line of rivets. Testing of tanks and other watertight work.

(b) Stresses and strains in ships in a seaway or due to loading and ballasting. A knowledge of those parts of a ship specially strengthened to withstand such stresses or where damage by excessive corrosion is liable to occur.

(c) Ability to set out in a clear manner a report on damage sustained during a voyage.

(d) Buoyancy and Reserve Buoyancy. The righting couple when a ship is inclined by external force. Transverse and Longitudinal Metacentres. Metacentric Height. Initial Stability and its limitation to small angles of inclination. The computation of areas by Simpson's First and Second Rules and the Five-eighths Rule.

(e) Determination of Centre of Gravity of a ship in a new condition, the Centre of Gravity in the old condition being given. The effect on the position of the Centre of Gravity of adding, removing or shifting weight. Stiff and tender ships.

Change in stability during a voyage. Effect of a shift of cargo or solid ballast.

The danger of "free surface" of liquids (without proofs or calculations).

(f) Change of trim. (M.C.T.I. and C.F. given).

(g) Use of stability curves and data supplied to a ship.

## 13. PAPER 4. (WRITTEN)

### Meteorology (2 hours)

(a) The principles of the barometer, Mercurial and Aneroid. Marine Mercurial Barometer. How to read and reduce the readings to standard datum. The use of the Gold slide. Barograph.

(b) The principles of the thermometer and hygrometer and their uses at sea.

(c) The principle and use of the hydrometer.

(d) A knowledge of the distribution of mean pressure and the prevailing winds and current system of the globe. Relationship between pressure distribution and wind. Buys Ballot's Law.



(e) The characteristics of, and weather associated with the principal pressure system, e.g., anticyclones, depressions. Permanent and semipermanent anticyclones and depressions and their effects, e.g., Trades, Monsoons.

(f) Tropical revolving storms, their localities, seasons and tracks. Rules for avoiding tropical storms. Use of barometric observations at a single station in conjunction with weather signs.

(g) Water vapour in the atmosphere, evaporation, condensation, precipitation, meaning of saturation, relative humidity, formation of clouds, fog and mist.

(h) Anabatic and Katabatic Winds. Land and Sea Breezes.

(i) The Beaufort wind scale and weather notation in use at sea. Methods of estimating direction and force of wind at sea.

(j) A knowledge of the types of weather messages adopted by the International Meteorological Organisation which are available to shipping. Coding and decoding messages contained in Parts V and VI of Weather Messages for Shipping.

#### 14. PAPER 5. (WRITTEN)

Ship Maintenance, Routine and Cargo Work (3 hours)

(a) Keeping a ship's log. (Mate's log.)

(b) Organisation of crew for routine, maintenance and emergency duties.

(c) Inspection and maintenance of the ship and her equipment, e.g., bulkheads, double bottoms, deep tanks, bilges, pipelines, struts, rudder, anchors and cables and steering gear. Drainage of holds and tanks. Drydocking routine.

(d) Properties and uses of paints and other protective covering. Scaling and painting. Treatment of Wood work. Cement work.

(e) Indents and stores. Repair lists.

(f) Simple calculations of stresses in spans, derricks, topping lifts, etc. Strength of ropes, wire ropes and chains. Various types of ropes, wire ropes, slings and their uses. Purchases and power gained.

(g) Use and maintenance of cargo working gear and the organisation of cargo work. A knowledge of relevant parts of the Factory Act. General principles of cargo stowage and handling, e.g., dunnaging, ventilation and slinging. The carriage of special cargoes such as Refrigerated Cargoes, Steel Rails, Liquids in bulk, Deck Cargoes and Timber Deck Cargoes, Bulk stowage. The use of shifting boards. Separation. Precautions to be taken with solid ballast. Ventilation of different types of cargoes. Sweat—its cause and prevention.

(h) Given a cargo list, to stow a hold or holds, making a rough stowage plan, having regard to stability, behaviour of vessel in a seaway, damage and contamination of cargo and accessibility at optional ports of discharge.

#### 15. PAPER 6. (WRITTEN)

Elementary Magnetism, Electricity and the Gyro Compass

##### 1. Magnetism.

(a) A simple magnet, Poles of a magnet. The law of attraction and repulsion. The molecular theory of magnetism as applied to ferro-magnetic materials. The conception of magnetically "hard" and "soft" iron. The

shape of the magnetic field round a magnet. The meaning of the terms Intensity of Magnetisation, Magnetic Susceptibility and Permeability. (No mathematical formulae will be required.)

(b) The Earth's magnetic field. The Earth's magnetic poles. Magnetic equator. The Earth's total magnetic force. Angle of dip. Horizontal and vertical components. Magnetic variation. (No mathematical formulae will be required.)

(c) The effect of constraining a compass needle to the horizontal plane. The effect of introducing a disturbing force into the vicinity of a compass needle.

(d) The care and maintenance of different types of ship's compasses.

## 2. Electricity.

(a) A simple conception of the Electronic Theory, Current, difference of potential, resistance and their units. Ohm's Law. Effect of an electric current—(i) Heating effect. Power. The electric unit; (ii) Chemical effect. Simple cells, primary and secondary; (iii) Magnetic effect. Field due to a current. Field of a current carrying solenoid and the effect of introduction of ferro-magnetic material into such a field. Magneto-striction.

(b) The electric motor. Measuring instruments—moving coil and moving iron. Electro-magnetic induction. Movement of a conductor in a field. Variation in magnitude of a field. Effect of make and break of a current. Induction coil. Unit of Inductance. Dynamo principle—simple commutator.

(c) Electro-static field. Unit of capacity. Condenser or Capacitor.

(d) Fuses, switches and simple ships' circuits. Use of measuring instruments. How to measure current and voltage.

(e) Principal symbols used in diagrams.

## 3. Gyro-Compass.

A simple non-mathematical treatment of the following: The principle of the Free gyroscope. The effect of the earth's rotation. Tilt and drift. Precession. Gravity control. Damping.

## 16. Oral.

1.—(a) Shifting large spars and rigging sheers.

(b) The handling of heavy weights with special reference to strength of gear used.

(c) Use and care of all deck and above deck appliances and fittings—winches, capstans, windlasses, emergency steering gear and fittings used between anchor and cable locker. Hoisting in boats.

2. Anchors, different kinds; advantages and disadvantages of each. Cables and their care. Preparations for anchoring. Operation of anchoring with single anchor and use of second anchor. Clearing a foul anchor. Mooring. Clearing a foul hawse. Anchoring in a tideway and in a confined space. Slipping a cable. To carry out an anchor with boats. Getting under way.

3. (a) Coming alongside of a wharf, etc. Manoeuvring in rivers and harbours. Effects of current, wind, shallows and draught on manoeuvring.

(b) Management of steamships in stormy weather. Means to employ to keep a vessel, disabled or unmanageable, out of the trough of the sea and lessen her lee drift.

(c) To take a cast of the deep sea lead.

4. (a) An outline knowledge of the regulations concerning Life-saving Appliances.

(b) Accidents, *e.g.*, collision, running aground, accidents to hatches, leaks, fires and their treatment. Running repairs. Handling a disabled ship.

(c) A practical knowledge of the screening of ship's navigation lights.

(d) Preparations for drydocking and undocking. Use of shores, bilge blocks and bilge shores.

5. Regulations for Preventing Collisions at Sea, etc.—as paragraph 8, section 5 (Oral : Second Mate).

6. The Examiner may ask the candidate questions arising out of the written work, if he deems it necessary, on account of weakness shown by the candidate.

## 17. Signals.

1. To send and receive signals in :—

(a) British Semaphore up to eight words per minute.

(b) Morse Code by flash lamp up to six words per minute.

(c) International Code of Signals.

2. The practical use of shipborne W/T ; D/F.

## MASTER (FOREIGN-GOING)

### 18. PAPER 1. (WRITTEN)

#### Practical Navigation (3 Hours)

(a) A short recapitulation paper in Navigation on the syllabus for Second Mate and First Mate which may include Chart Work and Pilotage.

(b) The Admiralty Method of Tidal Predictions and the use of Harmonic Constants. (Admiralty Tide Tables.)

### 19. PAPER 2. (WRITTEN)

#### Magnetic and Gyro Compass (3 Hours)

A more detailed knowledge of the elementary principles of Magnetism than is required for First Mate.

(a) The inverse square law, simple problems involving unit poles. The field strength, magnetic moment of a magnet, the period of a suspended magnet vibrating in the earth's field.

(b) Magnetic Compass. The method of determination and compensation by means of components of the effects of the ship's magnetic field on the magnetic compass. The Approximate Coefficients, A, B, C, D and E and their use. Conditions which might produce Coefficients A and E. Constants Lambda and Mu. The Ship's Multiplier. Methods of obtaining a table of deviations, Analysis of a table of deviations to obtain Approximate Coefficients. To determine the deviation caused by the ship's permanent magnetism and/or induced magnetism in vertical soft iron by means of observations taken in two widely separated Magnetic Latitudes.

(c) General principles of Compass Correction and the method of correction for Coefficients, B, C and D.

The cause and effect of retentive magnetism and Gaussian error.

Siting of compasses with particular reference to the proximity of magnetic material and electrical appliances. Heeling Error, its cause, effects and the method of correction. Effect of heeling error magnets on soft iron correctors.

(d) Gyro Compass. A fuller knowledge of the theory than that required for First Mate, but mathematical proofs will not be required.

To include in addition to the above; Course and speed error. Correction for latitude. Ballistic deflection and its relation to Course and Speed Error. Rolling Error and how it is minimised.

The principal parts of a gyro compass and the repeating system. The more important fundamental differences in the construction of the better known types of gyro compasses and the methods used to eliminate or allow for the principal errors.

## 20. PAPER 3. (WRITTEN)

### Ship Construction and Stability (3 hours)

(a) A fuller knowledge of ship construction than is required for lower grades of certificates. The Scribe Board and its uses. Bending Slab and methods of bending. General structure. Keels, framing, stem, stern frame and rudder post, transverse and longitudinal girders, centre through plates, keelsons and intercostals, double bottoms, side stringers, shell plating, bulkheads, deep tanks, pillars, propeller brackets, rudders. Superstructures. Masts and derricks.

(b) Types of Vessels, *e.g.*, general traders and bulk oil carriers. Strength and construction in relation to their trade.

(c) Classification of ships, Surveys. General ideas of tonnage measurement. Freeboard and a general outline of conditions of assignment.

(d) Immediate treatment of accident damage—collision, bad weather, stranding. General ideas on welding in ship repair work. Drawing up of simple specifications. The direction of simple repairs.

(e) A fuller knowledge of Stability than is required for First Mate. Simple calculations involving volumes, moments and effects of free surface of liquids. (Proofs of formulae will not be required). Effects of bilging and flooding compartments. Permeability. Trim and moment to change trim, Stability and trim when grounding. The Inclining Experiment. Effect of beam and freeboard on stability. Practical operations to ensure ship stability at sea: Deck cargoes, homogeneous cargoes, suspended weights and cargoes liable to shift. Dangers of a ship with a heavy list and precautions when righting. Management of ballast tanks. Ballasting.

## 21. PAPER 4. (WRITTEN)

### Shipmaster's Business (2 hours)

(The legal knowledge required will not go beyond the outline of the Merchant Shipping Acts and Mercantile Law, which a shipmaster must know in order to conduct the business of a ship).

(a) Registration of ships. The Certificate of Registry and its legal significance.

(b) Certificates and other documents required to be carried on a ship, how they are obtained and the period of their legal validity. Suez and Panama Canal Certificates.

(c) Engagement, discharge and management of a ship's crew. Manning qualifications. Ship's Articles of Agreement. Wages and other remuneration. National Insurance contributions. Discipline and treatment of offences. Fines and forfeitures. Deserters, deceased seamen, engagement of substitutes.

(d) The official log book and the law relating to entries.

(e) Crew accommodation.

(f) Hygiene of ships, living spaces, holds, etc. Water. Fresh and preserved food. Procedure required on board in cases of infectious disease, illness or accident. Quarantine procedure. Fumigation.

(g) Entering and Clearing ship.

(h) Loadline marks and their general and seasonal use. Entries and reports to be made respecting free board and draught.

(i) The safety of the ship, crew and passengers. Assistance of vessels in distress and salvage. Duties in case of collision and accident.

(j) The law relating to the reporting of ice, derelict and other dangers to navigation and tropical revolving storms. Compulsory and non-compulsory pilotage.

(k) The meaning of the terms "passenger ship" and "emigrant ship".

(l) A general knowledge of shipping practice and documents with particular reference to Charter Parties and Bills of Lading, and an understanding of their principal clauses, *e.g.*, Freight, Deviation, Always Afloat, Ice, Lay-days, Demurrage, Despatch. Protests. Certificate of Seaworthiness. A simple knowledge of the law relating to carriage of cargo and the shipowners' liabilities and duties.

(m) A knowledge of the more important clauses contained in a Policy of Marine Insurance. The meaning of Average, Particular Average, General Average. Procedure in the case of General Average. Procedure at a port of refuge. Lloyd's Agents.

## 22. PAPER 5. (WRITTEN)

### ELEMENTARY ENGINEERING AND ELECTRICITY INCLUDING ELECTRONIC NAVIGATIONAL AIDS (3 HOURS)

#### 1. ENGINEERING.

(a) The meaning of the general engineering terms sensible heat, latent heat, saturated steam, super heated steam, work and power, horse power, propeller pitch, slip.

(b) A simple knowledge of the following: Types of marine boilers, coal and oil fired furnaces; procedure for raising steam. The action of the reciprocating steam engine, turbine machinery and diesel engines.

Procedure when warming up, turning, starting, stopping and reversing engines.

(c) The use of the condenser, evaporator and hot well. Use of circulating, air, feed, bilge and ballast pumps. Valve chests.

(d) Fuel consumption and economical speeds, estimation of minimum fuel consumption to complete a given voyage. Simple slip problems.

(e) A simple knowledge of the types of refrigeration systems used on board ships.



## 2. ELECTRICITY

(a) The simple alternator. Alternating current; frequency, phase relationship between two alternating quantities; effects of inductance, capacity and resistance. Resonance. Tuned circuits. The power transformer. The simple telephone and microphone.

(b) R.F. oscillations. Radiation of electro-magnetic waves in free space—frequency, velocity and wavelength and their relationship. Reception of electro-magnetic waves. Effects of the Ionosphere-ground wave, sky wave.

(c) Thermionic valves. Thermal emission. Diode valve—use as a rectifier. Triode valve, used as voltage amplifier and use as simple oscillator.

(d) Cathod ray tube—construction and action; electro-static and electro-magnetic deflection. The time base as applied to C.R.T.

## 3. ELECTRONIC NAVIGATIONAL AIDS

(a) A simple knowledge of how Radar works. Displays, range and bearing discrimination, calibration, range strobes, monitoring, spurious echoes, side lobe effects, blind sectors, anomalous propagation and weather effects. Its use as an anti-collision device and navigational aid and an appreciation of its limitations.

(b) The general principles underlying Hyperbolical Navigation. Fundamental differences between various systems.

(c) A general knowledge of ship W/T direction finding; Rotating loop and goniometer systems. Maximum and minimum signals; sense. Quadrantal error. Calibration. Sunset and sunrise effects. Land effects.

A general knowledge of shore-based W/T directional systems.

(d) The general principles of echo sounding. Methods of transmission. Timing device. The receiver. Methods of recording. Reliability of indications.

## 23. PAPER 6.—(WRITTEN)

## Meteorology.—(2 Hours)

In addition to the syllabus for First Mates :

(a) The principal cloud types.

(b) Simple ideas of air masses and fronts.

(c) Adiabatic changes in the atmosphere. Stability and instability.

(d) The frontal theory of the formation of depressions.

(e) To construct a synoptic chart (excluding fronts) from a number of coded groups as given in parts V and VI of Weather Messages for Shipping.

(f) To decode groups as given in the international analysis code (Part IV), Weather Messages for Shipping, and draw the weather map.

(g) The use of a synoptic chart or weather map for deducing the probable weather and anticipated changes at a specified point or points.

(h) The main types of floating ice and their origin. General ideas of distribution and seasonal movements. Navigation in the vicinity of ice.

(i) General points to consider in the selection of ocean routes.

## 24. ORAL

1. (a) Exceptional circumstances. Loss of rudder; shifting a damaged rudder. Construction of jury rudders. Making and launching of rafts. Collision. Leaks. Damage of all kinds. Running repairs and precautions in case of accidents. Grounding—methods of refloating. Beaching a vessel. Steps to be taken when disabled and in distress.

(b) Preservation of crew and passengers in the event of wreck. Abandoning a wrecked ship. Rockets and rocket apparatus. Communications with the shore.

(c) Assisting a vessel in distress. Rescuing crew of a disabled ship.

(d) Towing and being towed.

(e) Bad weather manoeuvres. Precautions at anchor and at sea. Use of oil. Anchoring and working anchors and cables in all circumstances. Approaching rivers and harbours and manoeuvring in them.

(f) Drydocking. General procedure and precautions to be observed. Distribution of weight. Drydocking with full cargo for inspection of propellers or shafting. Bilge blocks. Leaving the vessel water bore. Putting into port with damage to ship and/or cargo, both from business and technical points of view. Safeguarding of cargo.

(g) Prevention of fire at sea. Spontaneous combustion. Full knowledge of the use of fire appliances and the precautions to be taken in their use. Special reference to the extinguishing of oil fuel fires.

(h) Methods of fumigating holds and living spaces and safeguards in applying them.

(i) General organisation of ship's work and handling and training of crew. A knowledge of training facilities available to members of the crew.

(j) Compensation and adjustment of compasses. Demonstrations on Beall's Compass Deviascope or Instructional Binnacle.

2. Regulations for Preventing Collisions at Sea, etc. As paragraph 8, section 5—(Oral : Second Mate).

3. The Examiner may ask the candidate questions arising out of the written work, if he deems it necessary, on account of weakness shown by the candidate.

## 25. SIGNALS

To send and receive signals in :

(a) British Semaphore up to eight words per minute.

(b) Morse Code by flash lamp up to six words per minute.

(c) International Code of Signals.

MATE (HOME TRADE)

## 26. PAPER 1.—(WRITTEN)

Chart Work and Pilotage.—(2 Hours)

(a) Given the Variation and a Table of Deviations to convert True Courses into Magnetic and Compass Courses and vice versa. To find the compass course and distance between two positions. The effect of current on speed. Allowance for leeway. To find the compass course to steer allowing for a current. Given compass course steered, the speed of the ship and the direction and rate of the current, to find the true course made good.

(b) To fix the ship's position on a chart by simultaneous cross bearings, bearing and range or by wireless cross bearings, applying the necessary corrections. To fix the ship's position by bearings of one or more objects with the run between, allowing for a current and to find the distance at which the ship will pass a given point. The construction of a line of soundings. The use of a single position line approaching the coast.

(c) The use of clearing marks and horizontal and vertical danger angles.

(d) To find the time and height of high and low water at a Standard Port (Admiralty Tide Tables). The use of tables or diagram to find the height of tide at any given time and thence the approximate correction to soundings or to the charted heights of shore objects.

(e) Candidates will be examined orally on the information given on a chart or plan, particularly about buoys, lights, depths and nature of bottom, contour lines, tides and tidal streams. Recognition of the coast. The intelligent use of Sailing Directions. Chart correction.

#### 27. PAPER 2.—(WRITTEN)

##### Practical Navigation.—(3 Hours)

(a) To find the True Bearing of the Sun, and the deviation of the compass for the direction of the ship's head.

(b) To find the latitude by Meridian Altitude of the Sun.

(c) From an observation of the Sun near the meridian, to find the position line and the latitude through which it passes corresponding to a given longitude.

(d) To determine the position line and a position through which it passes from an observation of the Sun out of the meridian.

#### 28. PAPER 3.—(WRITTEN)

##### Elementary Ship Knowledge.—(2 Hours)

(a) Elementary ideas on ship construction. The candidate will be expected to show his practical acquaintance with framing, shell plating, decks, watertight bulkhead, sounding pipes and air pipes.

(b) The meaning of the terms Displacement and Deadweight. Use of Displacement and Tons per inch scales to determine weights of cargo, etc., from draughts. Effect of density of water on draught. Fresh Water Allowance.

(c) A general understanding of Centre of Gravity and Centre of Buoyancy and the effect of adding or removing weights. The danger of slack ballast tanks.

(d) A knowledge of the Factory Act in so far as it applies to ships' requirements.

#### 29. PAPER 4.—(WRITTEN)

##### English Essay.—(1½ Hours)

This paper will be designed to test the candidate's ability to write clear and grammatical English with due attention to spelling, legibility and neatness. It will in no sense be a test of technical knowledge.

## 30. ORAL

1. (a) A full knowledge of the content and application of the Regulations for Preventing Collisions at Sea. (Candidates will not be placed in the position of handling a sailing ship, but will be expected to recognise a sailing ship's lights and to have a knowledge of her possible manoeuvres according to the direction of the wind.)

(b) Distress and pilot signals ; penalties for misuse.

(c) British uniform system of buoyage ; wreck marking system.

(d) The use of the rocket apparatus.

(e) A knowledge of the contents of the U.K. Ministry's Book of Merchant Shipping Notices and the use of Admiralty Notices to Mariners.

2. (a) Marking of ordinary lead line and taking a cast.

(b) The use and upkeep of sounding appliances and logs.

(c) Use and care of engine room telegraphs.

(d) Coming to anchor, the use of two anchors. Mooring to buoys. Coming alongside and leaving a wharf. Entering and leaving a dock.

(e) Keeping an anchor watch. Dragging anchor.

(f) Care, maintenance and use of the life-saving appliances and fire appliances carried by a home trade ship.

(g) Management of boats under oars or sail and in heavy weather. Beaching or landing. Coming alongside.

3. The strength of ropes, including wire ropes. Power gained by purchases.

4. An elementary knowledge of cargo work, as given in the syllabus for First Mate (Paper 5, Section (g)).

5. (a) To read and understand a barometer, thermometer and a hydrometer.

(b) To use a sextant for taking vertical and horizontal angles and to find the index error.

## 31. SIGNALS.

To send and receive signals in :

(a) British Semaphore up to eight words per minute.

(b) Morse Code by flash-lamp up to six words per minute.

(c) International Code of Signals.

## MASTER (HOME TRADE)

## 31. PAPER 1. (WRITTEN)

## Chart Work and Pilotage. (2 Hours)

In addition to the syllabus for Mate (Home Trade), questions on the following may be asked either in the written or oral parts of this paper.

(a) Distance of sighting lights. Distance of a point of land of known height.

(b) The use of bearings obtained by ship's Wireless Direction Finder and bearings given from a Shore Station. The use of Wireless Beacons.

(c) Candidates will be examined orally on the selection of suitable points for bearings, approaching an anchorage and entering narrow waters. The reliability of charts. The use of Lattice Charts.

## 32. PAPER 2. (WRITTEN)

## Practical Navigation. (2 Hours)

This paper may include questions in the syllabus for Mate (Home Trade.)

(a) To find the true bearing of any heavenly body and the deviation for the direction of the ship's head.

(b) To find the approximate time (to the nearest minute) of the meridian passage of a star. To find the latitude by Meridian Altitude of a star. Latitude by an observation of Polaris.

(c) From an observation of a star near the Meridian to find the position line and the latitude through which it passes corresponding to a given longitude.

(d) To determine the position line and a position through which it passes from an observation of a star out of the Meridian.

(e) Recognition of stars of the 1st Magnitude by reference to the principal constellations.

## 33. PAPER 3. (WRITTEN)

## Stability and Seaworthiness. (2 Hours)

(a) The meaning of Metacentre, Metacentric height, Initial Stability, Righting lever, Centre of Flotation, Moment to Change Trim.

(b) Determination of the Centre of Gravity of a ship in a new condition, the Centre of Gravity in the old condition being given. The effect on the position of the Centre of Gravity of adding, removing or shifting weights. Stiff and tender ships. Effect of a shift of cargo or solid ballast. Cargoes liable to shift and precautions to be taken. Deck Cargoes. Ballasting. The danger of "free surface" of liquids (without proof or calculations).



- (c) The use of Stability Curves and the data supplied to a ship.
- (d) Simple trim problems.
- (e) Damage affecting seaworthiness. Temporary repairs at sea or in port. Certificates of seaworthiness.
- (f) A knowledge of the stowage required and precautions to be taken when carrying certain cargoes coastwise.

#### 34. PAPER 4. (WRITTEN)

##### Compass Deviation. (1½ Hours)

- (a) A simple knowledge of the meaning of hard and soft iron. Simple ideas of the effect of hard iron, vertical soft iron and horizontal soft iron on the deviations of the compass. The means used to compensate for these effects with special reference to home trade ships.
- (b) Care and maintenance of magnetic compasses. Siting of compasses with particular reference to the proximity of magnetic material and electrical appliances.
- (c) To find the Magnetic Bearing of a distant object from compass bearings taken on equidistant points and to construct a table of deviations.

#### 35. PAPER 5. (WRITTEN)

##### English. (1 Hour)

This paper will be designed to test the candidate's ability to write clear and grammatical English with due attention to spelling, legibility and neatness. It will in no sense be a test of technical knowledge. This paper may consist of an essay or an exercise in writing a letter or report.

#### 36. ORAL

1. Regulations for Preventing Collisions at Sea, etc. As paragraph 29 section 1 (a), (b), (c) and (e) (Oral : Mate (Home Trade)).
2. (a) Handling a ship in bad weather and when it is disabled.
- (b) Preservation of crew and passengers in the event of wreck. Abandoning a wrecked ship. Rockets and rocket apparatus. Communications with the shore.
- (c) Assisting a vessel in distress. Rescuing the crew of a disabled ship.
- (d) Effect of screws on the steering of a ship. Manoeuvring a ship in rivers and harbours.

3. (a) General knowledge of the requirements of the Merchant Shipping Acts relating to strandings, collisions or other casualties, reports to be made out in cases of death or injury, return of crew list, agreements and certificates of discharge.

(b) A shipmaster's knowledge of the law relating to loadline marks and entries and reports to be made respecting them.

(c) Entering and clearing a home trade ship.

4. Meteorology sufficient to understand the meaning of Weather Bulletins for Shipping (Coastal Areas). Visual and broadcast storm warnings.

5. The practical use of RADAR, DECCA and CONSOL.

### 38. SIGNALS.

1. To send and receive signals in :

(a) British Semaphore up to eight words per minute.

(b) Morse Code by flash lamp up to six words per minute.

(c) International Code of Signals.

2. The practical use of shipborne W/T D/F.

## APPENDIX 8

### SYLLABUSES—INLAND WATERS

#### RIVERMASTER

#### *Oral examination only :*

(a) All subjects as for Quartermaster.

(b) Ship Handling.

(c) Principles and practice of towing astern and alongside.

(d) Mooring of vessels and lighters.

(e) Meaning of "stiff" and "tender" ships and methods of correction.

(f) Elementary stowage of cargo and trim.

(g) Boat musters, organisation and training.

(h) Fire drills, organisation and training.

(i) Boat launching and handling ; buoyancy apparatus.

(j) Keeping of log books, casualty and other reports.

(k) Elementary salvage.

(l) Storekeeping and indenting.

(m) Improvising and temporary repairs.

(n) Candidate will be required to demonstrate his ability to read and write reasonably good English.

(o) Be able to read a compass in degrees and points ; the use of the compass.

## BOATSWAIN

*Oral examination only :*

- (a) All subjects as for Quartermaster.
- (b) Knowledge of paints and oils.
- (c) Principles and the use of tackles ; reeving up to three-fold purchases.
- (d) Principles of lifting heavy weights and erecting masts.
- (e) All types of standing and running rigging ; maintenance, etc.
- (f) Rope and wire splicing.
- (g) Boatwork.
- (h) Any other subject which in the opinion of the examiner appertains to the work of a Boatswain.

## QUARTERMASTER

*Oral examination only :*

- (a) The candidate will be required to demonstrate his ability to read and write English.
- (b) The meaning of common nautical terms.
- (c) Helm orders.
- (d) Lead line.
- (e) The collision regulations.
- (f) Ships lights.
- (g) Sound signals, fog signals, etc.
- (h) Ships time.
- (i) Bends and hitches.
- (j) Splicing.
- (k) Principle of purchases.
- (l) Lifesaving appliances.
- (m) Fire fighting appliances.
- (n) Launch maintenance and routine.
- (o) Ship handling.
- (p) Effects on steering of engine movements ahead and astern.
- (q) Anchoring and mooring.
- (r) Emergencies—tornado, fire, collision, man overboard, etc.
- (s) Uniform system of buoyage.
- (t) Inland waters navigation.
- (u) Elementary knowledge of International Code of Signals, especially one flag signals.

## RIVERMAN

*Oral examination only :*

- (a) Helm orders.
- (b) Navigation lights of ships.
- (c) Securing mooring lines, etc., with clove hitch, bowline, etc.

- (d) Lead line.
- (e) Sound signals, fog, etc.
- (f) Lifesaving appliances.
- (g) Fire fighting appliances.
- (h) Emergencies—tornado, fire, collision, man overboard, etc.
- (i) Uniform system of buoyage.
- (j) Collision regulations.
- (k) Inland waters navigation.

#### POWER DRIVEN SMALL CRAFT OPERATOR

##### *Oral examination only :*

- (a) Candidate will be required to demonstrate his ability to start, stop and manoeuvre his craft.
- (b) Helm orders.
- (c) Navigation lights of ships.
- (d) Lifesaving appliances.
- (e) Fire fighting appliances.
- (f) Collision regulations as applied to inland waters.
- (g) Emergencies—tornado, fire, collision, man overboard, etc.
- (h) Knowledge of regulations relating to equipment a P.D.S.C. is required to have on board.

MADE at Lagos, this 11th day of July, 1963.

MBAZULIKE AMECHI,  
*Acting Minister of Transport*

#### EXPLANATORY NOTE

These Regulations provide for the examinations for Certificates of Competency required to be held by deck officers and ratings holding responsible posts on board ship. The previous Certificates of Competency Regulations, 1959, only provided for certificates required on inland waters vessels, but these new regulations provide for ocean-going ships as well. They include such requirements as appear to the Minister to implement the various International Conventions relating to the safety and proper manning of ships.

MERCHANT SHIPPING (LIFE-SAVING APPLIANCES)  
RULES, 1963

ARRANGEMENT OF RULES

PART I—GENERAL

1. Citation.
2. Application.
3. Interpretation.
4. Revocation.
5. Classification of ships.

PART II—LIFE-SAVING APPLIANCES

6. Class I ships.
7. Class II ships.
8. Class III ships.
9. Class IV ships.
10. Class V ships.
11. Class VI ships.
12. Class VII ships.
13. Class VIII ships.

PART III—REQUIREMENTS FOR LIFE-SAVING APPLIANCES

14. Lifeboats.
15. Carrying capacity of lifeboats.
16. Motor lifeboats.
17. Mechanically propelled lifeboats.
18. Class C boats.
19. Inflatable liferafts.
20. Buoyant apparatus.
21. Marking of lifeboats and Class C boats.
22. Marking of inflatable liferafts and buoyant apparatus.
23. Lifebuoys.
24. Lifebuoy lights and lines.
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L.N. No. 80 of 1963

MERCHANT SHIPPING ACT, 1962

(1962, No. 30)

Merchant Shipping (Life-Saving Appliances) Rules, 1963

*Commencement : 11th July, 1963*

In exercise of the powers conferred by section 153 of the Merchant Shipping Act, 1962, and of all other powers enabling him in that behalf, the Minister of Transport hereby makes the following Rules—

PART I—GENERAL

1. These rules may be cited as the Merchant Shipping (Life-Saving Appliances) Rules, 1963. Citation.

2.—(1) These Rules apply to—

(a) Nigerian ships ;

(b) Other ships while they are within any port in Nigeria.

Applica-  
tion.

(2) Provided that these Rules shall not apply to—

(a) A ship by reason of her being in any port in Nigeria if she would not have been in any such port but for stress of weather or any other circumstance that neither the master nor the owner nor the charterer (if any) of the ship could have prevented or fore-stalled ;

(b) Pleasure yachts which are not passenger ships and do not exceed 15 tons burden ;

(c) Ships in respect of which there is in force an accepted safety convention certificate as defined in section 180 of the Act.

(d) Power Driven Small Craft.

3. In these Rules, unless the context otherwise requires, the following expressions shall have the meanings respectively assigned to them, that is to say— Interpre-  
tation.

“Act” means the Merchant Shipping Act, 1962.

“Buoyant apparatus” means flotation equipment (other than life-buoys and lifejackets) designed to support persons who are in the water ;

“Certified” means certified by a certificate issued under Chapter 31 of the Act ;

“Class A motor lifeboat” means a lifeboat complying with the requirements of paragraph (2) of Rule 16 of these Rules ;

“Class C boat” means a boat complying with the provisions of Rule 18 of these Rules ;

“Inflatable liferaft” means a liferaft complying with the provisions of Rule 19 of these Rules ;

“Length” in relation to a registered ship means registered length ;

“Lifeboat” means a boat complying with the provisions of Rule 14 of these Rules.

“Long international voyage” means an international voyage as defined in section 2 of the Act ;

“Mechanically propelled lifeboat” means a lifeboat (other than a motor lifeboat) complying with the provisions of Rule 17 of these Rules ;

"The Minister" has the same meaning as in Section 2 of the Act ;

"Passenger ship" means a ship carrying more than 12 passengers ;

"Passenger ship certificate" means a passenger ship's certificate issued under Chapter 31 of the Act ;

"Person" means a person over the age of one year ;

"Power driven small craft" shall have the same meaning as in Rule 3 of the Merchant Shipping (Power Driven Small Craft) Rules, 1963.

"Ship" has the same meaning as in Section 2 of the Act ;

"Short international voyage" means a short international voyage as in section 2 of the Act ;

"Tanker" means a cargo ship constructed or adapted for the carriage in bulk of liquid cargoes of an inflammable nature.

Revocation.

4. Regulations 4 to 6 and 17 to 32, and the First and Second Schedules to the Survey of Vessels (Sea-going) Regulations, 1959, and Regulation 12 of the Survey of Vessels (Inland Waters) Regulations, 1959 are hereby revoked.

Classification of ships.

6. For the purpose of these Rules the ships to which these Rules apply shall be arranged into the following Classes—

*Passenger Ships—*

Class I —Passenger ships engaged on voyages any of which are long international voyages.

Class II —Passenger ships engaged on voyages (not being long international voyages) any of which are short international voyages.

Class III —Sea-going passenger ships restricted to voyages within the territorial waters of Nigeria or to voyages between ports in Nigeria.

Class IV —Passenger ships plying on inland waters only.

*Other Ships*

Class V —Ships engaged on voyages any of which are long international voyages.

Class VI —Ships engaged on voyages (not being long international voyages) any of which are short international voyages.

Class VII —Sea-going ships restricted to voyages within the territorial waters of Nigeria or to voyages between ports in Nigeria.

Class VIII—Ships plying on inland waters only.

PART II—LIFESAVING APPLIANCES

Class I ships.

6. (1) Every ship to which this rule applies shall, subject to the provisions of Rule 43 of these Rules, be fitted, in accordance with its length, with the number of sets of davits specified in column A of the table set out in the First Schedule to these Rules ;

Provided that no ship shall be required to be fitted with a number of sets of davits greater than the number of lifeboats required to accommodate the total number of persons which the ship is certified to carry.

(2) A lifeboat shall be attached to every such set of davits.

(3) Every ship shall carry two boats attached to davits—one on each side of the ship—for use in an emergency. These boats shall not be more than 26 feet in length. They may be counted as lifeboats for the purposes of this Rule if they comply with the requirements of these Rules applying to lifeboats, except that in ships in which the requirements of paragraph (11) of Rule 34 of these Rules are met by means of appliances fitted to the sides of the lifeboats, such appliances shall not be required to be fitted to the two boats provided to meet the requirements of this Rule.

(4) Where the lifeboats carried in compliance with the foregoing provisions will not accommodate the total number of persons which the ship is certified to carry, additional sets of davits shall be fitted as far as is practicable in the circumstances to make up the deficiency. If this is impracticable, additional lifeboats sufficient to make up the said deficiency shall be carried under each or any of the lifeboats attached to davits, but shall not be carried under the two emergency boats mentioned in paragraph (3) of this Rule.

(5) The lifeboats carried in compliance with this Rule shall not be less than 24 feet in length.

(6) Where the number of lifeboats carried is 20 or more, two of such lifeboats shall be Class A motor lifeboats.

(7) Where the number of lifeboats carried is more than 13 but less than 20 one of such lifeboats shall be a Class A lifeboat and a second of such lifeboats shall be either a Class A or a Class B motor lifeboat or a mechanically propelled lifeboat.

(8) Where the number of lifeboats carried is 13 or less, one of such lifeboats shall be a Class A or a Class B motor lifeboat or a mechanically propelled lifeboat.

(9) Every Class A motor lifeboat shall be provided with the equipment specified in Rule 29 of these Rules.

(10) Every ship which does not carry two Class A motor lifeboats provided with the equipment specified in Rule 29 of these Rules shall carry portable radiotelegraph equipment which shall comply with the requirements of Rule 39 of these Rules.

(11) Every ship shall carry buoyant apparatus sufficient to support 25 per cent of the total number of persons which the ship is certified to carry.

(12) Every ship shall carry at least the number of lifebuoys determined in accordance with the following table—

<i>Length of ship in feet</i>	<i>Minimum number of lifebuoys</i>
Under 200 .. .. .	8
200 and under 400 .. .. .	12
400 and under 600 .. .. .	18
600 and under 800 .. .. .	24
800 and over .. .. .	30

(13) Every ship shall carry one lifejacket for each person the ship is certified to carry.

(14) Every ship shall carry a line-throwing appliance.

7. (1) Every ship to which this Rule applies shall, subject to the provisions of Rule 43 of these Rules, be fitted, in accordance with its length, with the number of sets of davits specified in column A of the table set out in the First Schedule to these Rules ;

Provided that no ship shall be required to be fitted with a number of sets of davits greater than the number of lifeboats required to accommodate the total number of persons which the ship is certified to carry.

(2) A lifeboat shall be attached to every such set of davits and the lifeboats so attached shall, subject to the provisions of paragraph (6) of this Rule, together provide at least the capacity specified in Column C of the table set out in the First Schedule to these Rules.

(3) Every ship shall carry two boats attached to davits—one on each side of the ship—for use in an emergency. These boats shall not be more than 26 feet in length. They may be counted as lifeboats under the same condition as laid down in paragraph 6 (3) of these Rules.

(4) Where the lifeboats carried in compliance with the foregoing will not accommodate the total number of persons which the ship is certified to carry, additional davits and lifeboats shall be provided under the same conditions as are laid down in paragraph 6 (4) of these Rules, and subject to the provisions of paragraphs (5) and (6) of this Rule.

(5) If in the opinion of the Government Inspector of Shipping the volume of the traffic so requires, the Government Inspector of Shipping may permit any ship to which this Rule applies to carry persons in excess of the lifeboat capacity, subject to any conditions he may think fit to impose ;

Provided that, if such permission is granted, such a ship shall carry lifeboats attached to davits affording accommodation for 75 per cent of the persons on board ; and shall, in addition, carry inflatable liferafts so that the total number of lifeboats together with such inflatable liferafts shall be sufficient to accommodate the total number of persons which the ship will be carrying.

(6) Where it is shown to the satisfaction of the Government Inspector of Shipping that it is impracticable in a ship of Class II to stow satisfactorily the inflatable liferafts carried in pursuance of paragraph (5) of this Rule without reducing the number of lifeboats, the Government Inspector of Shipping may permit the number of sets of davits required to be fitted and the number of lifeboats required to be attached to such davits to be reduced ;

Provided that the number of lifeboats attached to davits shall never be less than two, of which one shall be carried on each side of the ship ; and the number of lifeboats and inflatable liferafts shall always be sufficient to accommodate the total number of persons carried.

(7) The lifeboats carried in compliance with this Rule shall not be less than 24 feet in length.

(8) Motor lifeboats shall be carried in the same proportions as are specified in paragraphs 6 (6) to (8) of these Rules ;

Provided that where the number of lifeboats carried is 13 or less and the ship is, under paragraph (6) of this Rule, fitted with fewer than the minimum number of sets of davits, one of such lifeboats shall be a Class A motor lifeboat or a Class B motor lifeboat and a second shall be a Class A or Class B motor lifeboat or a mechanically propelled lifeboat.

(9) Every Class A motor lifeboat carried in compliance with this Rule shall be provided with the equipment specified in Rule 29 of these Rules.



(10) Every ship which does not carry two Class A motor lifeboats provided with the equipment specified in Rule 29 of these Rules shall carry portable radiotelegraphy equipment which shall comply with the requirements of Rule 39 of these Rules ;

Provided that in the case of any ship engaged on voyages of such duration that, in the opinion of the Government Inspector of Shipping, portable radiotelegraph equipment is unnecessary, he may allow such equipment to be dispensed with.

(11) Every ship shall carry in addition to any inflatable liferafts that may be carried in pursuance of paragraphs (5) and (6) of this Rule, inflatable liferafts sufficient to accommodate 10 per cent of the total number of persons for whom there is accommodation in lifeboats.

(12) Every ship to which this Rule applies shall carry lifebuoys determined in accordance with the table in Rule 6 (12) of these Rules.

(13) Every ship shall carry one lifejacket for each person the ship is certified to carry.

(14) Every ship shall carry a line-throwing appliance.

8.—(1) Every ship to which this Rule applies shall, subject to the provisions of Rule 43 of these Rules, be fitted with the number of sets of davits specified in the table set out in the Second Schedule to these Rules ;

Class III  
ships.  
Second  
Schedule.

Provided that no ship shall be required to be fitted with a number of sets of davits greater than the number of lifeboats required to accommodate the total number of persons which the ship is certified to carry.

(2) A lifeboat shall be attached to every such set of davits.

(3) Where the total capacity of the lifeboats will not accommodate the total number of persons carried, every ship shall carry buoyant apparatus to make up the deficiency in the said accommodation.

(4) Where it is impracticable to fit the number of davits specified in paragraph (1) of this Rule, the Government Inspector of Shipping may allow additional buoyant apparatus to be carried, but in this case the total accommodation provided by the lifeboats and the buoyant apparatus shall never be less than 125 per cent of the persons which the ship is certified to carry.

(5) The lifeboats carried in compliance with this Rule shall, where practicable and reasonable, be not less than 20 feet in length.

(6) Every ship shall carry at least eight lifebuoys.

(7) Every ship shall carry one lifejacket for each person the ship is certified to carry.

(8) Every ship shall carry a line-throwing appliance.

9.—(1) Every ship to which this Rule applies shall carry such boats, inflatable liferafts or other buoyant apparatus, sufficient to accommodate the total number of persons the ship is certified to carry.

Class IV  
ships.

(2) In addition to the requirements of paragraph (1) of this Rule, ships with a certified capacity of more than 100 persons must carry or tow one boat ;

Provided that a ship designed and operated as a ferry and used on voyages not exceeding one hour, shall not be required to carry or tow a boat.

(3) Every ship of 100 feet in length or over shall carry at least 10 lifebuoys ; if under 100 feet but exceeding 50 feet in length at least 6 lifebuoys and, if 50 feet in length or under, at least 4 lifebuoys.

(4) For the purposes of this Rule, a lifebuoy shall be deemed sufficient to support two persons.

Class V  
ships.

10.—(1) Every ship to which this Rule applies shall carry on each side of the ship lifeboats, each not less than 24 feet in length, attached to davits, and of sufficient aggregate capacity to accommodate all persons on board. In the case of tankers of 3,000 tons gross tonnage or over the number of such lifeboats on board shall not be less than four, two of which shall be carried aft and two amidships.

(2) In every ship of 1,600 tons gross tonnage or over, one of the lifeboats carried shall be a Class A or a Class B motor lifeboat or a mechanically propelled lifeboat.

(3) Every ship shall carry portable radiotelegraph equipment which shall comply with the requirements of Rule 39 of these Rules.

(4) Every ship shall carry at least eight lifebuoy.

(5) Every ship shall carry one lifejacket for each person on board.

(6) Every ship shall carry a line-throwing appliance.

Class VI  
ships.

11.—(1) Every ship to which this Rule applies of 500 tons gross tonnage or over shall carry on each side of the ship one or more lifeboats, attached to davits, which shall either be lifeboats of 24 feet in length or over of sufficient aggregate capacity to accommodate the total number of persons on board, or life boats of under 24 feet in length of sufficient aggregate capacity to accommodate a number of persons equal to the total number of persons on board plus four. In the case of tankers of 3,000 tons gross tonnage or over the number of such lifeboats shall never be less than four, two of which shall be carried aft and two amidships.

(2) Every ship of 500 tons gross tonnage or over shall carry inflatable liferafts of sufficient capacity to accommodate the total number of persons on board and so stowed that they can be readily transferred to the water on either side of the ship. Ships with 16 or more persons on board shall carry at least two inflatable liferafts.

(3) Every ship of under 500 tons gross tonnage shall carry either the equipment required by paragraphs (1) and (2) of this Rule, or—

(a) a lifeboat or Class C boat so stowed that it can readily be placed in the water on either side of the ship; and

(b) at least two inflatable liferafts of sufficient aggregate capacity to accommodate twice the number of persons on board and so stowed that they can readily be placed in the water on either side of the ship.

(4) In every ship of 1,600 tons gross tonnage or over, one of the lifeboats carried shall be a Class A or Class B motor lifeboat or a mechanically propelled lifeboat.

(5) Every ship of 500 tons gross tonnage or over shall carry portable radiotelegraph equipment which shall comply with the requirements of Rule 39 of these Rules;

Provided that, in the case of any ship engaged on voyages of such duration that, in the opinion of the Government Inspector of Shipping, portable radiotelegraph equipment is not necessary, he may allow such equipment to be dispensed with.

(6) Every ship of 100 feet in length or over shall carry at least eight lifebuoys.

(7) Every ship of under 100 feet in length shall carry at least one lifebuoy for each two persons on board ;

Provided that the number of lifebuoys so carried need never be more than eight and shall in no case be less than two.

(8) Every ship shall carry one lifejacket for each person on board.

(9) Every ship of 50 feet in length or over shall carry a line throwing appliance.

12.—(1) Paragraph (3) of Rule 11 of these Rules shall apply to ships of Class VII as it applies to ships of Class VI of under 500 tons gross tonnage. Class VII ships.

(2) Paragraphs (6), (7), (8) and (9) of Rule 11 shall apply to ships of Class VII as they apply to ships of Class VI.

13.—(1) Every ship to which this Rule applies shall carry inflatable liferafts or other buoyant apparatus sufficient to accommodate all persons on board. Class VIII ships.

(2) Every ship shall carry at least two lifebuoys.

(3) For the purposes of this Rule a lifebuoy shall be deemed sufficient to support two persons.

(4) For the purposes of sections 193 and 195 of the Act, this Rule shall be deemed to be applicable to ships of sixteen feet in length and under.

### PART III—REQUIREMENTS FOR LIFE-SAVING APPLIANCES

14. Lifeboats shall comply with the requirements specified in the Third Schedule to these Rules. Lifeboats.  
Third  
Schedule.

15.—(1) Subject to the provisions of paragraphs (2) and (3) of this Rule, the number of persons which a lifeboat shall be deemed fit to carry shall be equal to the greatest whole number obtained by dividing by ten the cubic capacity of the boat in cubic feet, determined in accordance with the provisions of the Fourth Schedule to these Rules. Carrying  
capacity of  
lifeboats.  
  
Fourth  
Schedule.

(2) The number of persons which a lifeboat is deemed fit to accommodate shall not exceed the number of adult persons wearing lifejackets for which there is proper seating accommodation arranged in such a way that the persons when seated do not interfere in any way with the use of the oars.

(3) No lifeboat shall be deemed fit to accommodate more than 60 persons unless—

(a) it is a motor lifeboat or a mechanically propelled lifeboat ; and

(b) it is fitted with means to enable persons in the water to climb into the lifeboat.

16.—(1) Subject to the provisions of paragraph (3) of this Rule, every Class A motor lifeboat shall, in addition to complying with the requirements specified in the Third Schedule to these Rules, comply with the following requirements— Motor  
lifeboats.

(a) it shall be fitted with a compression ignition engine which shall comply with the provisions of Part I of the Fifth Schedule to these Rules ;

(b) it shall be provided with sufficient fuel for 24 hours continuous operation ;

(c) it shall be capable of going astern ; and Fifth  
Schedule.

(d) it shall be capable of going ahead at a speed of at least six knots in smooth water when the lifeboat is loaded with its full complement of persons and equipment.

(2) Every Class B motor lifeboat shall, in addition to complying with the requirements specified in the Third Schedule to these Rules, comply with the following requirements—

(a) it shall be fitted with an internal combustion engine which shall comply with the provisions of Part II of the Fifth Schedule to these Rules ;

(b) it shall be adequately provided with fuel ;

(c) it shall be capable of going astern ; and

(d) it shall be capable of going ahead at a speed of at least four knots in smooth water when the lifeboat is loaded with its full complement of persons and equipment.

(3) Where in these Rules it is required that either a Class A or a Class B motor lifeboat or a mechanically propelled lifeboat shall be carried and a Class A motor life boat is in these circumstances provided, the fuel supply of that lifeboat shall be required to comply only with the requirement of subparagraph (b) of paragraph (2) of this Rule.

Mechanically  
propelled  
lifeboats.  
Sixth  
Schedule.

17. Mechanically propelled lifeboats shall, in addition to complying with the requirements specified in the Third Schedule to these Rules, be fitted with machinery which shall comply with the requirements specified in the Sixth Schedule to these Rules.

Class C  
boats.  
Seventh  
Schedule.

18. Class C boats shall comply with the requirements specified in the Seventh Schedule to these Rules.

Inflatable  
liferrafts.  
Eighth  
Schedule.

19.—(1) Inflatable liferafts shall comply with the requirements specified in the Eighth Schedule to these Rules.

(2) The number of persons which an inflatable liferaft shall be deemed fit to accommodate shall be equal to—

(a) the greatest whole number obtained by dividing by 3.4 the volume, measured in cubic feet, of the main buoyancy tubes (which for this purpose shall include neither the arches nor the thwart or thwarts if fitted) when inflated ; or

(b) the greatest whole number obtained by dividing by 4 the area, measured in square feet, of the floor (which for this purpose may include the thwart or thwarts if fitted) of the liferaft when inflated, whichever number shall be the less.

Buoyant  
Apparatus.  
Ninth  
Schedule.

20.—(1) Buoyant apparatus shall comply with the provisions of the Ninth Schedule to these Rules.

(2) The number of persons which buoyant apparatus shall be deemed fit to support shall be equal to—

(a) the greatest whole number obtained by dividing by 32 the number of pounds of iron which the apparatus is capable of supporting from its grab lines in fresh water ; or

(b) the greatest whole number of feet in the perimeter of the apparatus, whichever number shall be the less.

21. The dimensions of a lifeboat or Class C boat and the number of persons which they are fit to accommodate shall be clearly marked on them in permanent characters. The name of the ship to which they belong shall be painted on the bows.

Marking of  
lifeboats &  
Class C  
boats.

22. The number of persons which an inflatable liferaft is fit to accommodate and the number of persons which buoyant apparatus is fit to support, shall be clearly marked in permanent characters on the liferaft or apparatus as the case may be, and in the case of an inflatable liferaft on the valise or other container in which the liferaft is contained when not in use.

Marking of  
inflatable  
liferafts  
& buoyant  
apparatus.

23. Lifebuoys shall comply with the provisions of the Tenth Schedule to these Rules.

Lifebuoys.  
Tenth  
Schedule.

24.—(1) Lifebuoys carried in ships (except ships of Class IV or VIII) in accordance with these Rules shall be provided with self-igniting lights which cannot be extinguished in water on the following scale—

Lifebuoy  
lights and  
lines.

(a) ships of Classes I and II, at least half the lifebuoys and in no case less than six;

(b) ships of Class III, two lifebuoys, one on each side of the ship;

(c) ships of Classes V to VII inclusive, at least half the lifebuoys and in no case less than two.

(2) Lights provided on lifebuoys carried in tankers shall be electrically operated.

(3) In every ship to which these Rules apply one lifebuoy on each side of the ship shall be fitted with a line at least 15 fathoms in length.

25. Lifejackets shall comply with the provisions of the Eleventh Schedule to these Rules.

Lifejackets.  
Eleventh  
Schedule.

26. Line-throwing appliances shall comply with the provisions of the Twelfth Schedule to these Rules.

Linethrowing  
appliances.  
Twelfth  
Schedule.

#### PART IV—PROVISION OF EQUIPMENT AND RATIONS

27.—(1) Subject to the provisions of paragraph (2), (3) and (4) of this Rule the equipment of every lifeboat carried in a ship of Class I, II, III, V, VI or VII (other than a Class C boat) shall be as follows—

Lifeboat  
equipment  
(for other  
than Class C  
boats).

(a) a single banked complement of oars, two spare oars, and a steering oar; one set and a half of crutches attached to the lifeboat or boat by lanyard or chain; a boat hook;

(b) two plugs for each plug hole (except where proper automatic valves are fitted) attached to the lifeboat or boat by lanyards or chains; a bailer and two buckets;

(c) a rudder attached to the lifeboat or boat and a tiller;

(d) a lifeline becketed round the outside of the lifeboat or boat;

(e) a locker suitable for the stowage of small items of equipment;

(f) two hatchets, one at each end of the lifeboat or boat;

(g) a lamp with oil sufficient for 12 hours;

(h) a watertight box containing two boxes of matches not readily extinguished by wind;



Thirteenth  
Schedule.

(i) a mast or masts, with galvanised wire stays together with orange coloured sails which shall be marked for identification purposes with the first and last letter of the name of the ship to which the lifeboat or boat belongs ;

(j) a compass in binnacle complying with the provisions of Part I of the Thirteenth Schedule to these Rules ;

(k) a sea anchor complying with the provisions of Part II of the Thirteenth Schedule to these Rules ;

(l) two painters of sufficient length and size. One shall be secured to the forward end with strop and toggle so that it can be released, and the other shall be firmly secured to the stem of the lifeboat or boat and be ready for use ;

(m) a vessel containing one gallon of vegetable, fish or animal oil. A means shall be provided to enable the oil to be easily distributed on the water, and it shall be so arranged that it can be attached to the sea anchor ;

(n) two parachute distress signals complying with the provisions of Part III of the Thirteenth Schedule to these Rules, and six hand flares complying with Part IV of the Thirteenth Schedule to these Rules ;

(o) two buoyant smoke signals complying with the provisions of Part V of the Thirteenth Schedule to these Rules ;

(p) means to enable persons to cling to the lifeboat if upturned, in the form of bilge keels or keel rails, together with grab lines secured from gunwale to gunwale under the keel ;

(q) a first aid outfit complying with the provisions of Part VI of the Thirteenth Schedule to these Rules ;

(r) an electric torch suitable for morse-signalling together with two spare sets of batteries and two spare bulbs ;

(s) a daylight-signalling mirror ;

(t) a jack-knife fitted with a tin opener to be kept attached to the lifeboat or boat with a lanyard ;

(u) two light buoyant heaving lines ; and

(v) a manual pump complying with the provisions of Part VII of the Thirteenth Schedule to these Rules.

(2) In ships of Classes III and VII the lifeboats or boats shall not be required to carry the equipment specified in sub-paragraphs (i) and (s) of paragraph (1) of this Rule.

(3) No motor lifeboat or mechanically propelled lifeboat shall be required to carry a mast or sails nor more than half the complement of oars. Every such lifeboat shall carry two boat hooks.

(4) Every motor lifeboat shall carry two portable fire extinguishers capable of discharging froth, or other substance suitable for quenching oil fires, a receptacle containing a sufficient quantity of sand and a scoop for distributing the sand.

## Rations.

28.—(1) Every lifeboat carried in a ship of Classes I, II, V, or VI shall be provided with at least the rations specified in the following scale for each person whom it is fit to accommodate—

(a) 3 quarts of fresh water, the quantity to be increased as far as is practicable ;

(b) 16 ounces of biscuits ;

(c) 16 ounces of barley sugar ;

(d) 16 ounces of sweetened condensed milk of first quality.

Provided that the rations specified in sub-paragraphs (b), (c) and (d) of this paragraph shall not be required to be provided in any lifeboat carried in a ship of Class III or VII.

(2) The water shall be kept in the lifeboat in suitable containers and there shall be provided at least one dipper, which shall be attached to the container by a lanyard, and three rust proof drinking vessels (one graduated in  $\frac{1}{2}$ , 1 and 2 ounces). The water shall be frequently changed so as to ensure that it is always clean and fit for drinking.

(3) All the foods specified shall be packed in suitable watertight containers labelled to indicate the contents.

29.—(1) Class A motor lifeboats carried in compliance with Rule 6 or Rule 7 of these Rules shall be provided with the following equipment—

Special  
equipment  
for certain  
Class A  
motor  
lifeboats.

(a) radiotelegraph equipment, which shall comply with the provisions of paragraph (2) of this Rule ;

(b) a dynamo fitted to the motor lifeboat engine and capable of recharging all batteries in the lifeboat ; and

(c) a searchlight which shall include a lamp of at least 80 watts, an efficient reflector, and a source of power which will give effective illumination of a light-coloured object having a width of about 60 feet at a distance of 200 yards for a total period of six hours. The searchlight shall be capable of working for at least three hours continuously.

(2) Radiotelegraph equipment carried in compliance with sub-paragraph (a) of paragraph (1) of this Rule, in addition to complying with such of the requirements of any Rules made under section 159 of the Act, as apply thereto, shall comply with the following requirements—

(a) it shall be installed in a cabin large enough to accommodate both the apparatus and the person using it ;

(b) the arrangements shall be such that the efficient operation of the transmitter and receiver shall not be interfered with by the motor lifeboat engine, whether a battery is on charge or not ; and

(c) the radiotelegraph battery shall not be used to supply power to any engine starting motor or ignition system.

30. The equipment and rations provided in every Class C boat shall be as follows—

Equipment  
and rations  
for C Class  
boats.

(a) a single banked complement of four oars and two spare oars ; six crutches attached to the boat by lanyards or chains ; a boat hook ;

(b) two plugs for each plug hole (except where proper automatic valves are fitted) attached to the boat by lanyards or chains ; a bailer and a bucket ;

(c) a rudder attached to the boat and a tiller ;

(d) a lifeline becketed round the outside of the boat ;

(e) a locker suitable for the stowage of small items of equipment ;

(f) a hatchet ;

(g) a lamp with oil sufficient for 12 hours ;

(h) a watertight box containing two boxes of matches not readily extinguished by wind ;

(i) a compass in binnacle complying with the provisions of Part I of the Thirteenth Schedule to these Rules ;

(j) a sea anchor complying with the provisions of Part II of the Thirteenth Schedule to these Rules ;

(k) two painters of sufficient length and size. One shall be secured to the forward end of the boat with strop and toggle so that it can be released, and the other shall be firmly secured to the stem of the boat and be ready for use ;

(l) two parachute distress signals complying with the provisions of Part III of the Thirteenth Schedule to these Rules and six hand flares complying with the provisions of Part IV of the Thirteenth Schedule to these Rules ;

(m) two buoyant smoke signals complying with the provisions of Part V of the Thirteenth Schedule to these Rules ;

(n) means to enable persons to cling to the boat if upturned, in the form of bilge keels or keel rails ;

(o) an electric torch suitable for morse-signalling together with two spare sets of batteries and two spare bulbs ;

(p) a jack-knife fitted with a tin-opener to be kept attached to the boat with a lanyard ;

(q) two light buoyant heaving lines ; and

(r) two gallons of fresh water, which shall be kept in the boat in a suitable container and frequently changed so as to ensure that it is always clean and fit for drinking, a dipper, which shall be attached to the container by a lanyard ; and a rust proof drinking vessel, graduated in  $\frac{1}{2}$ , 1, and 2 ounces.

Security of  
gear in  
lifeboats.

31.—(1) All items of equipment provided in a lifeboat or boat which are not kept in the locker shall, with the exception of the boat hook which shall be kept free for fending off purposes, be lightly lashed within the lifeboat or boat. The lashing shall be carried out in such a manner as to ensure the security of the equipment and so as not to interfere with the lifting hooks, if fitted, or to prevent ready loading of, or impede ready entry into the lifeboat or boat.

(2) All the rations provided in a lifeboat or boat shall be stowed in watertight tanks, which shall be firmly secured to the lifeboat or boat.

Equipment  
and rations  
for inflatable  
liferafts.

32.—(1) Subject to paragraphs (2) and (3) of this Rule, the equipment and rations provided in every inflatable liferaft shall be as follows—

(a) two sea anchors, one permanently attached to the liferaft and one spare with line ;

(b) for liferafts which are fit to accommodate not more than 12 persons : one bailer, one sponge and one safety knife ;

for liferafts which are fit to accommodate more than twelve persons but not more than twenty-five persons : two bailers, two sponges, and two safety knives ;

for liferafts which are fit to accommodate more than twenty-five persons : three bailers, three sponges and two safety knives ;

(c) one topping-up pump or bellows ;

(d) one repair kit capable of repairing punctures in the buoyancy compartments ;

- (e) one rescue quoit attached to at least 100 feet of line ;
- (f) two paddles ;
- (g) two parachute distress signals complying with the provisions of Part III of the Thirteenth Schedule to these Rules ;
- (h) six hand flares complying with the provisions of Part IV of the Thirteenth Schedule to these Rules ;
- (i) one waterproof electric torch suitable for morse-signalling, together with one spare set of batteries and one spare bulb in a waterproof container ;
- (j) one daylight-signalling mirror and one signalling whistle ;
- (k) one fishing line and six hooks ;
- (l) 12 ounces of suitable non-thirst-provoking food providing at least 2,200 calories per pound weight and six ounces of barley sugar or other equally suitable sweets for each person whom the liferaft is fit to accommodate ;
- (m) three one-pound rust-proof containers of fresh water for each person whom the liferaft is fit to accommodate, of which one container per person may be replaced by a suitable de-salting apparatus capable of producing an equal amount of fresh water ;
- (n) one rust-proof drinking vessel, graduated in  $\frac{1}{2}$ , 1, and 2 ounces ;
- (o) three safety tin-openers ;
- (p) six seasickness tablets for each person whom the liferaft is fit to accommodate ;
- (q) a first aid outfit complying with the provisions of Part VIII of the Thirteenth Schedule to these Rules ; and
- (r) instruction printed in the English language on how to survive in the liferaft.

(2) In ships of Class II, one or more inflatable liferafts, not being less than one-sixth of the number of liferafts carried in any such ship, shall be provided with the equipment specified in sub-paragraphs (a) to (f) inclusive, (i), and (r) of paragraph (1) of this Rule, and with one-half of the equipment specified in sub-paragraphs (g) and (h) of the said paragraph, and the remainder of the inflatable liferafts carried shall be provided with the equipment specified in paragraphs (a) to (f) inclusive, and (r) of the said paragraph.

(3) In ships of Class III or VII, inflatable liferafts shall be provided with the equipment specified in sub-paragraphs (a) to (f) inclusive and (r) of paragraph (1) of this Rule.

#### PART V—STOWAGE AND HANDLING OF LIFE-SAVING APPLIANCES

33. The arrangement of each lifeboat, boat, inflatable liferaft, and article of buoyant apparatus shall be such that it will not interfere with the operation of other lifeboats, boats, inflatable liferafts, or buoyant apparatus.

General.

34.—(1) Lifeboats and other boats shall be so stowed that—

- (a) they can be put into the water safely and in the shortest possible time ;
- (b) they will not impede in any way the marshalling of the persons on board at the launching stations or their embarkation ;

Stowage and handling of boats.

(2) Lifeboats and boats attached to davits, other than mechanically controlled single-arm davits, and lifeboats stowed under lifeboats attached to davits shall be so arranged that even under unfavourable conditions of list and trim they can be launched and as large a number of persons as possible can be embarked in them.

(3) Lifeboats and boats attached to mechanically controlled single-arm davits shall be so stowed that they can readily be placed in the water on either side of the ship or, if the ship has a list, on the side which is lower in the water.

(4) In passenger ships not more than one lifeboat shall be served by a single set of davits ;

Provided that, in any ship in which this arrangement is impracticable, the lifeboats may, subject to any other provisions of these Rules relating to stowage, be stowed one above the other or, if the Government Inspector of Shipping permits in the case of any ship and subject to such conditions as he may impose, they may be fitted one within the other.

(5) If in a passenger ship a lifeboat is stowed underneath another lifeboat there shall be provided removable supports or other appliances to secure that the weight of the upper lifeboat is not unduly supported by the lifeboat underneath it.

(6) Lifeboats may only be stowed on more than one deck on condition that proper measures are taken to prevent lifeboats on a lower deck being fouled by those stowed on a deck above.

(7) Lifeboats shall not be placed in the bows of the ship ;

(8) Davits shall be suitably placed in the ship ;

Fourteenth  
Schedule.

(9) Davits, falls, blocks, and all other gear provided in accordance with this Rule or the Fourteenth Schedule to these Rules shall comply with the provisions of the said Fourteenth Schedule.

Types of  
davits.

(10) In ships of over 150 feet in length of Classes I, II, V and VI and in ships of 500 tons gross tonnage or over in Class III or VII, the davits shall be of the following types—

(a) luffing or gravity type for operating lifeboats weighing not more than four tons in their turning out condition ;

(b) gravity type for operating lifeboats weighing more than four tons in their turning out condition ;

Provided that this sub-paragraph shall not apply to ships of Class VI which carry either a lifeboat or a Class C boat in accordance with sub-paragraph (a) of paragraph (3) of Rule 11 of these Rules attached to a mechanically controlled single-arm davit so that it can be placed in the water on either side of the ship or, if the ship has a list, on the side which is lower in the water.

Provided further that a ship fitted with radial type davits prior to 1st January, 1963, which would otherwise be required by this Rule to be fitted with luffing or gravity type davits, shall not be required to fit such types of davits unless the Government Inspector of Shipping so orders.

(11) In ships, (other than those ships in which the lifeboat is attached to a mechanically controlled single-arm davit) in which the boat deck is more than 15 feet above the load line indicating the deepest submersion of the ship permitted by the Act, arrangements shall be made to facilitate the launching of the lifeboats against an adverse list.



(12) (a) In ships of Classes I, II, V and VII which are fitted with davits, and in ships fitted with mechanically controlled single-arm davits, the lifeboats or boats shall be served by wire rope falls and by winches ;

Falls.

Provided that the Government Inspector of Shipping may allow other types of falls to be fitted to any emergency boat carried in compliance with paragraph (3) of Rule 6 or paragraph (3) of Rule 7 of these Rules, and in ships where, having regard to the height of the boat deck above the lightest sea-going draught or to other circumstances, he is satisfied that such other falls are adequate.

(b) In ships of Classes III and VII which are fitted with davits; wire rope falls, together with winches, shall be fitted for operating lifeboats weighing more than four tons in fully loaded condition.

(13) In ships other than those ships in which the lifeboat or boat is attached to a mechanically controlled single-arm davit, two lifelines shall be fitted to the davit spans of all lifeboats and the falls and lifelines shall be long enough to reach the water with the ship at her lightest sea-going draught and listed to 15 degrees either way. Lower fall blocks shall be fitted with a suitable ring or long link for attaching to the sling hooks, unless disengaging gear complying with the provisions of the Fifteenth Schedule to these Rules is fitted.

Fifteenth  
Schedule.

(14) Lifeboats and boats attached to davits shall have the falls ready for service, and means shall be provided for speedily detaching the lifeboats or boats from the falls. The points of attachment of the lifeboats or boats to the falls shall be so situated as to ensure that the lifeboats or boats can be easily swung clear of the davits.

(15) Where more than one lifeboat is served by the same set of davits, separate falls shall be provided to serve each lifeboat unless the falls are of wire rope. The appliances used shall be such as to ensure lowering the lifeboats rapidly and in turn. Where power appliances are fitted for the recovery of the falls, efficient hand gear shall also be provided.

35.—(1) Inflatable liferafts and buoyant apparatus shall be so stowed that they are at all times fit for use and can be put into the water safely and rapidly even under unfavourable conditions of list and trim.

Stowage of  
inflatable  
liferafts, etc.

(2) Lifebuoys shall be so stowed as to be readily accessible to all persons on board, and in such a way that they can be rapidly cast loose.

(3) Lifejackets shall be so stowed as to be readily accessible to all persons on board. Their position shall be clearly and permanently indicated.

#### PART VI—MISCELLANEOUS PROVISIONS

36.—(1) In every ship which carries lifeboats, arrangements shall be made to ensure that it is possible to effect embarkation into the lifeboats rapidly and in good order.

Embarka-  
tion into  
lifeboats.

(2) In every ship, arrangements shall be made for warning passengers and crew when the ship is about to be abandoned.

(3) In ships of Classes I, II, III, V, VI and VII, one ladder shall be carried at each set of davits. The ladders shall be of sufficient length to reach the water line with the ship at her lightest sea-going draught and listed to 15 degrees either way.

(4) Ships of Classes I, II, III, V, VI and VII, shall be provided with means situated outside the engine room whereby any discharge of water into the lifeboats can be prevented.

Manning of  
lifeboats.

37.—(1) In ships of Classes I and II a deck officer or certificated lifeboatman shall be placed in charge of each lifeboat and a second in command shall also be nominated. The person in charge shall have a list of the lifeboat's crew, and shall see that the men placed under his orders are acquainted with their several duties.

(2) In ships of Classes I and II, a man capable of working the radiotelegraph and searchlight equipment shall be assigned to each lifeboat carrying such equipment.

(3) In ships carrying motor lifeboats, a man capable of working the motor shall be assigned to each motor lifeboat.

Certificated  
Lifeboat-  
men.

38.—(1) The crew of every ship of Classes I and II shall include, for each lifeboat carried in compliance with these Rules, a number of certificated lifeboatmen not less than that specified in the following table.—

<i>Prescribed complement of lifeboat</i>	<i>Minimum number of Certificated Lifeboatmen</i>
Less than 41 persons .. .. .	2
From 41 to 61 persons .. .. .	3
From 62 to 85 persons .. .. .	4
More than 85 persons .. .. .	5

(2) An applicant for a lifeboatman's certificate shall be at least 18 years of age and shall submit himself for examination at such time and place as may be directed by the Government Inspector of Shipping who, on being satisfied that he has had sufficient service at sea and has been trained in all the operations connected with launching lifeboats and the use of oars, that he is acquainted with the practical handling of the boats themselves and, further, that he is capable of understanding and answering the orders relative to lifeboat service, may issue a certificate to him.

(3) In this Rule,

"certificated lifeboatman" means any member of the crew who holds a certificate issued by or under the authority of the Government Inspector of Shipping in accordance with the conditions laid down in paragraph (2) of this Rule; and

"prescribed complement" means the number of persons which a lifeboat is fit to accommodate under these Rules.

Portable  
radio equip-  
ment.

39. The portable radiotelegraph equipment required to be carried by paragraph (10) of Rule 6, paragraph (10) of Rule 7, paragraph (3) of Rule 10 or paragraph (5) of Rule 11 of these Rules shall comply with such of the requirements of any rules made under section 159 of the Act as apply thereto, and shall be kept in the chart room of the ship or other suitable place, ready to be moved into a lifeboat in case of emergency.

Electrically  
operated  
signals.

40. Every ship of Class I shall be provided throughout the ship with electrically operated signals controlled from the bridge for summoning passengers to muster stations.

Electric  
lighting.

41. (1) In every ship of Class I or II, an electric lighting system shall be provided throughout the ship and in particular upon the decks on which the lifeboats are stowed. Provision shall also be made in every such ship for the

electric lighting of the launching gear and of the lifeboats in process of and immediately after being launched. The lighting shall be operated from the ship's main generating plant and so arranged that the power may be supplied from an emergency source of power.

(2) In every ship of Class I or II, the exit from every main compartment occupied by passengers or crew shall be continuously lighted by an emergency electric lamp, operated from the ship's main generating plant and so arranged that power may be supplied from an emergency source of power.

(3) In every ship of Class V and VI, means shall be provided for the electric lighting of the launching gear and lifeboats or boats during the process of launching.

42. (1) Every ship of Class I, II, III, V or VI shall be provided with not less than twelve parachute distress rocket signals which shall comply with the provisions of the Sixteenth Schedule to these Rules.

Ships' distress signals.  
Sixteenth Schedule.

(2) Every ship of Class VII shall be provided with not less than twelve pyrotechnic distress signals which shall be either parachute distress rocket signals as specified in paragraph (1) of this Rule, or red hand flares capable of emitting five red stars into the air to a height of not less than 150 feet.

(3) All pyrotechnic distress signals shall be packed in a watertight container and shall be clearly and indelibly marked to indicate their purpose.

43. (1) Where these Rules require that a particular fitting, appliance or apparatus, or type thereof, shall be fitted or carried in a ship, or that any particular provisions shall be made, the Government Inspector of Shipping may allow any other fitting, appliance or apparatus, or type thereof to be fitted or carried, or any other provisions to be made in that ship if he is satisfied by trial thereof that such other fitting, appliance or apparatus, or type thereof, or provision, is at least as effective as that required by these Rules.

Equivalents and exemptions.

(2) If it appears to the Government Inspector of Shipping on the application of the owner of any ship, that it is not practicable or reasonable to fit in that ship the number of sets of davits required by these Rules, he may allow one or more sets of davits to be dispensed with in that ship subject to such conditions, if any, as he thinks fit;

Provided that, in the cases of ships of Classes I and II the number of sets of davits fitted shall, subject to the provisions of paragraph (6) of Rule 7 of these Rules, in no case be less than the minimum number determined by Column B of the table set out in the First Schedule to these Rules.

(3) If a ship of Class I is permitted by the terms of her passenger ship's certificate to carry, between specified ports or places abroad, a number of passengers in addition to the number allowed when the ship is proceeding to sea from Nigeria, the Government Inspector of Shipping may, subject to such conditions as he thinks fit, allow as regards the part of the voyage between such specified ports or places, modifications of the provisions of paragraphs (4) and (11) of Rule 6 of these Rules (which relate to lifeboats and buoyant apparatus);

Provided that where such modifications are allowed the total number of lifeboats carried shall together provide at least the capacity specified in Column C of the table set out in the First Schedule to these Rules, the total number of lifeboats together with such buoyant apparatus as is carried shall always be sufficient for the total number of persons which the ship is certified to carry and in addition buoyant apparatus shall be carried to support 10 per cent of that number of persons.

(4) The Government Inspector of Shipping may exempt any ship not normally engaged on international voyages but which, in exceptional circumstances is required to undertake a single international voyage from any of the requirements of these Rules, provided that it complies with safety requirements which in his opinion are adequate for the voyage, which is to be undertaken by the ship.

(5) If it is impracticable or unreasonable for a ship to carry a lifeboat or boat of the minimum length prescribed by these Rules, the Government Inspector of Shipping may allow a smaller lifeboat or boat to be carried by that ship.

(6) The Government Inspector of Shipping may, subject to such conditions as he thinks fit, exempt any ship of Class II the keel of which was laid before the coming into operation of these Rules relating to the carriage of inflatable liferafts if he is satisfied that compliance with that requirement is either impracticable or unreasonable in the case of that ship.

(7) The Government Inspector of Shipping may, either absolutely or subject to such conditions as he thinks fit, exempt from any of the requirements of these Rules—

(a) any ship the keel of which was laid before the 1st January, 1963 ; and

(b) any ship the keel of which was laid before the coming into operation of these Rules, other than ships of Classes I and II or ships of 500 tons gross tonnage or over of Classes V and VI engaged on international voyages,

if he is satisfied that compliance with that requirement is either impracticable or unreasonable in the case of that ship.

## FIRST SCHEDULE

Rules 6, 7, and 43

Table showing the minimum numbers of sets of davits to be provided and the minimum cubic capacity of lifeboats in ships of Classes I and II.

<i>Length of Ship (In Feet)</i>				(A)	(B)	(C)
				<i>Minimum number of sets of davits</i>	<i>Smaller number of sets of davits authorised exception- ally</i>	<i>Minimum capacity of life- boats in cubic feet</i>
Under 120	..	...	..	2	2	400
120 and under 140	..	..	..	2	2	650
140 and under 160	..	..	..	2	2	900
160 and under 175	..	..	..	3	3	1,150
175 and under 190	..	..	..	3	3	1,350
190 and under 205	..	..	..	4	4	1,550
205 and under 220	..	..	..	4	4	1,750
220 and under 230	..	..	..	5	4	1,850
230 and under 245	..	..	..	5	4	2,150
245 and under 255	..	..	..	6	5	2,400
255 and under 270	..	..	..	6	5	2,700
270 and under 285	..	..	..	7	5	3,000
285 and under 300	..	..	..	7	5	3,300
300 and under 315	..	..	..	8	6	3,600
315 and under 330	..	..	..	8	6	3,900
330 and under 350	..	..	..	9	7	4,300
350 and under 370	..	..	..	9	7	4,750
370 and under 390	..	..	..	10	7	5,150
390 and under 410	..	..	..	10	7	5,550
410 and under 435	..	..	..	12	9	6,050
435 and under 460	..	..	..	12	9	6,550
460 and under 490	..	..	..	14	10	7,150
490 and under 520	..	..	..	14	10	7,800
520 and under 550	..	..	..	16	12	8,400
550 and under 580	..	..	..	16	12	—
580 and under 610	..	..	..	18	13	—
610 and under 640	..	..	..	18	13	—
640 and under 670	..	..	..	20	14	—
670 and under 700	..	..	..	20	14	—
700 and under 730	..	..	..	22	15	—
730 and under 760	..	..	..	22	15	—
760 and under 790	..	..	..	24	17	—
790 and under 820	..	..	..	24	17	—
820 and under 855	..	..	..	26	18	—
855 and under 890	..	..	..	26	18	—
890 and under 925	..	..	..	28	19	—
925 and under 960	..	..	..	28	19	—
960 and under 995	..	..	..	30	20	—
995 and under 1,030	..	..	..	30	20	—



## SECOND SCHEDULE

Rule 8

Table showing the minimum number of sets of davits to be provided in ships of Class III.

<i>Length of ship in feet</i>						<i>Minimum numbers of sets of davits</i>
Under 200	..	..	..	..	..	2
200 and under 240	..	..	..	..	..	3
240 and under 280	..	..	..	..	..	4
280 and under 320	..	..	..	..	..	5
320 and over	..	..	..	..	..	6

## THIRD SCHEDULE

Rule 14

## REQUIREMENTS FOR LIFEBOATS

- (1) Every lifeboat shall be an open boat constructed with rigid sides.
- (2) The lifeboat shall be of such form and proportions that it shall have ample stability in a seaway, and sufficient freeboard when loaded with its full complement of persons and equipment. It shall be properly constructed for the purpose for which it is intended and shall be of sufficient strength to permit its being safely lowered into the water when loaded with a full complement of persons and equipment.
- (3) No lifeboat shall be less than 16 feet in length.
- (4) No lifeboat, when fully laden with persons (calculated at 165 pounds per person) and equipment, shall weigh more than 20 tons.
- (5) In every lifeboat all thwart and side seats shall be fitted as low in the lifeboat as practicable, and bottom boards shall be fitted so that the thwarts shall not be more than 2 feet 9 inches above them.
- (6) Every lifeboat shall have a mean sheer at least equal to 4 per cent of its length.
- (7) Every lifeboat shall be fitted with internal buoyancy appliances, which shall be so placed as to secure stability when the lifeboat is fully laden under adverse weather conditions.
- (8) The internal buoyancy appliances shall consist either of air cases constructed of copper or muntz metal of not less than 18 ounces to the superficial foot, or of other equally suitable material.
- (9) The total volume of the internal buoyancy appliances in a wooden lifeboat shall be at least equal to one-tenth of the cubic capacity of the lifeboat.
- (10) The buoyancy of a lifeboat which is made of any material other than wood shall be not less than that required for a wooden lifeboat of the same cubic capacity, and the volume of the internal buoyancy appliances shall be increased accordingly.
- (11) The volume of the internal buoyancy appliances of a motor lifeboat shall be at least equal to that of the buoyancy appliances which would be required under these Rules if the lifeboat were not a motor lifeboat and shall be increased above that volume to the extent that such increase is necessary to compensate for the difference between (a) the weight of the motor and its

accessories and any equipment with which the lifeboat may be provided in compliance with Rule 29 of these Rules, and (b) the weight of the additional persons which the lifeboat could accommodate if the motor and its accessories and any equipment with which the lifeboat may be provided in compliance with Rule 29 of these Rules were removed.

The volume of the internal buoyancy appliances of a mechanically propelled lifeboat shall similarly be increased to compensate for the weight of the propelling gear.

(12) In the case of lifeboats which accommodate 100 or more persons the volume of the buoyancy appliances shall be increased beyond the volume required by paragraph (11) of this Schedule to such extent as will ensure the seaworthiness of the lifeboat.

#### FOURTH SCHEDULE

##### CALCULATION OF CUBIC CAPACITY OF LIFEBOATS

Rule 15

(1) Subject to the provisions of paragraph (4) of this Schedule, the cubic capacity of a lifeboat for the purposes of these Rules shall be measured in cubic feet and shall be determined by Stirling's (Simpson's) Rule, that is to say by the following formula :—

Cubic Capacity =  $\frac{L}{12} (4A + 2B + 4C)$ , where L denotes the length of the boat in feet from the inside of the planking or plating at the stem to the corresponding point at the stern post; in the case of a boat with a square stern the length is measured to the inside of the transom; and A, B, C denote respectively the areas of the cross-sections at the quarter length forward, amidships, and the quarter length aft, which correspond to the three points obtained by dividing L into four equal parts (the areas corresponding to the two ends of the boat shall be considered negligible).

The areas A, B, C shall be deemed to be given in square feet by the successive application of the following formula to each of the three cross-sections :—

Area =  $\frac{h}{12} (a + 4b + 2c + 4d + e)$  where h denotes the depth measured in feet inside the planking or plating from the keel to the level of the gunwale, or, in certain cases, to a lower level, as determined hereafter; and a, b, c, d, e denote the horizontal breadths of the lifeboat measured in feet inside the planking or plating at the upper and lower points of the depth and at the three points obtained by dividing h into four equal parts (a and e being the breadths at the extreme points, and c at the middle point of h).

The capacity of a square-sterned lifeboat shall be calculated as if the lifeboat had a pointed stern.

(2) If the sheer of the gunwale, measured at the two points situated at a quarter of the length of the lifeboat from the ends exceeds 1 per cent of the length of the lifeboat, the depth employed in calculating the area of the cross-section A or C shall be deemed to be the depth amidships plus 1 per cent of the length of the lifeboat.

(3) If the depth of the lifeboat amidships exceeds 45 per cent of the breadth, the depth employed in calculating the area of the amidships cross-section B shall be deemed to be equal to 45 per cent of the breadth, and the

depth employed in calculating the areas of the quarter length sections A and C is obtained by increasing this last figure by an amount equal to 1 per cent of the length of the lifeboat ;

Provided that in no case shall the depths employed in the calculation exceed the actual depths at these points.

(4) Unless the owner of the lifeboat requires the cubic capacity to be determined by exact measurement, the cubic capacity may be assumed to be the product of the length, the breadth and the depth multiplied by 0.6 if this formula does not give a greater capacity than that obtained by the formula set out in paragraph (1) of this Schedule. The dimensions shall be measured in the following manner :—

Length—From the intersection of the outside of the planking with the stem to the corresponding point at the stern post, or in the case of a square-sterned lifeboat, to the after side of the transom.

Breadth—From the outside of the planking at the point where the breadth of the lifeboat is greatest.

Depth—Amidships inside the planking from the keel to the level of the gunwale, but the depth used in calculating the cubic capacity may not in any case exceed 45 per cent of the breadth.

(5) The cubic capacity of a motor lifeboat shall be obtained from the gross capacity by deducting a volume equal to that occupied by the motor and its accessories, and any equipment with which the lifeboat may be provided in compliance with Rule 29 of these Rules.

## FIFTH SCHEDULE

### MACHINERY OF MOTOR LIFEBOATS

Rule 16 (1)

#### PART I—CLASS A MOTOR LIFEBOATS

(1) The engine shall be capable of being started readily in cold weather and running reliably under conditions of extremes of temperature.

(2) The engine shall operate properly under conditions of at least 10 degrees list and 10 degrees trim. Circulating water pumps shall be self-priming.

(3) The engine and its accessories including the fuel tank, pipes and fittings, shall be adequately protected to ensure reliable operation under conditions likely to arise at sea during heavy weather.

(4) In a wooden lifeboat a metal tray shall be fitted under the engine.

(5) The fuel tank shall be substantially constructed, securely fixed in position with a metal tray underneath, and fitted with suitable filling and relief arrangements. No part of the tank or its connections shall depend on soft solder for tightness, and tanks made of steel shall be galvanised or metal sprayed externally. The tank and its connections shall be capable of withstanding hydraulic pressure corresponding to a head of at least 15 feet.

(6) The engine shall be covered in and the casing shall be of steel or be fireproofed.

(7) The engine and fuel tank spaces shall be efficiently ventilated.

(8) The shafting and other moving parts shall be fenced where necessary to protect the persons in the lifeboat from injury.

## PART II—CLASS B MOTOR LIFEBOATS

## Rule 16 (2)

(1) The engine shall be capable of being started readily in cold weather and of running reliably under conditions of extremes of temperature.

(2) The engine shall operate properly under conditions of at least 10 degrees list and 10 degrees trim. Circulating water pumps shall be self-priming.

(3) The engine and its accessories, including the fuel tank pipes and fittings, shall be adequately protected to ensure reliable operation under conditions likely to arise at sea during heavy weather.

(4) In a wooden lifeboat a metal tray shall be fitted under the engine.

(5) The magneto, carburettor, and air inlet of any electric ignition engine installed in the lifeboat shall be placed as high as possible. If an electric ignition engine is not fitted in a watertight casing, provision shall be made to protect the magneto, sparking plugs, and other electric ignition fittings from the sea.

(6) The fuel tank shall be substantially constructed, securely fixed in position with a metal tray underneath, and fitted with suitable filling and relief arrangements. No part of the tank or its connections shall depend on soft solder for tightness, and tanks made of steel shall be galvanised or metal sprayed externally. The tank and its connections shall be capable of withstanding hydraulic pressure corresponding to a head of at least 15 feet.

(7) The engine shall be covered in and the casing shall be of steel or be fireproofed.

(8) The engine and fuel tank spaces shall be efficiently ventilated.

(9) The shafting and other moving parts shall be fenced where necessary to protect the persons in the lifeboat from injury.

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### SIXTH SCHEDULE

## MACHINERY OF MECHANICALLY PROPELLED LIFEBOATS

## Rule 17

(1) The propelling gear shall be so arranged that it can be rapidly and easily made ready for service and will not interfere with rapid embarkation of persons in the lifeboat.

(2) If the propelling gear is manually operated it shall be capable of being operated by persons untrained in its use and shall be capable of being operated when the lifeboat is flooded.

(3) The propelling gear shall not require adjustment to enable it to be worked by persons of different stature. It shall be effective in propelling the lifeboat partially or fully loaded.

(4) The propelling gear shall be substantially constructed and fitted to the lifeboat in an efficient manner.

(5) The propelling gear shall be of sufficient power to enable the lifeboat, when loaded with the usual equipment and a distributed weight equal to the full number of persons which it is fit to carry, to be propelled at a speed ahead of 3.5 knots in smooth water over a distance of  $\frac{1}{4}$  mile.

(6) The propelling gear shall be capable of propelling the lifeboat ahead and astern.

## SEVENTH SCHEDULE

## REQUIREMENTS FOR CLASS C BOATS

## Rule 18

- (1) Every Class C boat shall be an open boat constructed with rigid sides.
- (2) The boat shall be of such form and proportions that it shall have ample stability in a seaway and sufficient freeboard when loaded with the greatest number of persons for whom seating is provided and with its full equipment.
- (3) The length of the boat shall be at least
  - 18 feet for a ship whose length is 145 feet or over ;
  - 17 feet for a ship whose length is 115 feet or over and less than 145 feet ;
  - 16 feet for a ship whose length is 70 feet or over and less than 115 feet.
- (4) All thwart and side seats in the boat shall be fitted as low in the boat as practicable and bottom boards shall be fitted.
- (5) The boat shall be square-sterned and shall have a mean sheer at least equal to five per cent of its length.
- (6) The boat shall be fitted with internal buoyancy appliances which shall be so placed as to secure stability when the boat is fully laden under adverse weather conditions.
- (7) The internal buoyancy appliances shall consist either of air case constructed of copper or muntz metal of not less than 18 ounces to the superficial foot, or of other equally suitable material.
- (8) The total volume of the internal buoyancy appliances in a wooden Class C boat shall be at least equal to seven and one-half per cent of the cubic capacity of the boat which shall be determined in accordance with paragraph (4) of the Fourth Schedule to these Rules.
- (9) The buoyancy of a Class C boat which is made of any material other than wood shall be not less than that required for a wooden Class C boat of the same cubic capacity, and the volume of the internal buoyancy appliances shall be increased accordingly.
- (10) The minimum number of persons for whom seating shall be provided shall be equal to the greatest whole number obtained by dividing by thirteen and one-third the cubic capacity of the boat in cubic feet.

## EIGHTH SCHEDULE

## REQUIREMENTS FOR INFLATABLE LIFERAFTS

## Rule 19

- (1) Every inflatable liferaft shall be so constructed that, when fully inflated and floating with the cover uppermost, it shall be stable in a seaway.
- (2) The liferaft shall be so constructed that if it is dropped into the water from a height of 60 feet, neither the liferaft nor its equipment will be damaged.
- (3) The liferaft shall be fitted with a cover which shall be capable of protecting the occupants against injury from exposure, and means shall be provided for collecting rain. The top of the cover shall be fitted with a lamp which derives its luminosity from a sea-activated cell.



(4) The floor of the liferaft shall be waterproof and shall be capable of being sufficiently insulated against cold either—

(a) by means of one or more compartments which the occupants can inflate if they so desire, or which inflate automatically but can be deflated and, if necessary, re-inflated by the occupants ; or

(b) by other equally efficient means not dependent on inflation.

(5) The liferaft shall be contained in a valise or other container so constructed as to be capable of withstanding hard wear under conditions met with at sea.

(6) The liferaft shall be inflated by a suitable gas and the inflation shall take place automatically either on the pulling of a line or by some other equally simple and efficient method.

(7) The liferaft shall be fitted with a painter and shall have a line securely becketed round the outside.

(8) The liferaft shall be capable of being readily righted if it inflates in an inverted position.

(9) The liferaft shall be fitted with efficient means to enable persons in the water to climb on board.

(10) The buoyancy of the liferaft shall be so arranged as to ensure by a division into two separate compartments each capable of supporting out of the water the number of persons which the liferaft is fit to accommodate, or by some other equally efficient means, that there is a reasonable margin of buoyancy if the raft is damaged or partially fails to inflate.

(11) The total weight of the liferaft, its valise or other container and its equipment shall not exceed 400 pounds.

## NINTH SCHEDULE

### REQUIREMENTS FOR BUOYANT APPARATUS

### Rule 20

(1) Buoyant apparatus shall be of such construction that it retains its shape and properties when exposed to the weather on board ship and when in the water. It shall be constructed so as not to require adjustment prior to use.

(2) Buoyant apparatus shall be capable of withstanding a drop test, the height of which shall be equivalent to that of the deck on which it is stowed above the ship's light water line, but in no case less than the following :—

Apparatus carried in ships of Class I	..	..	..	60 feet
Apparatus carried in ships of Class III	..	..	..	20 feet

(3) Buoyant apparatus shall be effective and stable when floating either way up. It shall be capable of supporting a weight of iron, suspended in fresh water from the grab lines, of 15 pounds per foot of length along any edge (subject to a minimum of 64 pounds) without immersing any part of the upper surface of the apparatus.

(4) The air cases or equivalent buoyancy shall be placed as near as possible to the sides of the apparatus, and such buoyancy shall not be dependent upon inflation. If the buoyancy is provided by metal air cases, such air case shall be of copper, muntz metal, or other durable material and not more than 4 feet in length. If the air cases are more than 2 feet 6 inches in length or breadth they shall be efficiently stiffened by divisions or stays. The air

cases shall not be pierced for the attachment of wood divisions or stays. They shall be protected from damage by properly fitted wood casing or sparring and be secured against movement within the casing. No iron work shall be placed in contact with metal air cases.

(5) The framework of buoyant apparatus shall be hardwood, but the wood casing or sparring may be of softwood. The method of securing the corners shall be such as to avoid fastenings into end grain timber. The interior of the apparatus shall be well ventilated. There shall be no projections from the apparatus which would prevent it from sliding easily over a ship's rail during launching.

(6) Grab lines shall be fitted all round the apparatus in such a manner as to provide a number of equal loops corresponding to the number of persons which the apparatus is fit to support. Each loop shall have a cork or light wood float and the depth of the loop when wet shall not be less than 6 inches and more than 8 inches.

On apparatus exceeding 12 inches in overall depth two rows of grab lines shall be fitted, one having its points of attachment a little below the top of the air cases and the other a little above the bottom of the air cases and as close to the sides of the air cases as is practicable. On apparatus of 12 inches or less in overall depth one row of grab lines may be attached along the line of the middle of the depth.

The grab lines shall be of rope of not less than  $1\frac{3}{4}$  inches in circumference. They may be attached to the apparatus by being passed through holes in the framing and being interlaced to prevent movement, or they may be attached to the apparatus by means of wrought iron or steel fastenings. Whichever method is adopted the attachment shall be strong enough to permit the apparatus being lifted by the grab lines.

(7) Buoyant apparatus shall be fitted with a painter.

(8) Buoyant apparatus shall not exceed 400 pounds in weight unless suitable means are provided to enable it to be launched without lifting by hand. If the weight of the apparatus exceeds 300 pounds, suitable handles or rungs shall be fitted for this purpose.

(9) Buoyant apparatus carried in ships of Class I shall not be less than 3 feet 6 inches in breadth.

## TENTH SCHEDULE

### REQUIREMENTS FOR LIFEBOOYS

#### Rule 23

(1) Every lifebuoy shall be constructed of cork, evenly formed, and securely plugged, or other equally efficient buoyant material, and shall be capable of floating in fresh water for at least 24 hours with 32 pounds of iron suspended from it.

(2) The buoyant material shall be covered with good quality material, the sewing of which shall be carried out with thread of not less strength than No. 25A cord.

(3) The lifebuoy shall not be filled with rushes, cork shavings, granulated cork or any other loose granulated material, and its buoyancy shall not depend upon air compartments requiring inflation.

(4) The inside diameter of the lifebuoy shall be 18 inches and the outside diameter 30 inches. The major axis of the section shall be 6 inches. The minor axis of the section shall be 4 inches.

(5) The completed lifebuoy shall be well coated with paint.

(6) The lifebuoy shall be fitted with grab lines which shall be of good quality unkinkable line, well secured to the cover by sewing or seizing and, in addition, by bands of a double thickness of the covering material 3 inches wide around the section of the lifebuoy at four equidistant points, providing four loops of line each not less than 2 feet 4 inches long.

(7) The weight of the lifebuoy shall not exceed 13 pounds 8 ounces.

## ELEVENTH SCHEDULE

Rule 25

### REQUIREMENTS FOR LIFEJACKETS

(1) Every lifejacket shall be capable of being fitted on the body and shall be reversible, so that if it is worn back-to-front or inside out, it will satisfy the requirements of sub-paragraphs (a), (b), and (c) of paragraph (3) of this Rule.

(2) Every lifejacket shall be suitable for both children and adults.

(3) The distribution of buoyancy in the lifejacket shall be such as to ensure that when worn by a person in the water it will comply with the following conditions :—

(a) when the wearer is inert the position of the body shall be as near the vertical as possible ;

(b) when the wearer is inert his head shall be kept clear of the water ; and

(c) the head shall be so supported that if the wearer becomes unconscious it cannot fall forward and the face become submerged.

(4) The buoyancy of the lifejacket shall not depend on air compartments.

(5) The buoyancy shall be provided by cork, kapok, or other equally efficient buoyant material. Provided that buoyant material other than kapok shall not be used if its buoyancy would be adversely affected if it was contaminated with oil.

(6) Every cork lifejacket and every lifejacket of which the buoyancy is provided by buoyant material other than kapok shall be capable of supporting 16 pounds 8 ounces of iron in fresh water for twenty-four hours. The cork in a cork lifejacket shall not weigh more than 12 pounds per cubic foot, and shall be of good quality, cleaned, and in pieces the size of which shall not be less than 10 cubic inches.

(7) Every kapok lifejacket shall be capable of supporting at least 20 pounds of iron in fresh water after floating in fresh water for twenty-four hours with 16 pounds 8 ounces of iron attached. The kapok shall be of the best flotation quality, well teased, evenly packed, and free from seeds and other foreign matters. At least 24 ounces of such kapok shall be in each lifejacket.

(8) The covering of lifejackets, other than kapok lifejackets, shall be either :—

(a) of cotton material, the weight of which per lineal yard shall be not less than  $7\frac{1}{2}$  ounces for a width of 27 inches and in proportion for other widths, and in this case the threads per inch shall be warp 42 two-fold threads, weft 29 two-fold threads ; or

(b) of linen material, the weight of which per lineal yard shall be not less than 6 ounces for a width of 27 inches and in proportion for other widths, and in this case the threads per inch shall be 28 in both the warp and weft.

(9) In every kapok lifejacket the kapok shall be contained in envelopes made from 0.012 inch double lamina polyvinylchloride sheeting and shall be effectively sealed either by radio-frequency welding or by other equally effective means.

(10) The polyvinylchloride sheeting referred to in paragraph (9) of this Schedule shall comply in all respects with the Specification issued by the British Standards Institution in respect of "Thin P.V.C. sheeting (flexible unsupported)" and numbered B.S. 1763 : 1956, and its chemical stability shall be such that the buoyancy of the kapok contained in the envelopes made from such sheeting will not be adversely affected, in the conditions in which lifejackets are normally stored and used, by hydrochloric acid liberated from such sheeting.

(11) The covering of kapok lifejackets shall be of preshrunk cotton material, the weight of which in loomstate per lineal yard shall be not less than 6 ounces for a width of 27 inches and in proportion for other widths. The material shall be laundered and shall be free from admixture of sizing or other foreign matter. The threads per inch in loomstate shall be warp 44 two-fold threads and weft 34 two-fold threads.

(12) The tapes of every lifejacket shall be of linen web  $1\frac{1}{4}$  inches wide capable of bearing a strain of 200 pounds. The tapes shall be securely attached to the lifejacket cover. The method of fixing and tying of the tapes shall be such as to be easily understood and capable of being readily carried out.

(13) Every lifejacket shall be marked indelibly on one side with a name indicating the design of the lifejacket in letters not less than one inch in size, and on the other side with the maker's name or other identification mark in smaller letters.

## TWELFTH SCHEDULE

Rule 26

### REQUIREMENTS FOR LINE-THROWING APPLIANCES

(1) Every line-throwing appliance shall include 4 rockets and 4 lines, each line being  $\frac{1}{2}$  inch in circumference and of suitable length, and having a breaking strain of not less than 250 pounds.

(2) Every line-throwing appliance shall be capable of throwing the line in such a manner that the lateral deflection of the line on either side of the direction of firing does not exceed 10 per cent of length of flight of the rocket.

(3) The lines and the rockets, with means of igniting them, shall be kept in a watertight case.

(4) Every line-throwing appliance carried in ships of Classes I, II, V and VI shall be capable of throwing a line  $\frac{1}{2}$  inch in circumference a minimum distance of 250 yards in calm weather.

(5) Every line-throwing appliance carried in ships of Classes III and VII, shall be capable of throwing a line  $\frac{1}{2}$  inch in circumference a minimum distance of 200 yards in calm weather.

## THIRTEENTH SCHEDULE

SPECIFICATIONS OF EQUIPMENT FOR LIFEBOATS,  
BOATS, AND INFLATABLE LIFERAFTSPART I—COMPASSES FOR LIFEBOATS, CLASS C BOATS,  
AND OTHER BOATS

Rules 27 (1) (j), Rule 30 (i)

(1) Every compass shall be of liquid type. The liquid used shall be a mixture of industrial methylated spirit and water, specific gravity 0.93 at 60°F. It shall be clear, free from sediment, cloudiness, and dirt defects. The compass shall function efficiently over a temperature range -10°F. to +120°F.

(2) The magnet shall have ample directive force. A period of 18 to 22 seconds after a deflection of 40 degrees at a temperature of about 60°F. shall be deemed to comply with this requirement. For the purposes of this paragraph a "period" is the time taken by a complete oscillation of the card after a deflection of 40 degrees, a swing past the position of rest, and back again to the completion of its swing on the side to which it was originally deflected.

(3) Over a range of -10°F. to +120°F. the card system when immersed in the compass liquid shall rest on the pivot with a weight between 4 and 10 grammes.

(4) The card shall be not less than 4 inches in diameter and shall have a clearance from the bowl of at least  $\frac{1}{4}$  inch. It shall be marked to half points, the eight principal points being distinctively marked. The card shall be luminised.

(5) The centre shall be of sapphire or equally hard jewel, and shall be removable from the float.

(6) The pivot shall be of iridium or equally suitable hard material.

(7) The arrangements made to allow for the expansion and contraction of the liquid shall enable the compass to withstand a temperature range of -10°F. to +120°F. without leakage, formation of bubbles, or other defects.

(8) The bowl shall be adequately weighted and properly poised in the gimbals which shall give a fore and aft and thwartship action. The gimbaling shall be in the same horizontal plane as the point of suspension of the card and the outer gimbal pins shall be placed fore and aft. The bowl shall be placed in a binnacle or box of non-magnetic material and the lubber line or point shall be luminised. The card system shall remain free when the bowl is tilted by 10 degrees.

(9) The direction of the lubber line or point from the centre of the card shall lie in the same vertical plane as the outer gimbal axis or other fore and aft datum line. The cumulative effect of card, pivot, directional and other similar errors, and of inaccurate positioning of the lubber's point, shall be such that in the undisturbed earth's field the direction as read on the card against the lubber's point shall not differ by more than 3 degrees from the magnetic direction of the outer gimbal axis or other fore and aft datum line for any direction of the latter.



(10) The minimum thickness of the metal used in the construction of the compass shall be as follows :—

Compass bowl	..	..	..	..	..	..	21 S.W.G.
Binnacle	..	..	..	..	..	..	24 S.W.G.
Lamp	..	..	..	..	..	..	24 S.W.G.

The compass bowl shall be efficiently stiffened to take gimbal pins. The binnacle shell shall be swaged or spun into the base ring and soldered all round.

The gimbal ring shall be of naval brass or other rigid non-magnetic metal  $\frac{5}{8}$  inch by  $\frac{1}{8}$  inch. Gimbal pins shall be of naval brass or other hard non-magnetic material of  $\frac{1}{4}$  inch diameter ; both they and the bearings in which they engage shall be perfectly smooth.

(11) The paint inside the bowl shall show no sign of blistering.

(12) The materials and workmanship shall be good throughout and the compass shall be such as will remain efficient under sea-going conditions.

(13) The bowl of the compass shall be engraved or stamped with the maker's name or other identification mark.

## PART II—SEA ANCHORS FOR LIFEBOATS, CLASS C BOATS, AND OTHER BOATS

Rule 27 (1) (k), Rule 30 (j)

(1) Every sea anchor shall comply with the following requirements :—

(a) It shall be constructed of No. 1 best flax canvas, or other suitable material.

(b) The canvas part shall be strongly sewn together and be roped at the seams with  $1\frac{3}{4}$  inch bolt rope ; the ropes then being formed into a bridle with a thimble seized in the connecting end, and the ropes extended and seized into a parcelled loop to form the attachment for the tripping line.

(c) A hawser shall be attached to the sea anchor by means of a shackle of suitable size to take the thimble.

(d) The length of the hawser shall be three times the length of the lifeboat or boat.

(e) A tripping line two fathoms longer than the hawser shall be provided.

(2) A circular sea anchor shall be fitted at the mouth with a galvanised iron hoop. Any other type of sea anchor shall be fitted with galvanised iron spreaders across the mouth and with an ash spreader at the upper edge.

(3) The size of sea anchors shall be as follows :—

(a) For lifeboats over 30 feet in length—

Non-circular folding sea anchors—Mouth 30 inches upper edge, 27 inches lower edge, 27 inches each side. Area of mouth 770 square inches.

Length of canvas bag—4 feet 6 inches.

Hawser—3 inches in circumference.

Tripping line—2 inches in circumference.

(b) For lifeboats over 22 feet in length, but not over 30 feet in length—

Circular sea anchors—Mouth 27 inches diameter.

Non-circular folding sea anchors—Mouth 24 inches each side.

Length of canvas bag—4 feet.

Hawser—3 inches in circumference.

Tripping line—2 inches in circumference.

(c) For lifeboats not over 22 feet in length, Class C boats, and other boats—

Circular sea anchors—Mouth 24 inches diameter.

Non-circular folding sea anchors—Mouth 21½ inches each side.

Length of canvas bag—3 feet 6 inches.

Hawser—2½ inches in circumference.

Tripping line—1½ inches in circumference.

### PART III—PARACHUTE DISTRESS ROCKET SIGNALS FOR LIFEBOATS, CLASS C BOATS, OTHER BOATS AND INFLATABLE LIFERAFTS

Rule 27 (1) (n)

Rule 30 (1)

Rule 32 (1) (g)

(1) Every parachute distress rocket signal shall consist of a single bright red star which is projected to the required height by means of a rocket, and which burns while falling, its rate of fall being controlled by means of a small parachute to 15 feet per second. It shall be fitted with a self-contained means of ignition, so designed as to operate from the hand-held position without external aid, and such as to enable the rocket to be discharged from a lifeboat, boat, or inflatable liferaft without harm to the occupants.

(2) When the rocket is fired approximately vertically, the star and parachute shall be ejected at or before the top of the trajectory, at a minimum height of 600 feet. The rocket shall also be capable of functioning when fired at an angle of 45 degrees to the horizontal.

(3) The star shall burn with a minimum luminosity of 10,000 candle power for not less than 30 seconds. It shall burn out at a height of not less than 150 feet from the sea level.

(4) The parachute shall be of such a size as to provide the required control of the rate of fall of the burning star. It shall be attached to the star by means of a flexible fire proof harness.

(5) The rocket shall be waterproofed and capable of satisfactory functioning after immersion in water for one minute.

(6) All components, compositions and ingredients shall be of such a character and of such a quality as to enable the rocket to maintain its serviceability under good average storage conditions for a period of at least two years.

(7) The rocket shall be packed in a container which shall be effectively sealed. If made of metal, the container shall be well tinned and lacquered or otherwise adequately protected against corrosion.

(8) The date on which the rocket is filled shall be stamped indelibly on the rocket and on the container.

(9) Clear and concise directions for use in the English language shall be printed indelibly on the rocket.

PART IV.—HAND-HELD DISTRESS FLARE SIGNALS FOR LIFEBOATS,  
CLASS C BOATS, OTHER BOATS, AND INFLATABLE LIFERAFTS

Rule 27 (1) (n)

Rule 30 (l)

Rule 32 (1) (h)

(1) Every hand-held distress flare signal shall be fitted with a self-contained means of ignition so designed as to operate from a hand-held position without external aid and such as to enable the flare to be displayed from a lifeboat, boat, or inflatable liferaft without harm to the occupants.

(2) Where the flare is carried in an inflatable liferaft it shall be so constructed that, when the flare is fired, no burning composition will fall from the flare which might cause damage to the liferaft.

(3) The flare shall be capable of emitting a red light of a minimum luminosity of 15,000 candle power for not less than 55 seconds.

(4) The flare shall be waterproofed and capable of satisfactory functioning after immersion in water for one minute.

(5) All components, composition and ingredients shall be of such a character and of such a quality as to burn evenly and as to enable the flare to maintain its serviceability under good average storage conditions for a period of at least two years.

(6) The flare shall be stamped indelibly with the date on which it is filled.

(7) Clear and concise directions for use in the English language shall be printed indelibly on the flare.

PART V.—BUOYANT SMOKE SIGNALS FOR LIFEBOATS, CLASS C BOATS,  
AND OTHER BOATS

Rule 27 (1) (o)

Rule 30 (m)

(1) Every buoyant smoke signal shall be fitted with a self-contained means of ignition.

(2) The signals shall be capable, while floating on the water, of emitting a dense volume of orange-coloured smoke for a period of not less than two minutes and not more than four minutes. The weight of the composition contained in the signal shall be at least 20 ounces.

(3) The signal shall be waterproofed and capable of satisfactory functioning after immersion in water for one minute.

(4) All components, composition and ingredients, shall be of such a character and of such a quality as to burn evenly and as to enable the signal to maintain its serviceability under good average storage conditions for a period of at least two years.

(5) The signal shall be stamped indelibly with the date on which it is filled.

(6) Clear and concise directions for use in the English language shall be printed indelibly on the signal.

PART VI.—FIRST AID OUTFITS FOR LIFEBOATS AND BOATS (OTHER THAN CLASS C BOATS)

Rule 27 (1) (q)

(1) The contents of every first aid outfit provided in a lifeboat or boat shall comply with the standards and requirements of the current issue of the British Pharmacopoeia, the British Pharmaceutical Codex or the National Formulary, where such standards are applicable, and shall include the following :—

Article	Quantity
(a) Collapse Revivers (6 Capsules of Fragrant Ammonia) .. .. .	1 tin.
(b) Compound Codeine Tablets (Tab. Codeine Co.) ..	25 tablets
(c) Six Morphine Ampoule Syringes containing a solution of either a morphine salt equivalent to Anhydrous Morphine $\frac{1}{2}$ gr. in 1. c.c. or Papaveretum B.P.C. $\frac{1}{2}$ gr. in 1.c.c.—e.g., "Omnopon"—in screw capped metal drum with directions for use. .. .. .	1 drum.
(d) Standard Dressings No. 14, Medium B.P.C. 6" $\times$ 4"	2
(e) Standard Dressings No. 15, Large B.P.C. 8" $\times$ 6"	2
(f) Elastic Adhesive Dressings, 2" $\times$ 3" packets of three	2 packets
(g) Bandages, Triangular, illustrated, not less than 38" side, 54" base .. .. .	5
(h) Gauze, white, absorbent, compressed, 36" $\times$ 2 $\frac{1}{2}$ yds.	3
(i) Roller Bandages, compressed, 2 $\frac{1}{2}$ " $\times$ 4 yds. ..	4
(j) Bandage, unbleached Calico 6" $\times$ 6 yds. .. ..	1
(k) Cotton Wool, compressed 4 oz. packet .. ..	1
(l) Safety Pins, brass plated 2" .. .. .	6
(m) Soft Paraffin, 1 oz. tube. .. .. .	1 tube
(n) Scissors 4", 1 sharp, 1 blunt point, of rustless and stainless steel. .. .. .	1
(o) Energy Tablets (10 mg. amphetamine sulphate) ..	60 tablets
(p) Silica Gel. .. .. .	1 capsule
(q) Instructions in the English language printed on linen or waterproof paper.	

(2) The first aid outfit shall be packed in a container which shall comply with the following requirements :—

(a) It shall be durable, damp-proof, and effectively sealed. It shall also be sealed with a device to indicate that the contents are intact.

(b) It shall be packed in a room from which atmospheric moisture has been removed as far as possible.

(c) Where the container is made of metal, it shall be well tinned and lacquered and a handle shall be fitted to the lid.

(d) An itemized list of contents shall be given on the outside of the container.

PART VII—MANUAL PUMPS FOR LIFEBOATS AND BOATS  
(OTHER THAN CLASS C BOATS)

Rule 27 (1) (v)

Every lifeboat manual pump shall comply with the following requirements:—

(1) The capacity when operated at not more than 60 double strokes per minute at 4 feet suction head, shall be not less than

(a) 7 gallons per minute in lifeboats of 24 feet in length or over.

(b) 5 gallons per minute in lifeboats of under 24 feet in length.

(2) In its normal dry state (excluding internal grease or other assistance) the pump shall be readily self-priming when operated at a suction head of not less than 4 feet.

(3) All parts of the pump shall be of non-corrodible material unaffected by sea water.

(4) The interior of the pump, including valves, shall be readily accessible for emergency cleaning, and the cover for access shall be capable of being easily removed without the use of a spanner or other special tool.

(5) The pump branches shall be suitable for use with  $1\frac{1}{4}$  inches bore rubber hose connections. The metal part of the operating handle shall be suitably sheathed by material other than wood so as to protect the hands of the operator when the pump is used in extreme cold. The spindle gland shall be of the spring loaded seal ring type.

PART VIII—FIRST AID OUTFITS FOR INFLATABLE LIFERAFTS

Rule 32 (1) (g)

(1) The contents of every first aid outfit provided in an inflatable liferaft shall comply with the standards and requirements of the current issue of the British Pharmacopoeia, the British Pharmaceutical Codex, or the National Formulary, where such standards are applicable, and shall include the following:—

<i>Article</i>	<i>Quantity</i>
(a) Standard Dressings No. 14, Medium B.P.C. 6"×4" ..	4
(b) Standard Dressings No. 15, Large B.P.C., 8"×6" ..	4
(c) Bandages, Triangular, illustrated, not less than 38" side, 54" base .. .. .	4
(d) Open Wove Bandages, B.P.C., 3"×4 yards .. .. .	10
(e) Antiseptic Burn or Wound Cream, Centrimide B.P., 0.5% w/w 50 gm. tube .. .. .	2
(f) Scissors 4" 1 sharp, 1 blunt point, of rustless and stainless steel .. .. .	1
(g) Six Morphine Ampoule Syringes containing a solution of either a morphine salt equivalent to Anhydrous Morphine $\frac{1}{4}$ gr. in 1 c.c. or Papaveretum B.P.C. $\frac{1}{2}$ gr. in 1 c.c.—e.g., "Omnopon"—in screw capped metal drum with directions for use .. .. .	1 drum
(h) Instructions in the English language printed on linen or water-proof paper. ..	

(2) The first aid outfit shall be packed in a container which shall be durable, damp-proof, and effectively sealed. An itemised list of contents shall be given on the outside of the container.



## FOURTEENTH SCHEDULE

DAVITS AND LIFEBOAT LAUNCHING GEAR  
PART I

## CONSTRUCTION

## Rule 34 (g)

(1) Definition of "*Working Load*". In this Part of this Schedule the expression "working load" means

(a) in relation to davits to which sub-paragraph (a) of paragraph (2) of this Part of this Schedule applies, the sum of the weight of the lifeboat, the equipment, the blocks and falls, and the maximum number of persons which the lifeboat is deemed fit to carry, the weight of each person being taken to be 165 pounds, provided, however, that if two lifeboats are served by the same set of davits, the working load in relation to these davits shall be the maximum load that may be imposed on them at any time ;

(b) in relation to davits to which sub-paragraph (b) or (c) of paragraph (2) of this Part of this Schedule applies, the sum of the weight of the lifeboat or boat, the equipment, the blocks and falls, and a launching crew consisting of two members, the weight of each member being taken to be 165 pounds.

(2) *Strength*.—(a) In ships of Classes I, II, III, V, VI and VII, engaged on international voyages, the davits, falls, blocks, and all other gear shall be of such strength that the lifeboats can be safely lowered when fully loaded with persons and equipment with the ship listed to 15 degrees either way ;

Provided that this paragraph shall not apply to davits to which Class C boats are attached or to mechanically controlled single-arm davits fitted in accordance with these Rules.

(b) In ships which carry lifeboats or boats attached to mechanically controlled single-arm davits, the davits, falls, blocks, and all other gear shall be of such strength and the operating gear shall be of such power that the lifeboats or boats when fully equipped and manned with a launching crew of two members can be safely lowered on the side which is lower in the water with the ship listed to 25 degrees.

(c) In ships in which davits or launching appliances not required by these Rules are provided for lifeboats or boats, such davits or appliances shall be of such strength that the lifeboats or boats when fully equipped and manned with a launching crew of two members can be safely lowered.

(3) *Gravity davits*.—(a) In the case of gravity type davits comprising arms mounted on rollers which engage with and travel down fixed inclined trackways, the trackways shall be inclined at an angle of not less than 30 degrees to the horizontal when the vessel is upright.

(b) Gravity davits of other types shall be so designed that there is a positive turning out moment during the whole of the davit travel from the inboard to the outboard position when the vessel is listed up to 25 degrees either way.

(c) Where gravity type davits are fitted with means for recovering the lifeboats by power, automatic cutouts shall be fitted and arranged to operate before the davits come against the stops in order to avoid overstressing the wire rope falls or davits.

(4) *Luffing davits*.—The operating gear of luffing type davits shall be of sufficient power to ensure that the lifeboats fully equipped and manned with the launching crew, but not loaded with other persons, can be turned out against a list of at least 15 degrees.

(5) *Radial davits*.—When radial davits are provided they shall be fitted with means to prevent them from being jerked from their sockets.

(6) *Stresses*.—(a) In the case of davits other than mechanically controlled single-arm davits the designed stress on the davit arms, when operating under maximum load and conditions of list, shall afford an adequate factor of safety, having regard to the quality of the material used, the method of construction, and the live nature of the load to which the davits are subjected.

(b) In the case of mechanically controlled single-arm davits, the designed stress on the davit, when operating under maximum load and conditions of favourable list, shall afford an adequate factor of safety having regard to the quality of the material used, the method of construction, and the live nature of the load to which the davit is subjected.

(7) *Static load test*.—In the case of all davits made of cast steel, or of wrought steel or other material fabricated by a welding process, each davit with its arm at full outreach shall be capable of withstanding a static load test of not less than 2.2 times that part of the working load supported by the arm.

(8) *Attachments at the davit head*.—The attachment at the davit head from which the blocks are suspended shall be capable of withstanding a proof load test of not less than  $2\frac{1}{2}$  times the load on the attachments.

(9) *Blocks*.—(a) Lifeboat and boat blocks shall be of ample strength having regard to the working load upon the davits.

(b) In the case of metal blocks the material used shall be of ductile quality and adequate strength

No part of gear intended to bear the weight of a lifeboat or boat shall be constructed of cast metal unless the Government Inspector of Shipping shall so allow in the case of any ship. Each metal block shall be capable of withstanding a proof load test of not less than  $2\frac{1}{2}$  times the load on the block. There shall be ample clearance between the cheeks of blocks in which cordage rope is used. The width between the cheeks shall be half an inch greater than the diameter of new cordage ropes when those ropes are  $3\frac{3}{4}$  inches in circumference, and less in proportion in the circumference of the ropes when they are smaller.

(10) *Wire ropes*.—(a) The breaking tensile load of each wire rope used for lowering lifeboats or other boats shall be not less than six times the load on the wire rope.

(b) Wire ropes shall be securely attached to the drum of the winch, and the end attachments of the wires and other parts from which the lifeboat is to be suspended shall be capable of withstanding a proof load of not less than  $2\frac{1}{2}$  times the load on such attachments and other parts.

(c) Where wire splices are used they shall be capable of withstanding a proof test of not less than  $2\frac{1}{2}$  times the load on the splice unless sample splices of each size of wire, when tested to destruction, give a factor of safety at the splice of not less than 5.

(11) *Winches*.—(a) In the case of davits other than mechanically controlled single-arm davits, winch drums shall be arranged to keep the two falls separate and to enable them to pay out at the same rate. The leads of the wire ropes shall be such that they will wind evenly on the drums and lead blocks shall be arranged to give a fleet angle or angle of lead of not more than five degrees for grooved drums and three degrees for ungrooved drums. In the case of mechanically controlled single-arm davits, the lead of the wire rope fall shall be such that the fall winds evenly on the drum.

(b) The brakes of lifeboat and boat winches shall be of robust construction and afford complete control and limitation of speed in the operation of lowering. The hand brake shall be so arranged that it is normally in the "ON" position and returns to the "ON" position when the control handle is not being operated. The weight on the brake lever shall be sufficient to operate the brake effectively without additional pressure. The brake gear shall include means for automatically controlling the speed of lowering to ensure that the lifeboat or boat is lowered expeditiously without exceeding a rate of lowering consistent with safety. For this purpose, the automatic brake shall be set to give a speed of lowering of the lifeboat of between 60 and 120 feet per minute. Ratchet gear shall be incorporated in the hand brake mechanism of lifeboat winches. Where practicable the brake gear shall be so situated as to enable the man operating the winch to have the lifeboat or boat under observation during the whole process of its being launched into the water.

(c) When more than one lifeboat is served by the same wire falls the winches shall be fitted with quick return hand gear to enable the falls to be rapidly recovered, the lower blocks, when fitted, shall be non-toppling and, where necessary, provision shall be made to prevent the falls from cabling.

(12) *Cordage rope falls.* (a) Cordage ropes used for falls shall be durable, uninkable, firm laid, and pliable. They shall be able to pass freely under any conditions through a hole  $\frac{3}{8}$  inch larger than the nominal diameter of the rope.

(b) The breaking loads of cordage ropes shall be not less than :—

Size of Rope							Breaking Load
3 $\frac{3}{4}$ inches	..	..	..	..	..	..	6 tons
3 $\frac{1}{2}$ inches	..	..	..	..	..	..	5.25 tons
3 $\frac{1}{4}$ inches	..	..	..	..	..	..	4.5 tons
3 inches	..	..	..	..	..	..	3.85 tons
2 $\frac{3}{4}$ inches	..	..	..	..	..	..	3.25 tons
2 $\frac{1}{2}$ inches	..	..	..	..	..	..	2.7 tons
2 $\frac{1}{2}$ inches	("Ordinary quality")						2.2 tons

(c) Cordage ropes of less than 2 $\frac{1}{2}$  inches shall not be used for lifeboat falls. Winding reels or flaking boxes for the falls shall be provided.

(d) Where cordage rope falls are used to serve two lifeboat stowed one above another under one pair of davits, a separate set of blocks and falls shall be provided for each lifeboat.

The falls for the first lifeboat to be launched shall be attached to the davits and to the lifeboat ready for service. The falls for the second lifeboat to be launched shall be kept in position attached to the davits, but not necessarily attached to the lifeboat, provided that the lower blocks are taken to suitable ring bolts on deck or to strops on the davit or are otherwise arranged in such a manner that the falls will not interfere with the launching of the first lifeboat and will be immediately available for attachment to the second lifeboat.

(13) *Wood blocks for cordage rope falls.* Wood blocks for lifeboats of standard proportions shall be as follows :—

<i>Length of boat not over</i>		<i>Davits in ships of Classes I, II, III, V, VI and VII</i>	
		<i>BLOCK</i>	<i>Purchase of falls*</i>
<i>Feet</i>	<i>Inches</i>		<i>Size of cor- dage rope</i>
30	13	T & T	3 $\frac{3}{4}$
29	13	T & T	3 $\frac{3}{4}$
28	13	T & T	3 $\frac{3}{4}$
27	12	T & T	3 $\frac{1}{2}$
26	12	T & T	3 $\frac{1}{2}$
25	12	T & T	3 $\frac{1}{4}$
24	11	T & T	3
23	11	T & D	3
22	10	T & D	2 $\frac{3}{4}$
21	10	T & D	2 $\frac{3}{4}$
20	9	D & D	2 $\frac{1}{2}$
19	9	D & D	2 $\frac{1}{2}$
18	9	D & D	2 $\frac{1}{2}$ **
17	8	D & D	2 $\frac{1}{2}$ **
16	8	D & D	2 $\frac{1}{2}$ **

\* T=Triple

D=Double

\*\* Ordinary quality breaking load 2.2 tons.

(14) *Bollards.* Suitable bollards or other equally effective appliances for lowering lifeboats shall be provided in all cases where cordage rope falls are used. For lifeboats not exceeding 20 feet in length, horn cleats attached to the davits may be fitted in lieu of bollards. For lifeboats over 20 feet but not exceeding 25 feet in length, bollards of the cruciform type shall be attached to the deck, and in the case of lifeboats not over 27 feet in length the horizontal arms shall be not less than 5 inches in diameter, and sufficiently long to take at least four turns of the largest rope with which they will be used. In the case of lifeboats over 27 feet in length the arms shall be 6 inches in diameter and not less than 6 inches in length from the side of the column. Ample lips or flanges shall be provided at the ends of the arms to prevent the fall from jumping off. Fairleads shall be fitted and be arranged so as to ensure that the lifeboat is not lifted during the process of swinging out.

## PART II—LOWERING TESTS

Rule 34 (9)

(1) Each pair of davits to which sub-paragraph (a) of paragraph (2) of Part I of this Schedule applies and, where fitted, the lifeboat winches including their hand and automatic brakes, shall be capable of withstanding the following test :—if not more than one lifeboat is suspended from the davits when in the outboard position the lifeboat at each set of davits shall be lowered from the embarkation deck into the water loaded with the usual equipment and a distributed weight equal to the full number of persons

which it is fit to accommodate plus 10 per cent of the total load, including blocks and falls; if two lifeboats are suspended from the davits when in the outboard position, the heavier lifeboat loaded as indicated above shall be lowered from the embarkation deck into the water while the other lifeboat, with its blocks and falls and loaded with the usual equipment, plus 10 per cent, of the weight of the lifeboat, equipment, blocks and falls is suspended from the davits. Winch brakes exposed to the weather shall be capable of withstanding the foregoing test with the braking surface wetted.

(2) In the case of davits to which sub-paragraph (b) or (c) of paragraph (2) of Part I of this Schedule applies, the lifeboat or boat shall be lowered into the water with the usual equipment and a distributed weight equal to the weight of a launching crew of two members, each weighing 165 pounds, plus 10 per cent of the total working load.

### FIFTEENTH SCHEDULE LIFEBOAT DISENGAGING GEARS

Rule 34 (13)

(1) Lifeboat disengaging gears shall be so arranged as to ensure simultaneous release of both ends of the lifeboat.

(2) The means of effecting release shall be placed aft.

(3) The gear shall be of a type which will permit the release of the lifeboat only when it is waterborne.

(4) The gear shall be of a type which will permit release should there be a towing strain on the link or falls.

(5) The hooks shall be suitable for instant unhooking by hand.

(6) The point of attachment of the hook to the eye, ring, or link of the block shall not be lower than when ordinary fixed hooks are fitted.

(7) The gear and mechanism for effecting release shall be so constructed and arranged as to ensure the safety of the lifeboat independently of any safety pins.

(8) The means for effecting release shall be by hauling on or letting go a line, or by using a lever. If release is effected by a pull upon a line the line shall be properly cased in. Rods or other connections between hooks shall also be cased in whenever this is necessary for the safety or the efficient action of the gear or for the protection of persons from injury.

The fairleads shall be properly arranged to prevent the lines from jamming or nipping, and shall be strongly attached to permanent parts of the lifeboat. The lines shall be fitted with chains where necessary for efficiency.

(9) Such parts of the gear as would otherwise be likely to be set fast by rust or corrosion shall be made of non-corrodible metal.

(10) No part of the gear taking the weight of the lifeboat shall be made of cast metal.

(11) The scantlings and proportions of all parts which support the weight of the lifeboat shall be designed to provide breaking strength proportionate to a load of at least  $2\frac{1}{2}$  times the weight of the heaviest loaded lifeboat in which the gear is intended to be fitted.



## SIXTEENTH SCHEDULE Rule 42 (1) and (2)

## SHIPS' PARACHUTE DISTRESS ROCKET SIGNALS

(1) Every ship's parachute distress rocket signal shall consist of a single bright red star which is projected to the required height by means of a rocket, and which burns while falling, its rate of fall being controlled by means of a parachute to 15 feet per second.

(2) When the rocket is fired approximately vertically, the star and parachute shall be ejected at or before the top of the trajectory, at a minimum height of 750 feet. The rocket shall also be capable of functioning when fired at an angle of 45 degrees to the horizontal.

(3) The star shall burn with a minimum luminosity, of 25,000 candle power for not less than 40 seconds. It shall burn out at a height of not less than 150 feet from the sea level.

(4) The parachute shall be of such size as to provide the required control of the rate of fall of the burning star. It shall be attached to the star by means of a flexible fireproof harness.

(5) The rocket may be ignited by any suitable method. If external ignition by means of a safety fuse is employed, the outer end of the safety fuse shall be covered with a metal ferrule primed with match composition and a separate striker shall be suitably attached to each rocket.

(6) The match composition, the striker composition, the ferrule, and the whole of the external surface of the rocket shall be water-proofed.

(7) The rocket shall be capable of functioning properly after immersion in water for one minute and removal of the adhering water by shaking.

(8) All components, compositions, and ingredients shall be of such a character and of such a quality as to enable the rocket to maintain its serviceability under good average storage conditions for a period of at least two years.

(9) The rocket shall be packed in a container which shall be durable, dampproof, and effectively sealed. If made of metal, the container shall be well tinned and lacquered, or otherwise adequately protected against corrosion.

(10) The date on which the rocket is filled shall be stamped indelibly on the rocket and on the container.

(11) Clear and concise directions for use shall be printed indelibly on the rocket.

MADE this 11th day of July, 1963.

MBAZULIKE AMECHI,  
*Acting Minister of Transport*

## EXPLANATORY NOTE

These Rules arrange ships into classes and provide for the lifesaving appliances to be carried by ships of each class. They include such requirements as appear to the Minister to implement the provisions of the International Convention for the Safety of Life at Sea, 1948, relating to lifesaving appliances.

Supplement to Official Gazette Extraordinary No. 49, Vol. 50, 13th July, 1963  
—Part B

L.N. 81 of 1963

MINISTERS' STATUTORY POWERS AND DUTIES  
(MISCELLANEOUS PROVISIONS) ACT, 1958

Crown Lands and Land Registration Acts (Delegation)  
Notice, 1963

Commencement : 4th July, 1963

In exercise of the powers conferred by subsection (1) of section three of the Ministers' Statutory Powers and Duties (Miscellaneous Provisions) Act, the Minister of Lagos Affairs has delegated the powers specified in the second column of the Schedule hereto as conferred by the enactments set out in the first column thereto to the officers mentioned opposite the respective powers in the third column of the said Schedule.

1. In this Notice,—

"Crown Land" has the meaning assigned to it by section two of the Crown Lands Act but in respect of Land which is situated in the Regions, it is confined to land which is vested in the Governor-General or in any officer of the Federation for the purposes of the Government of the Federation of Nigeria.

2. The Crown Lands and Land Registration Acts (Delegation) Notice, 1961, is revoked.

3. This Notice shall be deemed to have come into operation on the 4th day of July, 1963.

Interpreta-  
tion.

Revocation.  
L.N. 51 of  
1962.

Commence-  
ment.

THE SCHEDULE

<i>Acts and Sections</i>	<i>Powers Conferred</i>	<i>Officers</i>
1. CROWN LANDS ACT, CAP. 45		
(I) Section 4	To grant licences for the occupation of Crown Land wherever situated for a period not exceeding one year.	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.
(II)	In respect of Leases by whomsoever granted of Crown Land wherever situated—	
Section 5 (a)	(a) to accept surrenders thereof;	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.
Section 5 (b) & (c)	(b) to remit wholly or partially covenants or conditions therein and to extend the time for performing conditions;	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.

SCHEDULE—*continued*

<i>Acts and Sections</i>	<i>Powers Conferred</i>	<i>Officers</i>
Section 10	(c) to fix penal rents ;	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.
Section 12	(d) to approve purchases thereof where such leases are sold by or under the orders of the Court.	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.
(III) Section 9 (3) and (4)	To receive notifications of appeals against the fixing of Crown Rents and to agree to the appointment of an arbitrator.	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.
2. CROWN LANDS (FEES) REGULA- TIONS 1950 (No. 18 of 1950)	To reduce or remit the amount of any fee payable under the Schedule to the regulations.	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.
3. LANDS REGIS- TRATION ACT, CAP. 99		
(I) Section 33	To reduce or remit the amount of any fee payable under the Act.	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer.
(II) Section 9 and Regu- lation 3 (e) of Regu- lations made under sections 32 and 34 of the Act.	To exempt by endorsement thereon any instrument affecting land from the requirement that it shall contain a plan of the Land affected.	Permanent Secretary, Ministry of Lagos Affairs. Chief Federal Land Officer. Registrar of Titles.

MADE at Lagos this 4th day of July, 1963.

A. MORA,  
Permanent Secretary,  
Ministry of Lagos Affairs