

MERCHANT SHIPPING ACT

(CHAPTER 179, SECTION 143)

MERCHANT SHIPPING (SURVEY OF PASSENGER STEAMERS) RULES 480/39S 294/54S 96/70S 162/74.

[15th April 1939]

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MERCHANT SHIPPING ACT

(CHAPTER 179, SECTION 143)

**MERCHANT SHIPPING (SURVEY OF PASSENGER STEAMERS)
RULES**

**480/39
S 294/54
S 96/70
S 162/74.**

[15th April 1939]

Citation.

1.These Rules may be cited as the Merchant Shipping (Survey of Passenger Steamers) Rules.

PART I

PASSENGER ACCOMMODATION

Application.

2.The rules in this Part relating to passenger accommodation, stairways, hospitals, latrines, wash places, etc., apply to all new passenger ships, and to existing passenger ships where reasonable or practicable. The rules in this Part shall not apply to pilgrim ships except rules 9, 15, 16, 20, 23 and 25.

NUMBER OF PASSENGERS

Number of passengers.

3.—(1) This rule applies to voyages beyond the Home trade limit, other than voyages in areas specified in rule 4.

(2) The number of passengers allowed shall not exceed the number to be ascertained as follows:

(a) *Saloon or first class.* —The number of properly constructed fixed berths or sofas fitted shall determine the number of passengers to be allowed, if sufficient light and ventilation and a reasonable amount of floor space are provided.

(b) *Second class.* —The number shall be determined in the same manner as for first class passengers.

(c) *Third class.* —The number shall be determined in the same manner as for first class passengers if berths are fitted; if berths are not fitted, the clear area of the deck (that is after deducting all hatchways and encumbrances) in square feet multiplied by the height between decks and the product divided by 72 gives the number to be allowed — 6 feet between decks is to be the minimum height. The weather deck and parts of the poop deck, bridge deck, etc., which are exposed to the weather, are not to be included in the measurements for passengers.

(d) *Berths for children.* —If small berths for children between one and 12 years of age are

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fitted they may be counted if an owner desires it, on condition that the space so allocated for the exclusive use of these passengers is at least 36 clear superficial feet for every two children allowed, and the berths are at least of the following dimensions:

for children between one and 3 years of age ... 3 ft. 6 ins. by 1 ft. 4 ins.

for children between 3 and 8 years of age ... 4 ft. 6 ins. by 1 ft. 6 ins.

(e) Spaces in deck houses and other erections are not to be measured for passengers unless they form part of the permanent structure of the ship.

(f) Airing space is to be set apart, either on the upper deck or on a poop or bridge deck, for the use of all the passengers as follows: For each saloon or first class passenger, 36 square feet; for each second or third class passenger, 24 square feet.

Application to voyagers beyond Home trade limit.

4.—(1) This rule applies to voyages beyond the Home trade limit within the areas set out below:

(a) That portion of the Indian Ocean (together with the adjoining seas and waters) north of latitude 11° South and bounded by the coasts of Africa and Asia.

(b) That portion of the Pacific Ocean (together with the China Seas, and the various seas washing the shores of Indonesia and the Gulf of Thailand) north of latitude 11° South, west of longitude 150° East, south of latitude 32° North and bounded on the west by the coast of Asia but excluding ports and places under the jurisdiction of Japan.

(c) Such extensions of the area defined in sub-paragraph (b) as are necessary to include the voyages within the area bounded by the following lines; from a point on the west side of the States of Malaya in latitude 10° North along the coast of Asia to a point in Vietnam in latitude 11° North; thence to latitude 8° North, longitude 110° East; thence to latitude 8° North, longitude 125° East; thence to latitude 0°, longitude 140° East; thence to latitude 0°, longitude 160° East; thence to latitude 11° South, longitude 170° East; thence to latitude 23½° South, longitude 170° East; thence to latitude 23½° South, longitude 160° East; thence to the east side of Cape York at latitude 11° South; from the west side of Cape York at latitude 11° South to Cape Wessel and Wessel Island; thence along the Australian coast to Port Darwin (Cape Charles); thence to latitude 10° South, longitude 109° East; thence to Christmas Island; thence to latitude 2° North, longitude 94° East; thence to latitude 6° 30' North, longitude 94° East; and thence to the starting point but excluding ports and places under the jurisdiction of Australia.

(2)

(a) *Saloon or first class.* —The number of properly constructed fixed berths or sofas fitted shall determine the number of passengers to be allowed, if sufficient light and ventilation and a reasonable amount of floor space are provided.

(b) *Second class.* —The number shall be determined in the same manner as for first class passengers.

(c) *Third class or unberthed.* —The number shall be determined in the same manner as for first class passengers if berths are fitted; when berths are not fitted the number of passengers shall be determined by dividing the clear area (that is after deducting all encumbrances) in square feet by the minimum number of square feet allowed for each person as follows:

upper deck in efficiently constructed shelter deck space or erection divide by 9;

second deck in upper between decks divide by 9;

third deck in lower between decks divide by 9.

No passengers are allowed on a weather deck covered only by awnings.

The minimum height of passenger spaces shall be 6 feet.

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The airing space for each passenger shall be not less than 4 square feet.

In ascertaining the number of passengers to be carried under this rule on voyages in the Indian Ocean, the duration of such voyages not exceeding 120 hours, unberthed passengers will be considered as being carried between decks if accommodated on a bridge deck or poop deck, provided that such deck has a properly constructed deck next above it, and the space is efficiently closed in to protect the passengers from inclement weather.

Voyages within Home trade limit.

5.—(1) This rule applies to voyages within the Home trade limit.

(2)

(a) *Saloon or first class.* —The number of properly constructed fixed berths or sofas fitted shall determine the number of passengers to be allowed if sufficient light and ventilation and a reasonable amount of floor space are provided.

(b) *Second class.* —The number shall be determined in the same manner as for first class passengers.

(c) *Third class or unberthed.* —The number shall be determined in the same manner as for first class passengers if berths are fitted; when berths are not fitted the number of passengers shall be determined by dividing the clear area (that is after deducting all encumbrances) in square feet by the minimum number of square feet allowed for each person as follows:

upper deck in efficiently constructed shelter deck space or erection divide by 9;

second deck in upper between decks divide by 9;

third deck in lower between decks divide by 9.

The minimum height of passenger spaces shall be 6 feet.

The airing space for each passenger shall be not less than 4 square feet.

In addition the weather decks covered only by awnings may be measured for passengers the number of which is determined by dividing the clear area of the

(i) upper (weather) deck by 9;

(ii) raised quarter deck by 12; and

(iii) shelter deck, poop deck or bridge deck by 12.

When space is provided on a shelter deck, poop deck or bridge deck a length not exceeding half the registered length of the vessel may be measured.

The total number of passengers allowed shall in no case exceed the number denoting the gross tonnage of the ship.

Passengers shall not be carried on more than 3 decks including therein the deck of erections or superstructures on the upper deck.

Voyages within Local trade limit.

6.—(1) This rule applies to voyages within the Local trade limit.

(2)

(a) *Saloon or first class.* —The number of properly constructed fixed berths or sofas fitted shall determine the number of passengers to be allowed, if sufficient light and ventilation and a

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reasonable amount of floor space are provided.

(b) *Second class.* —The number shall be determined in the same manner as for first class passengers.

(c) *Third class or unberthed.* —The number shall be determined in the same manner as for first class passengers if berths are fitted; when berths are not fitted the number of passengers shall be determined by dividing the clear area (that is after deducting all encumbrances) in square feet by the minimum number of square feet allowed for each person as follows:

upper deck in efficiently constructed shelter deck space or erection divide by 9;

second deck in upper between decks divide by 9;

third deck in lower between decks divide by 9.

The minimum height of passenger spaces shall be 6 feet.

The airing space for each passenger shall be not less than 3 square feet.

In addition the weather decks covered only by awnings may be measured for passengers the number of which is determined by dividing the clear area of the

(i) upper (weather) deck by 9;

(ii) raised quarter deck by 12; and

(iii) shelter deck, poop deck or bridge deck by 12.

When space is provided on a shelter deck, poop deck or bridge deck a length not exceeding the registered length of the vessel may be measured. Passengers shall not be carried on more than 3 decks including therein the deck of erections or superstructures on the upper deck.

Voyages within 30 mile limit.

7.—(1) This rule applies to voyages within the 30 mile limit.

(2)

(a) *Saloon or first class.* —The number of properly constructed fixed berths or sofas fitted shall determine the number of passengers to be allowed, if sufficient light and ventilation and a reasonable amount of floor space are provided.

(b) *Second class.* —The number shall be determined in the same manner as for first class passengers.

(c) *Third class or unberthed.* —The number shall be determined in the same manner as for first class passengers if berths are fitted. When berths are not fitted the number of passengers shall be determined by dividing the clear area of the —

(i) upper deck by 6;

(ii) raised quarter deck by 9;

(iii) shelter deck, poop deck or bridge deck by 9; and

(iv) floor of the saloon or cabin under the upper deck by 9.

When there are seats on skylights or companion openings the measurements may be extended to the back of these seats.

Maximum number of passengers allowed.

8.—(1) In the case of open motor boats, launches and similar vessels which have cockpits with shelters fitted over them, plying on approved voyages the maximum number of passengers to be allowed is to be regulated by the area of the clear space available for their accommodation. The forward extremity of this space is to be determined by a surveyor of ships with due regard to the proper stowage of the anchor and cable, and to any other necessary equipment in the bow of the vessel, and the length is to be measured from this point to the foreside of the bulkhead separating the motor space from the passenger space. If the motor is placed amidships an additional space may be available for passengers between the after bulk-head of the motor space and a position near the stern of the vessel to be determined by a surveyor of ships as suitable, having due regard to the steering arrangements.

(2) The breadths are to be measured at suitable intervals to the back of the side benches or to the inside of the gunwale or to the inside of the half deck (where fitted) whichever measurement is least.

(3) The space abreast of the motor should not be included in the passenger measurements unless the motor is enclosed by a close fitting casing or longitudinal bulkheads to the satisfaction of a surveyor of ships and unless the distance between the sides of the casing and the back of the seats is at least 3 feet.

(4) The number of passengers allowed is found by dividing by 4 the area in square feet of the clear space or spaces measured as above. This number, however, must not exceed the number for which seating accommodation is provided (found by dividing the length in feet of each continuous fixed seat by 1.5) or a number equivalent to one represented by two passengers per foot of length of the vessel, whichever is the smaller. In no circumstances, however, must an open launch applying for a Passenger Certificate for the first time be certified to carry more than 100 persons.

(5) In all vessels the seating should be so arranged that there will be no serious obstacle to prevent a person from passing forward and aft quickly in case of emergency.

(6) In addition to the considerations outlined above the number of passengers is also to be regulated by the consideration that, when the vessel is loaded with weights representing the full number of passengers and crew at 140 lbs. for each person, and when the complete outfit and necessary supply of fuel are on board, the clear height of side above water, at the lowest point, is not to be less than 15 inches for vessels 20 feet long or less, and 22 inches for vessels over 40 feet long. For lengths intermediate between 20 and 40 feet the height should be in proportion. The length should be measured from the forward side of the stem to the after side of the stern post, and the clear side should be measured to the top of the covering board or to the top of the wash strake, if one is fitted above the covering board. If, however, a half-deck is fitted, the clear side should be measured to the top of the deck at side or to the top of the gunwale, whichever measurement gives the smaller freeboard. In decked boats the freeboard should be measured from the top of the deck at side and any side scuttles fitted below the deck must be of a non-opening type.

(7) In no case should a surveyor of ships certify a vessel for any particular number of passengers unless he is satisfied that the vessel has sufficient stability to carry that number safely.

MEASUREMENT OF PASSENGER SPACES

Measurements.

9.—(1) The area of the deck space appropriated to passengers shall be ascertained by Simpson's first rule, an appropriate number of breadths being taken.

(2) Each breadth shall be taken between the inner edges of the waterways, ceiling, cargo batten or ships frame whichever breadth is the least, allowing for tumble home at the minimum height of 6 feet if necessary.

(3) The length of the deck available for measurement is to be taken from and to such points as a surveyor of ships may consider fit for the safe and proper accommodation of passengers. Each breadth shall be taken between the inner edges of waterways, raised covering boards, rails or bulwarks whichever breadth is the least.

(4) The clear area of a deck space available for passengers is the deck area after all encumbrances such as hatchways, skylights, companions, machinery casings, dunnage, cattle fittings, navigating spaces, windlass, boats carried inboard, etc. are deducted: Provided that on vessels going on voyages to which rule 4 applies, without calling at intermediate ports to work cargo, the hatchways in the spaces occupied

by unberthed passengers need not be deducted.

SPACES WHICH ARE NOT TO BE MEASURED, ETC.

Between deck houses.

10.When there are deck houses, and the space between the side of the deck house and the inner edge of the waterway, bulkwark rails, other deck houses, etc., is less than 2 feet 6 inches in width, such space shall not be measured for passengers.

Sponsons.

11.In paddle-wheeled ships neither the sponsons nor the tops of houses upon the sponsons shall be included in the measurements for passengers.

Overhanging decks.

12.—(1) No portion of the top of a midship house or bridge deck, or the like, which is either always or occasionally used for purposes of navigation, is to be included in the measurement for passengers, and no portion of a bridge deck which extends beyond the sheer strake of the ship, nor any portion of a deck which extends beyond the sides or ends of a house or saloon, is to be so included.

(2) Unless specially approved by the Surveyor-General of Ships no portion of a deck which is carried on stanchions only shall be measured, nor any deck which is supported by an extension of the ship's frame above the upper deck, unless the frames are plated over so as to form a bridge house.

Well-decked ships.

13.In the case of well-decked ships, the deck spaces between the top gallant forecastle and raised quarter deck, bridge house, or poop, as the case may be, shall not be included, in the measurement for passengers, unless the deck is, in the opinion of a surveyor of ships, of sufficient height above the water, as indicated by the deepest subdivision draft to render it fit for their accommodation, and the freeing ports are fitted with suitable grids for the protection of the passengers, and children, and are in accordance with the following scale:

Length of Bulwarks in "Well" in Feet	Freeing Ports area on each side in Square Feet
15	8.0
20	8.5
25	9.0
30	9.5
35	10.0
40	10.5
45	11.0
50	11.5
55	12.0
60	12.5
65	13.0

Above 65, one square foot to each additional 5 feet length of bulwarks.

Limitation of length.

14.No part of a forecastle deck is to be included in the measurements, and if the vessel has no forecastle the foremost ordinate of the space measured shall not be nearer the foreside of the stem than one-eighth of the vessel's registered length. No space which is required for working the anchors or the boats or for purposes of navigation is to be included, and no deck space is to be measured over which the first, second or third class passengers require to pass in going from their quarters to the closets or to the airing spaces set apart for their use. The aggregate length of all the spaces so measured for unberthed passengers on any deck, whether below or above the weather deck, shall not exceed the registered length of the vessel.

Airing space.

15.A passenger ship shall not carry more passengers than the number for which air or promenade space is provided, to the satisfaction of a surveyor of ships. The airing space is not to be included in the area available for deck passengers except as provided in rule 28.

Deck in relation to Load Line.

16.A ship shall not carry passengers on more than one deck which is below the Statutory Load Line mark (centre of disc) at any portion of the length of the ship.

Inefficient erections.

17.The spaces within the poop, round house or deck house shall not be measured for passengers unless they form, in the opinion of a surveyor of ships, part of the permanent structure of the ship.

Minimum height.

18.Spaces between-decks in which the height from the floor to the deck above is less than 6 feet shall not be measured for passengers.

Lower hold.

19.The lower hold shall not be considered as proper accommodation for passengers, neither shall spaces which consist of temporary accommodation upon the cargo, nor spaces lighted and ventilated by hatches only, except as provided in rule 33 (2).

Passengers only allowed in measured spaces.

20.Passengers shall not, in any circumstances, be carried in a space or spaces not measured for their accommodation.

Cattle on weather deck.

21.If cattle are carried on the weather deck no portion of the deck abreast of the place where the cattle are carried shall be reckoned as air or promenade space for passengers unless it is separated from such place by a wooden partition or otherwise to the satisfaction of the Port Master or a surveyor of ships.

Lamp room.

22.No lamp room shall be so placed as to constitute a danger to passengers or crew.

Oil fuel spaces.

23.Passengers are not to be berthed or accommodated in a space adjoining an oil bunker unless separated therefrom by an additional steel vapour-proof bulkhead, so arranged that the space between the two bulkheads shall be well ventilated and accessible. No objection need be raised, however, to passenger spaces being situated on a deck forming the crown of an oil fuel space, provided that the deck is thoroughly oil tight, that within the quarters there are no manholes or openings to the oil spaces, that the flooring consists of a specially approved non-inflammable composition at least 1½ inches thick, and that the spaces are especially well ventilated.

Awnings.

24.If the accommodation or airing space is situated on a weather deck, suitable awnings and side curtains shall be fitted for the protection of passengers from inclement weather.

Height of rails and bulwarks.

25.—(1) When rails and stanchions are fitted to any deck or superstructure to which passengers are admitted the top of the uppermost rail shall not be less in height than 3 feet 6 inches above the top surface of the deck or superstructure at the inner edge of the waterway and the rails shall not be more than 9 inches apart, unless strong netting is provided to the satisfaction of a surveyor of ships. Provided that in passenger ships not going on voyages beyond the 30 mile limit, the height of the rails may be reduced to 3 feet.

(2) When close bulwarks are fitted they shall be at least 3 feet 6 inches above the top surface of the deck or superstructure at the inner edge of the waterway and the freeing ports shall be fitted with grids to the satisfaction of a surveyor of ships. Provided that in passenger ships not going on voyages beyond the 30 mile limit, the height of the bulwarks may be reduced to 3 feet.

Deduction for cattle and stores, etc.

26.When cattle or other animals, cargo or stores are carried in a space measured for passengers the number of passengers carried shall be reduced accordingly.

Arrangements when cattle are carried.

27.In any passenger ship where cattle are carried in the between decks or holds, the space occupied by them shall be effectually shut off from the passenger space by bulkheads, wooden partitions, or otherwise to the satisfaction of the Port Master or a surveyor of ships. The cattle space shall also be

separately ventilated and drained.

Airing space not required.

28.In a shelter deck space, airing space need not be provided if there are clear openings in the ship's side not less than 2 feet in depth and the areas of the clear opening, or if there is more than one clear opening, on the same side of the space the total area of such openings, on each side of the space shall not be less than the area of an opening 2 feet deep and of a length equal to one third of the length of the space:

Provided that if the openings are closed by watertight shutters, in the manner required to obtain a decreased freeboard assignment, airing space on a weather deck shall be provided for each passenger as required by rules 4, 5 and 6.

The term "space" means that part of the deck between bulkheads, or a combination of side and/or round houses which are equivalent to bulkheads.

VENTILATION

Ventilation.

29.Adequate ventilation shall be provided for first and second class passengers. For third class berthed and for unberthed passengers the following rules shall apply.

General.

30.—(1) All ventilation shall be arranged to the satisfaction of the Port Health Officer and a surveyor of ships.

(2) Where a system of cowl ventilation is provided the cowls shall be placed in such positions that the ventilating shafts can be kept open in ordinary weather, and they shall be arranged, as far as practicable, to give a down draught at one end of the compartment and an up draught at the other.

(3) Each compartment shall be ventilated independently of any other compartment, and holds shall be ventilated in such a manner as not to open into, or affect in any way, the passenger compartments.

(4) If it is proposed to adopt a mechanical system of ventilation or any new system of ventilation, full details of the arrangements, with drawings, shall be submitted to the Surveyor General of Ships for consideration and approval.

(5) Trunkways built solely for ventilation and carried to such a height above the weather deck that it will not be necessary to close them under any circumstances, may be accepted as either air inlets or outlets, but not as both, to compartments otherwise ventilated artificially or by cowls; but when a trunkway is thus used in combination with cowl ventilators, its area shall be at least double that of a cowl ventilator doing similar duty.

(6) All hospitals shall be ventilated independently and to the open air; the ventilators shall have at least 5 square inches of inlet and 5 square inches of outlet area per adult, with means for controlling the size of these openings.

(7) All sanitary arrangements shall be suitably and efficiently ventilated to the open air.

(8) No ventilator may be carried through any transverse watertight bulkhead without the consent of the Surveyor-General of Ships.

Ventilation by cowls.

31.—(1) Ventilators shall be provided to each upper between deck and shelter deck space and shall have an aggregate area of not less than 5 square inches for each passenger accommodated in the compartment, that is 2½; square inches as inlet and 2½; square inches outlet.

(2) The ventilators referred to in paragraph (1) shall be exclusive of side scuttles, doors, hatchways, skylights and other apertures not built solely for ventilation.

(3) If the compartment is in the wings between the ship's side and the boilers or engine room the area of the ventilators shall be increased by 33%.

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(4) All cowl ventilators must be carried to a convenient height above the deck and be clear of obstructions. In these ventilators the area of the cowl shall be at least 50% greater than that of the pipe.

(5) When the pipes of cowl ventilators have curved bends or knees, and the angles do not exceed 30°, no additional area need be provided; but for curved bends or knees where the angle exceeds 30° the following additions to the area must be made:

(a) <i>Curved bends.</i> —	Angles from 30° to 60°, add 5% for each bend.
<i>Curved bends.</i> —	Angles from 60° to 90°, add 10% for each bend.
(b) <i>Knees.</i> —	Angles from 30° to 60°, add 16% for each bend.
<i>Knees.</i> —	Angles from 60° to 90°, add 36% for each bend.

If the radius of the inner side of a bend is less than the diameter of the pipe, the bend shall be regarded as a knee.

(6) Ventilators unless specially approved must not exceed 452 square inches in area (24 inches in diameter), unless they communicate to two or more compartments, in which case the area of the passage or pipe leading to any one of the compartments so ventilated must not exceed 452 square inches.

(7) Plans of special forms of cowl ventilators may be submitted to the Surveyor-General of Ships for consideration. If the ventilator is found satisfactory, it will have an area value assigned to it.

(8) Ventilating side scuttles, if made according to plans approved by the Surveyor-General of Ships, may be accepted as equivalent to a cowl pipe having an area equal to the aggregate area of the orifices or valves, the area being measured at the most contracted part.

Ventilation by mechanical systems.

32.—(1) Efficient mechanical ventilation shall be provided for each compartment in the lower between deck spaces.

(2) When passenger compartments are ventilated by mechanical means the arrangements for the delivery and distribution of fresh air and the exhaust of vitiated air, must be not less efficient than those described in the preceding rules for the cowl system of ventilation.

(3) At least 830 cubic feet of air per hour for each adult must be delivered under the normal conditions which would prevail at sea, with an increase of 33% in the case of compartments between the machinery casings and the ship's side. The delivery of air in the hospitals should be at least 1,600 cubic feet of air per hour for each adult. Means shall be provided in the system to control the supply of air to hospitals and care shall be taken that the vitiated air from the hospitals and the sanitary compartments does not exhaust into other compartments but into the open air.

(4) Where any compartment is to be ventilated by mechanical means, arrangements should be made, either by interconnecting the air ducts from two or more independent sources of supply, or by additional independent means of ventilation or otherwise, to secure a sufficient supply of air, even in the event of a breakdown of any part of the mechanical system.

LIGHTING

Lighting.

33.—(1) Efficient lighting shall be provided for first and second class passengers.

(2) Every compartment measured for the accommodation of third class berthed or for unberthed passengers shall be lighted by day by means of good natural light, to the satisfaction of the Port Health Officer and a surveyor of ships. Compartments depending entirely on artificial light shall not be measured for the accommodation of passengers without the sanction of the Surveyor General of Ships. Ordinary oil lamps are not regarded as a proper means of lighting unless specially approved.

DOORS AND BOOBY HATCHES

Doors and booby hatches.

34.—(1) All doors and entrances to passenger compartments shall be equal in width to the ladders or

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stairways to which they give access, and such doors shall be divided and shall be made to open outwards.

(2) Emergency doors shall be provided to all compartments entered in or through long deckhouses which open only on one side of the ship.

(3) Over each of the hatchways leading to the passenger compartments there must be a booby hatch or other substantial covering of such character as will, in the opinion of a surveyor of ships, afford the greatest amount of light and air and protection from the weather that the case will admit. Flat sliding hatches will not be considered sufficient for this purpose. Booby hatches having hinged flaps instead of hoods and hinged doors are not regarded as satisfactory and shall not be accepted as the only means of ingress to, or egress from, a passenger compartment.

STAIRWAYS

Stairways.

35.—(1) For the purpose of this rule, the term weather deck shall be understood as the uppermost complete deck, except in the case of compartments, from which the only access to the open air is on the deck of a poop, bridge, forecastle or other closed-in space, in which case the deck over that space shall be deemed the weather deck.

(2) Stairways or ladders leading to the weather deck shall be provided in accordance with the following requirements:

(a) separate stairways or ladders shall be provided for each passenger compartment, and in no case may the only means of access to a compartment consist of openings through a watertight bulkhead, unless these openings are trunked watertight to the margin line. When a compartment provides accommodation for a large number of passengers, the stairways shall be distributed in such a manner as to prevent congestion at any part of the compartment;

(b) the aggregate width of the stairways or ladders from each compartment shall be not less than one inch for every 3 adults accommodated in the compartment or compartments from which the stairways lead;

(c) in the case of stairways which provide access to the weather deck for the passengers berthed in two compartments, one above the other, the stairways leading from the uppermost compartment to the weather deck shall have an aggregate width of one inch for every 3 adults accommodated in both compartments;

(d) when the stairways leading from any compartment or compartments to the weather deck are enclosed by a poop, bridge, forecastle or other closed-in space, and when the bulkheads forming the ends of these erections have doorways in them, the aggregate width of these doorways, plus the stairways leading from the weather deck to poop, bridge or forecastle deck, shall not be less than that required by subparagraphs (b) and (c);

(e) if, in the opinion of a surveyor of ships there is serious difficulty in providing stairways of the required aggregate width leading from any individual compartment directly to the weather deck, a surveyor of ships may sanction a reduction in the aggregate width, not exceeding 25% provided the deficiency is made up by an increase in the width of the stairways in an adjoining compartment intended for the accommodation of passengers of the same class and sex, and communicating directly with the compartment in question by doorways of sufficient width. No concession is, however, to be allowed under this paragraph unless at least two separate stairways, not less than 30 inches wide, are provided from the compartment in question;

(f) the stairways from passenger compartments shall lead directly to a space on the weather deck which is at all times accessible to unberthed passengers. Arrangements by which the direct access of unberthed passengers to the deck is by means of emergency stairways leading into the cabin passengers' accommodation or into galleys or other spaces not intended for the accommodation of unberthed passengers, are considered undesirable and shall not be accepted unless full particulars with plans of the proposed arrangement have been submitted to the Surveyor-General of Ships before the construction of the vessel is commenced, and have received the Surveyor-General of Ships' approval. Such stairways shall in no case be accepted if fitted with doors the means of securing which are outside the unberthed passengers' compartments;

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(g) no ladder or stairway is to be less than 30 inches in width. No stairway is to be more than 50 inches in width unless fitted with an intermediate rail or rails. Such rails are not to be less than 30 inches or more than 50 inches apart. The width of all ladders and stairways shall be measured on the tread or step and within the sides, unless the handrails encroach on the tread or step, in which case the distance between the rails is to be taken as the width;

(h) there shall be at least 6 feet clear space in a vertical direction above each stair;

(i) all ladders and stairways shall be fitted on each side with efficient handrails, not ropes, and if open ladders are provided for a compartment to be occupied by women or children an intermediate rail shall be fitted on each side;

(j) all ladders and stairways shall be as well lighted as the rest of the compartment, both by day and night;

(k) ladders shall, as far as possible, be pitched fore and aft, and shall not be too steep, the angle from the vertical being as near 37 degrees as the arrangements of the ship will admit. All ladders intended for the accommodation of women are to be lined on the back; and

(l) on existing ships where permanent stairways or ladders are not provided, substantial and securely fixed stairways or ladders shall be fitted in hatchways leading to spaces occupied by passengers, and over each such hatchway there shall be erected an efficiently secured booby hatch, or other substantial covering, which in the opinion of a surveyor of ships, will afford the greatest amount of light and air, and of protection from the weather which the case will admit.

WATER CLOSETS

Water closets.

36.For first and second class passengers properly constructed, lighted and ventilated water closets shall be provided, to the satisfaction of the Surveyor-General of Ships, for the use of male and female passengers respectively.

Latrines.

37.—(1) Every passenger ship going on voyages beyond the 30 mile limit shall be fitted to the satisfaction of a surveyor of ships, with permanent latrine accommodation for the exclusive use of unberthed and third class passengers.

(2) Not less than two latrines shall be fitted and one additional latrine shall be fitted for every 50 or part of 50 passengers in excess of 100 passengers which the ship is certified to carry:

Provided that no such ship shall be required to be fitted with more than 60 latrines:

Provided further that in any ship, going on voyages within the home trade limit, half the scale of latrines prescribed in this rule, with a minimum of two, shall suffice.

(3) The latrines shall be situated in a convenient and accessible place, and shall be fitted with approved screens between each place of accommodation. Approved means shall be taken to secure adequate privacy.

They shall be efficiently ventilated, and provided with means of lighting both day and night, to the satisfaction of a surveyor of ships.

(4) Separate latrines shall be apportioned to, and conspicuously marked for, the use of males and females.

(5) All latrines shall be regularly cleaned and disinfected and they shall be flushed with a sufficient flow of water. Care shall be taken that none of the flush finds its way outside the latrines except directly overboard.

WASHING PLACES

Washing places.

38.—(1) Every passenger ship going on voyages beyond the Home trade limit shall be provided with, for the use of unberthed and third class berthed passengers, not less than two washing places, sufficiently screened from the public view, of which places at least one shall be set apart for the exclusive use of females.

(2) These washing places shall be provided with taps or douches, in the ratio of one for each 100 passengers, for supplying sea or fresh water for the purpose of ablution.

(3) The washing places shall be placed apart from the latrines.

FUEL, WATER AND PROVISIONS

Provisions.

39.—(1) Every passenger ship shall be provided with fuel, water, and provisions (if the passengers are to be provisioned by the ship) of a quality to the satisfaction of the Port Health Officer, and sufficient in quantity for the intended voyage, including such detention by accident or quarantine as may be possible.

(2) The fresh water shall be stored in steel tanks, in approved positions in such quantity as to supply each passenger with one imperial gallon per diem during the voyage.

(3) It shall not be necessary to carry more than half the above quantity, if the ship has on board an efficient distilling apparatus of approved pattern, and if a surveyor of ships satisfies himself before the commencement of the voyage that the apparatus is capable of producing one imperial gallon of pure fresh water in every 24 hours, for every person on board.

HOSPITAL ACCOMMODATION FOR UNBERTHED AND THIRD CLASS BERTHED PASSENGERS

Hospital.

40.—(1) Every passenger ship going on voyages beyond the Home trade limit, and certified to carry more than 100 passengers, shall be fitted with a permanent hospital.

(2) To provide for cases of infectious diseases or for any general outbreak of sickness when the permanent hospital accommodation becomes insufficient, each ship shall carry a temporary hospital of such material, construction, and situation as may be approved by the Port Health Officer and a surveyor of ships.

(3) The floor space of each hospital shall be determined as follows:

for 101 to 150 passengers	...	72 superficial feet,
for 151 to 200 passengers	...	96 superficial feet,
for 201 to 250 passengers	...	120 superficial feet,
for 251 to 300 passengers	...	144 superficial feet, and
for more than 300 passengers the floor space of each hospital shall not be less than 144 superficial feet.		

The number of bunks to be fitted shall be determined by dividing the floor space in superficial feet by 24 but not more than 6 bunks need to be fitted for more than 300 passengers.

(4) The height shall not be less than 6 feet.

(5) When more than 50 female passengers are carried, there shall be a separate permanent hospital set apart for them, containing not less than two bunks and having a floor area of not less than 72 square feet, and a height of not less than 6 feet. The women's hospital may also be used for children under 12 years of age.

(6) All hospitals shall be on or above the upper deck and shall be lighted, ventilated and fitted, if required, with awnings to the satisfaction of the Port Health Officer and a surveyor of ships.

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(7) Permanent hospitals shall form part of the permanent structure of the ship. Hospitals, whether permanent or temporary, shall be provided with separate latrines, which shall be as near as practicable to the hospital accommodation.

Medical officer.

41.—(1) Every passenger ship going on voyages beyond the home trade limit carrying 100 persons and upwards including crew and passengers shall carry a medical officer possessing one of the several diplomas, degrees or licences mentioned in Part A, B or C of the Second Schedule.

Medical officer's diary.

(2) The medical officer of every passenger ship shall be provided with and keep posted the following documents:

(a) a medical diary for recording the principal events of the voyage in connection with the medical history of the passengers, and any advice he may give to the master of the ship and of the compliance with or neglect of such advice;

(b) an admission and discharge book for every case brought under treatment, in the form set forth in the Third Schedule; and

(c) a register of deaths, in the form set forth in the Fourth Schedule.

(3) The medical officer of every passenger ship is to keep his diary, required by paragraph (2)

(a), carefully posted, and on arrival at any port, shall submit his diary and returns to the Port Health Officer of that port.

(4) If the medical officer omits to keep such records, or to produce the records before the Port Health Officer at any port, he shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$250.

GALLEYS

Galleys.

42. Galleys are to be fitted sufficient to supply the needs of the passengers, if the passengers are to be provisioned by the ship.

GOODS ON PASSENGER DECKS

Goods.

43.—(1) When any part of the between-decks of a passenger ship is occupied by cargo, and passenger accommodation is provided contiguous thereto, the cargo shall be stowed to the satisfaction of the Port Master or a surveyor of ships.

(2) No deck cargo shall be carried on the forecastle deck of a passenger ship and in the case of ships having no forecastle or having the bridge house joined to the forecastle or having a complete shelter deck, cargo shall not be carried nearer to the fore side of the stem than one-eighth of the ship's registered length.

(3) No part of the cargo or stores shall be carried on the weather deck at a greater height from the deck than the rail, bulwark, or 3 feet 6 inches whichever height is the least unless approved by the Port Master or a surveyor of ships. Cargo or stores shall not be carried in alleyways, and two passages fore and aft, of a minimum width of 2 feet 6 inches — one on each side of the ship — shall always be kept clear of cargo or stores.

Dangerous stowage.

(4) No deck cargo or fuel of any description shall be carried in the vicinity of any opening to the engine room or stokehold which would prevent the immediate closing of such opening.

Dangerous loading of deck cargo.

(5) The Port Master or a surveyor of ships may refuse to allow any passenger ship to load any or part of a deck cargo, or if loaded, may require the unloading of this cargo if, in his opinion, such deck cargo or part

of a deck cargo adversely affects the ship's stability of seaworthiness or endangers the health or lives of the passengers.

Hatches.

(6) When cargo is to be loaded in a hatch situated on a deck to which passengers have access, the hatch must be fitted with guard chains or other satisfactory means to prevent any possibility of accident to the passengers.

DEPARTURE OF PASSENGER SHIPS

Procedure before departure.

44. A sea-going passenger ship shall not proceed to sea until visited by the Port Master or any officer lawfully acting for him. This officer shall after counting the passengers fill in a declaration in the form contained in the First Schedule. The fly leaf shall be signed by the officer and given to the master, who must produce it when called on to do so by the Port Master at the port of destination, while the counterfoil shall be signed by the master and retained by the officer. The Port Clearance shall then be delivered and the vessel shall proceed on her voyage forthwith. No passengers or cargo of any description shall be taken on board after the said officer has left the ship.

Penalties.

45. Any person committing any breach of rule 20, 21, 24, 26, 27, 37 (4), 38, 39, 43 or 44 shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$250, and where the breach is a continuing one to a further fine not exceeding \$10 for every day during which the breach continues after conviction, or to imprisonment for a term which may extend to 3 months or to both.

PART II

MANUFACTURE AND TESTING OF MATERIALS OF CONSTRUCTION

GENERAL

Materials for construction to conform with requirements of Part.

46. Materials intended for use in the construction of hulls, boilers and their appurtenances, machinery, fittings and equipments of ships to which these Rules apply shall, except where otherwise specified, be manufactured, tested and found to conform with the requirements of this Part.

Wrought iron, mild steel plates and sections for hulls.

47.—(1) Owing to the uniform character and quality of wrought iron and mild steel plates and sections used in the construction of the hulls of ships, surveyors need not necessarily witness the tests of such material.

(2) In the case of a classed steamship a surveyor of ships shall be satisfied that these materials comply with the requirements of the Classification Society. If the steamship is unclassified, the surveyor of ships shall see that the materials have been manufactured and tested in accordance with an approved standard specification, and for this purpose the certificates of the steel makers or of the surveyors of any approved Classification Society may be accepted.

Selection and treatment of test-pieces.

48.—(1) All the test-pieces required shall be selected and stamped by a surveyor of ships, and, except where otherwise specified in this Part, the tests shall be made in his presence at the place of manufacture and before the despatch of the material.

(2) Test-pieces shall not be cut off castings or forgings until they have been stamped by a surveyor of ships after the annealing has been completed. The marks stamped on the test-pieces, castings and forgings shall be such that the charge from which they are made can be readily identified.

(3) If any material, including plates, is annealed or otherwise heat treated after test-pieces have been detached, the testpieces shall be similarly and simultaneously treated with the material before they are tested. The test-pieces shall not be further heated excepting those intended for temper bending tests.

(4) When a number of articles are cut from one plate, bar or forging, the number of tests required shall be the same as that required from the original piece, provided the articles have not been further heated or forged, and can be identified as having formed part of the original piece.

(5) In the case of a forging, the test-pieces shall be taken from a part of the forging of sectional dimensions not less than those of the body of the forging. In special cases, where the couplings of a shaft are formed by upsetting, the test-pieces may be cut from the outer edge of the coupling.

(6) When a number of small forgings are made from the same ingot, or a number of small castings from the same charge of steel, the full number of tests specified hereafter need not be made; tensile and bending tests at the rate of one of each for every 4 articles shall, in such cases, be sufficient.

(7) For small sectional material the bending tests may be made from the flattened bar.

(8) Bending tests may be made either by pressure or by blows.

(9) Except where specially mentioned in these Rules, any straightening of test-pieces, which may be required, shall be done cold.

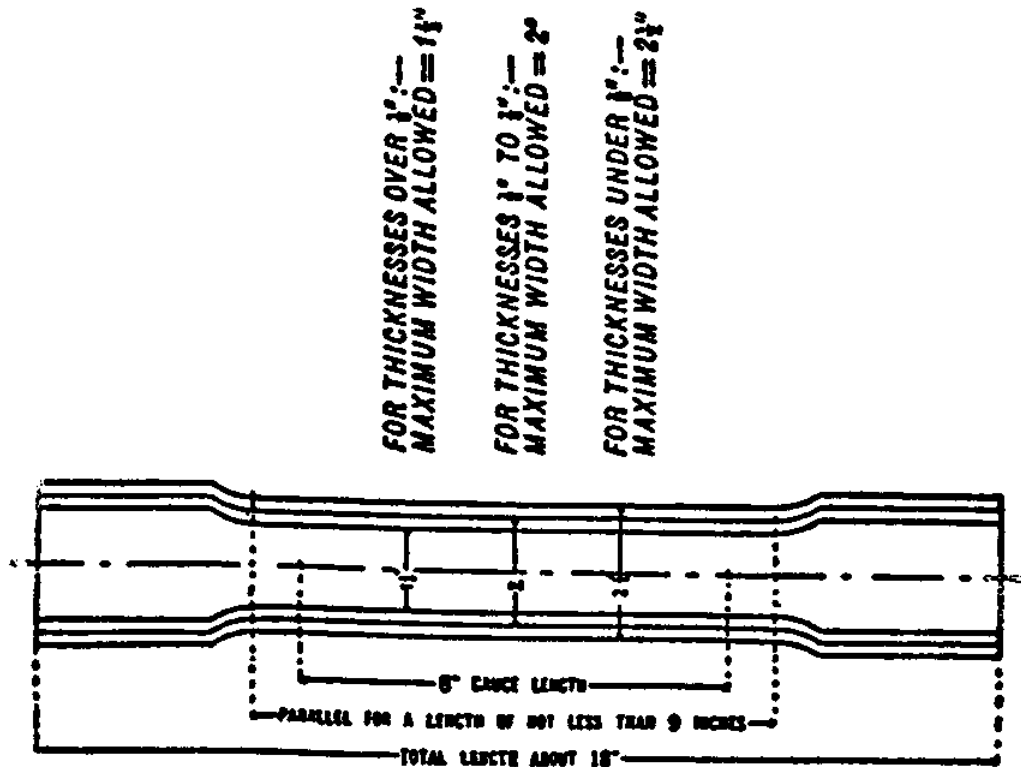
STANDARD TEST-PIECES

Standard tensile test-pieces.

49.—(1) The forms and dimensions of test-pieces shall be as follows:

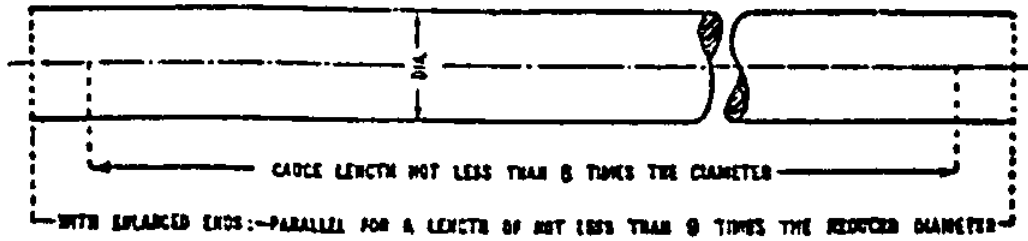
PLATES TEE AND ANGLE BARS

Test-piece A



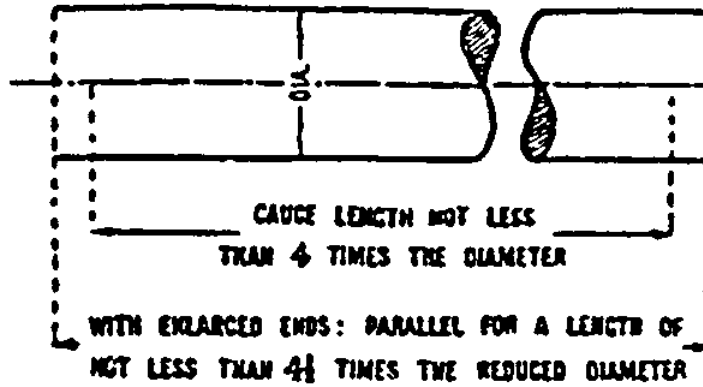
BARS, RODS AND STAYS

Test-piece B



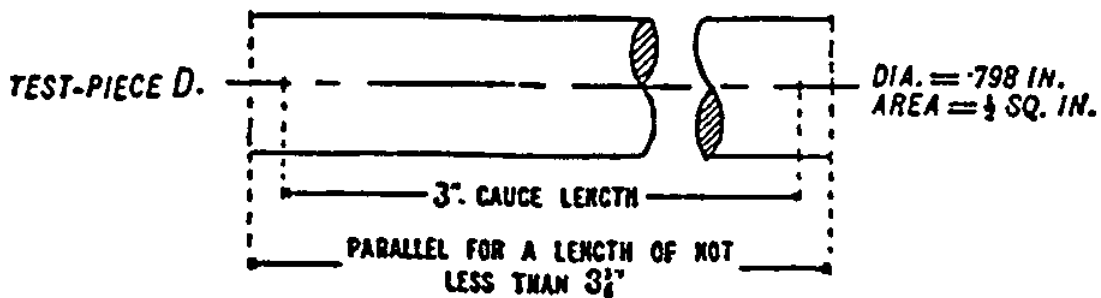
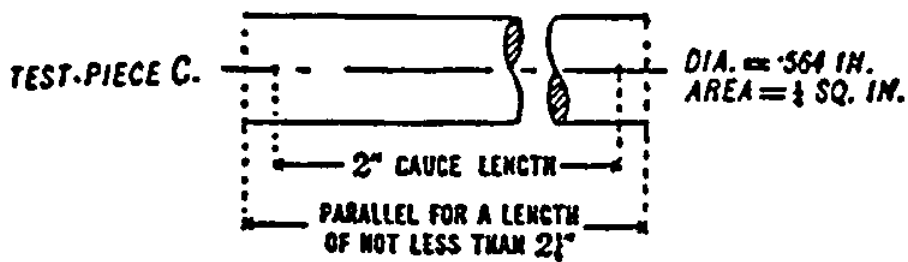
ALTERNATIVE TEST-PIECE F

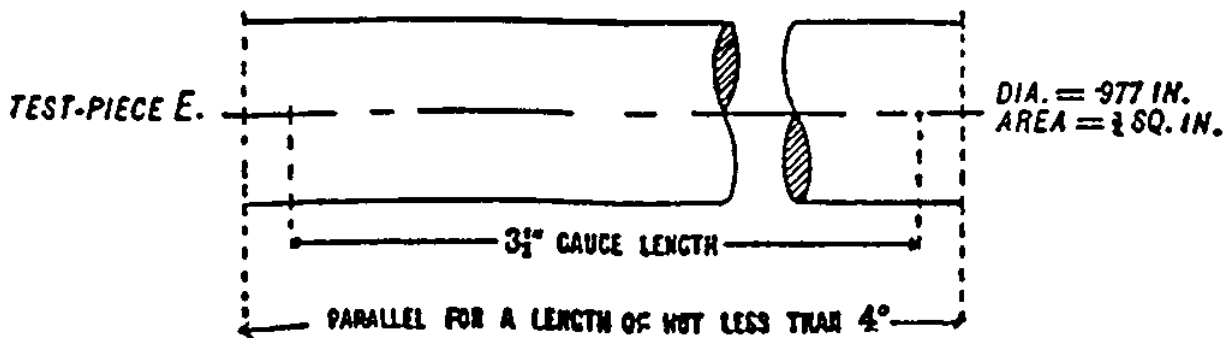
For Test-pieces over one inch in Diameter



FORGINGS AND CASTINGS

Test-pieces, C, D and E





(2) The gauge length and the parallel portion of the testpieces shall be as shown in paragraph (1). The form of the ends shall be as required in order to suit the various methods employed for gripping the test-piece.

(3) Any reduction of the specimens to the form required shall be effected by machining, and whenever practicable, the rolled surfaces shall be retained on two opposite sides of the testpieces taken from plates, angle bars and tee bars.

Bending test-pieces.

50.—(1) The test-pieces sheared from plates, angle bars and tee bars, for bending tests, shall not be less than 1½ inches wide; but for small bars, the whole section may be used.

The rough edge caused by shearing samples ½ inch in thickness and above may be removed by filing or grinding; and samples 1 inch or more in thickness may have the edges machined but the test-pieces shall receive no other preparation.

(2) The bending test-pieces of round bars shall, whenever practicable, be of the full diameter of the bars, as rolled, but those of large section may be machined to a diameter of 2 inches.

(3) The bending tests of forgings and castings shall be made with rectangular test-pieces, 1 inch wide by ¾ inch thick, which shall be machined to size and have the corners rounded to a radius of 1/16 inch; they shall be bent over their thinner section.

(4) The test-pieces used for temper bending tests shall be similar to those used for cold bending tests.

Duplicate tests.

51.—(1) Should either a tensile or a bending test fail to fulfil the test requirements, and should a surveyor of ships consider that the test-piece does not fairly represent the quality of the material, two duplicate specimens may, if the makers desire, be tested; and, if the results obtained from both are satisfactory, the quality of the article may be judged thereby, and not by the original test which failed. If, however, either of the duplicate tests fails, the article or articles represented shall be rejected.

(2) Should any tensile test-piece break at a point outside the middle half of its gauge length, the test may, at the makers' option and with a surveyor of ships approval, be discarded, and another test may be made from the same plate, bar, forging or casting.

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(3) Whenever in the opinion of a surveyor of ships the material appears to be of doubtful quality, a greater number of tests than specified in this Part shall be made, so that the surveyor of ships shall be satisfied as to the quality of the material used.

Stamping of material.

52.—(1) Every article which has satisfactorily withstood the prescribed tests shall be stamped with a number or identification mark such that the charge of steel from which it was made can be readily identified. In addition to this, plates and bars shall be stamped with the makers' name or trade mark, and plates with the results of any tests which are made from them.

Freedom from defects, etc.

53. The finished material shall be sound and free from cracks, surface flaws and laminations, and no hammer-dressing, patching, burning or electric welding is permissible. In the event of any material proving unsatisfactory in the course of working or machining, it shall be rejected notwithstanding any previous certification of satisfactory testing.

GENERAL REQUIREMENTS FOR BOILER STEEL

Process of manufacture.

54.—(1) All steel intended for use in the construction of boilers shall be made by the open hearth process, acid or basic.

(2) Where steel intended for boilers is not produced in the works at which it is rolled, a certificate shall be supplied to a surveyor of ships deputed to witness the testing of the material, stating the open hearth process by which it was made, the name of the steel maker who supplied it, also the numbers of the charges for reference to the books of the steel maker. The number of the charge shall be marked on each plate or bar for the purpose of identification.

BOILER PLATES

Number and nature of tests.

55.—(1) A tensile and a cold bending test shall be taken from each plate, as rolled; but, when the weight of the plate exceeds 2½ tons, a tensile and a bending test shall be taken from each end. In addition to the tests mentioned one temper bending test shall be made from every shell plate which has a tensile strength above 35 tons per square inch.

The plates for butt straps, man hole doors, and for compensating rings around the openings for doors, shall be tested in a similar manner. The bending tests from plates which have to be flanged or worked in the fire or which, when in use, will be exposed to flame shall be temper bending tests.

(2) Test-pieces may be cut from the rolled material either lengthwise or crosswise, but cross check tests of boiler shell plates and butt straps shall be made as required by a surveyor of ships.

Tensile tests.

56.—(1) The tensile breaking strength of steel plates for shells and girders, determined from standard test-pieces, shall be ordinarily between the limits of 28 tons and 35 tons per square inch, but a range of not more than 4 tons per square inch shall be permitted in any one case.

(2) For plates intended for flanging or welding, and for combustion chambers and furnaces, the tensile breaking strength shall be between the limits of 26 tons and 30 tons per square inch.

(3) The elongation, measured on a standard test-piece having a gauge length of 8 inches, shall be not less than 20% for material of $\frac{3}{8}$ inch in thickness and upwards required to have a tensile breaking strength between the limits of 28 tons and 35 tons per square inch; and not less than 23% for material of $\frac{3}{8}$ inch in thickness and upwards required to have a tensile breaking strength between the limits of 26 tons and 30 tons per square inch.

For material under $\frac{3}{8}$ inch in thickness the elongation may be 3%, but not more than 3%, below the above named elongations.

Bending tests.

57.—(1) For both cold and temper bends the test-piece shall withstand, without fracture, being doubled over until the internal radius is equal to 1½; times the thickness of the test-piece, and the sides are parallel.

(2) The temper bending test-pieces shall be similar to those used for cold bending tests. The test-pieces shall be heated to a blood-red colour, judged indoors in the shade, and quenched in water at a temperature not exceeding 80° Fahr.

Annealing.

58.Plates (especially those of great thickness) intended for the shells of boilers shall be annealed.

ANGLE, RIVET AND STAY BARS

Number and nature of tests.

59.—(1) One tensile test shall be made from each 15 or part of 15, bars rolled of each section or diameter from the same charge, but not less than two tensile tests shall be made, unless the total number of bars rolled from the same charge is 8, or less than 8, and the bars are of the same section or diameter, when one test will suffice. For round bars 1¾ inches in diameter, and under, the numbers 50 and 20 shall be substituted for 15 and 8 respectively for determining the number of tests required.

(2) A cold bending test shall be made from stay bars in the same proportion as that in which tensile tests are required; and a cold bending test shall be made from each angle or tee bar rolled. No bending tests need be made from rivet bars.

Tensile tests.

60.—(1) Longitudinal stays shall have a tensile strength between the limits of 28 tons and 35 tons per square inch, with an elongation of not less than 20 or 24% measured on standard testpiece *B* or *F* respectively, but a range of not more than 4 tons per square inch shall be permitted in any one case.

(2) Combustion chamber stays shall have a tensile strength between the limits of 26 tons and 30 tons per square inch, with an elongation of not less than 23 or 28% measured on standard testpiece *B* or *F* respectively.

(3) Angle and tee bars shall have a tensile strength between the limits of 28 tons and 32 tons per square inch, with an elongation of not less than 20% measured on the standard test piece *A*.

For material under $\frac{3}{8}$ inch in thickness the elongation may be 3% less.

(4) Rivet bars shall have a tensile strength between the limits of 26 tons and 30 tons per square inch of section, with an elongation of not less than 25 or 30% measured on standard test piece *B* or *F* respectively. The bars may be tested the full size as rolled.

Bending tests.

61.The test pieces shall withstand without fracture, being doubled over until the internal radius is equal to 1½; times the thickness or diameter of the test-piece, and the sides are parallel.

Tests for rivets.

62.—(1) A few rivets of each size shall be selected by a surveyor of ships from the bulk, and shall be subjected to the following tests:

(a) the rivet shanks shall be bent cold and hammered until the two parts of the shank touch, without fracture on the outside of the bend; and

(b) the rivet heads shall be flattened, while hot, until their diameter is two and a half times the diameter of the shank, without cracking at the edges.

(2) A few check tensile, tests of shell rivets shall also be made as required by a surveyor of ships. The elongation shall, when practicable, be taken in a length of 2½; times the diameter of the prepared part; the tensile strength shall be from 27 to 32 tons per square inch and the contraction of area about 60%.

WROUGHT IRON FOR COMBUSTION CHAMBER STAYS

Number and nature of tests.

63. In order that iron screw stays may be approved of the same size as would be required for mild steel the iron shall withstand the following tests:

(a) the bars as rolled are to be placed in batches of 20, and one tensile and two bend pieces shall be selected by a surveyor of ships from each batch; and

(b) the bending test-pieces may be either of the bar as rolled or turned down to one inch diameter. One of the two bending test-pieces selected shall be lightly and evenly nicked on one side with a sharp cutting tool.

Tensile tests.

64. The tensile breaking strength shall not be less than 21½ tons per square inch with an elongation of not less than 25 or 30% measured on a standard test-piece *B* or *F* respectively.

Bending tests.

65. The bending test-piece shall stand bending cold until the sides are parallel and the space between the two sides is not greater than the diameter of the test-piece. The nicked test-piece shall be bent back at the nick through an angle of 180° by pressure or by a succession of light blows. The fracture shall be clean, fibrous, free from slag or dirt or any coarse crystalline structure.

BOILER TUBES

Solid drawn boiler tubes subject to internal pressure.

66.—(1) All tubes subject to internal pressure shall be solid drawn and made of steel, the ultimate tensile strength of which does not exceed 28 tons per square inch, and the elongation of which shall be not less than 30% measured on a standard testpiece *F* when in the billet or bar form, and shall be certified as such by the makers of the steel and of the tubes.

(2) All tubes under 1½ inches external diameter shall be cold finished; these and all other cold-drawn tubes shall be satisfactorily annealed before examination.

(3) All tubes shall be free from defects, both within and without, and shall be tested as follows:

(a) all tubes up to 10 L.S.G. in thickness shall be capable of being flattened by hammering when cold until the inner surfaces are not further apart than 1/16 inch. For those over 10 L.S.G., and not exceeding 6 L.S.G. in thickness, the maximum distance apart shall be 7/32 inch; for those over 6 L.S.G. and not exceeding 3 L.S.G., the maximum distance apart shall be 3/8 inch; and for those whose thickness exceeds 3 L.S.G. the maximum shall be 9/16 inch. In all cases after undergoing such tests there shall be no signs of any cracking or other fracture; and

(b) all tubes when cold shall be able to withstand without cracking an enlargement of diameter at both ends by means of roller expanders or by drifts to the extent of:—

Thickness of Tubes

Enlargements of Diameters at ends by means of
Roller Expanders Drifts

Up to 10 L.S.G.

12.5%

(4) Tubes shall be presented for test in batches of 100 each. Two tubes shall be selected indiscriminately from each of at least two batches and one from each of any remaining batches. Each tube so selected shall be subjected to the above expanding tests and one tube from each batch, which may be a tube that has sustained the expansion test, shall also be flattened cold to the extent specified in paragraph (3) (a) at 3 different parts of its length of which one position shall be at or near the middle of the tube, and the flattened portions shall be in 3 different planes. The tubes shall pass these tests without signs of cracking.

Should one of the selected tubes fail to withstand either of these tests, two further tubes shall be selected from the batch and be subjected to both the prescribed tests. If further failure occurs the

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particular batch of tubes shall be rejected as unsatisfactory.

(5) Every tube shall be tested at the tube maker's works by hydraulic pressure to 3 times the maximum boiler pressure, but not less than 1,000 lbs. per square inch, except downcomer tubes, which shall be tested in accordance with the requirements for steam pipes.

(6) The manufacturer's certificate of the results of the foregoing tests shall be accepted, provided each tube is delivered with one inch in excess of the finished length, which excess shall be partly severed for flattening to the extent prescribed in paragraph (3) (a).

(7) Every tube delivered is to be straight (unless otherwise specified) and is to be practically concentric throughout its length. The tolerance or deviation from the specified thickness is to be within the following limits:

(a) Cold Finished Tubes.—The tolerance in thickness shall be 5% below and 10% above the specified thickness; and

(b) Hot Finished Tubes.—The thickness of the tubes shall be within the following tolerances, measured at any point:

From 1½; inches up to and including 2½;	inches	-7½%;	+17½%;
Over 2½; inches up to and including 4½;	inches	-5%	+15%
From 1½; inches	2½; inches	-7½%;	+17½%;

The tolerances in external diameter from those specified are to be as follows:

(c) Cold Finished Tubes.—The external diameter of the tubes, measured at any point, shall be not greater than that specified, but may be less by a maximum of 1%.

(d) Hot Finished Tubes.—The external diameter of the tubes, measured at any point, shall be within the following tolerances of the diameter ordered:

For tubes from 1½; inches but below 2½; inches	+1/64 inch	-1/32 inch
For tubes 2½; inches diameter and over	+1%	-1%

Iron and steel tubes subject to external pressure.

67. A few bending tests may be made from the scrap ends of the stay tubes or the strips from which they are made but special tests need not be made from the tubes fitted into boilers constructed in accordance with these Rules if the general nature of the material is found satisfactory and a surveyor of ships is satisfied.

STEEL FORGINGS

Process of manufacture.

68.—(1) All steel forgings intended for use in the construction of hulls, boilers and their fittings, and machinery shall be made by the open hearth process, acid or basic.

(2) The forgings shall be made from sound ingots, not more than the lower two-thirds of the ingot being utilised for the purpose. The sectional area of the body of the forging shall not exceed 20% of the sectional area of the original ingot, and no part of the forging shall have more than two-thirds of the sectional area of the ingot.

Number and nature of tests.

69. At least one tensile and one bending test shall be taken from each forging; but, if the weight exceeds 3 tons, a tensile and a bending test shall be taken from each end. Small forgings made from one ingot may be dealt with under rule 48 (6).

Tensile tests.

70.—(1) The tensile strength of steel forgings shall not, except with permission of the Surveyor-General of Ships, exceed 40 tons per square inch; and the elongation, measured on the appropriate standard test-piece C, D or E, shall not be less than 17% for 40-ton steel; and in no case shall the sum of the tensile

strength and the corresponding elongation be less than 57.

(2) Ingot steel for shafting shall be generally of 28 to 32 tons per square inch standard quality, and when steel of other quality is used the case shall be submitted for consideration and approval of the Surveyor-General of Ships.

Bending tests.

71.The bending test-pieces shall withstand being bent, without fracture, through an angle of 180°. The deflection shall not be greater than that specified in the following table:

Maximum specified tensile strength of forging	Internal radius of testing piece after bending
	inch
Up to 32 tons per square inch	¼
Above 32 tons and up to 36 tons per square inch	$\frac{3}{8}$;
Above 36 tons and up to 40 tons per square inch	$\frac{5}{8}$;

Annealing.

72.All ingot steel forgings shall after completion, be thoroughly annealed at a uniform temperature and, if any subsequent heating is done, the forging shall, if required by a surveyor of ships, be again annealed.

STEEL CASTINGS

Process of manufacture.

73.Steel castings intended for use in the construction of hulls, boilers and their appurtenances, machinery, fittings and equipments may be made by any approved process.

Number and nature of tests.

74.Tests need not be made from unimportant steel castings or from steel castings which are used for articles usually made of cast-iron, if the scantlings are not materially reduced below what would be required if cast-iron were used. All other steel castings shall be tested as follows:

(a) at least one tensile and one bending test shall be made from the castings from each charge; and, where a casting is made from more than one charge, at least 4 tensile and 4 bending tests shall be made from pieces cast as far apart as possible on the casting and as near the top and the bottom respectively as practicable;

(b) where more than one casting is made from one charge, at least one tensile and one bending test shall be made from the castings run from one common pouring head; but separate tests shall be made from each casting or set of castings run from each separate pouring head. Small castings may, however, be dealt with in accordance with rule 48 (6); and

(c) the test-pieces shall be selected after all annealing has been completed.

Tensile tests.

75.—(1) The tensile strength may range from 26 to 40 tons per square inch, with an elongation, measured on the standard test-piece C, D, or E, of not less than 15%.

(2) If, however, the castings are to be used for the more important parts of the hull, machinery, boilers and their appurtenances, and fittings, or for articles usually made of wrought material, the elongation shall not be less than 20% where the corresponding tensile strength is between 26 and 35 tons per square inch.

(3) The material of cast steel webs for crank shafts shall be such that the tensile strength does not exceed 32 tons per square inch, and the sum of the tensile strength in tons per square inch and the percentage of elongation measured on the standard testpiece C, D or E shall not be less than 50.

Bending tests.

76.The test-pieces shall withstand being bent, without fracture, through an angle of 60° if the tensile strength is between 35 and 40 tons per square inch, and, in the case of other castings, through an angle

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of 90°: but, if they are required to be of the superior quality referred to in rule 75 (2) the angle shall not be less than 120°. The internal radius of the bend in each case shall not be greater than one inch.

Tests for side scuttle frames, deadlights and plugs.

77.—(1) When side scuttle frames, deadlights and plugs of cast steel are intended for positions above the bulkhead deck no tests will, as a rule, be necessary unless a surveyor of ships has reasons to doubt the quality and strength of the material.

(2) When intended for positions below the bulkhead deck, however, the following tests shall be made:

one frame, deadlight or plug out of every 50, and at least one of each for every ship so fitted, shall be selected at random and tested to destruction by being bent when cold and before being machined, either in a press or by blows; and

the frames and deadlights shall withstand, without fracture, being bent through an angle of 20°, and the plugs through an angle of 40°. The internal radius of the bend shall not be greater than one inch.

(3) If a surveyor of ships is of opinion that owing to the unusual depth of projecting rims, or for any other reason, the above test for frames and deadlights cannot be fairly applied, an alternative method of testing may be submitted to the Surveyor-General of Ships for approval before the tests are commenced.

(4) When side scuttles of a special type are intended to be fitted, full particulars shall be submitted to the Surveyor-General of Ships who will decide the nature of the necessary tests.

Tests for elbows and valves.

78.—(1) Elbows and valves attached to the shell plating; shoots for ashes, galley refuse, etc.; chests for ventilators, and other castings of a similar character shall be subjected to bending tests in the following proportions from the castings of each charge:

- (a) one in 12 for small castings, such as elbows, valves, chests for ventilators, etc.;
- (b) one in 4 for galley refuse shoots; and
- (c) one for each large casting, such as ash shoots.

(2) The test-pieces shall withstand being bent cold, without fracture, through an angle of 60° if the tensile strength of the casting is between 35 and 40 tons per square inch and in the case of other castings through an angle of 90°.

The internal radius of the bend shall not be greater than one inch.

Annealing.

79.All steel castings shall be thoroughly annealed at a uniform temperature, and shall be allowed to cool down prior to removal from the annealing furnace; and, if subsequently heated, shall, if required by a surveyor of ships, be again annealed.

MALLEABLE CAST-IRON

Malleable iron castings.

80.The use of malleable cast-iron for ships fittings may be sanctioned in special cases by the Surveyor-General of Ships. In all cases the surfaces of malleable iron castings shall not be removed by machining, etc., to a greater extent than is absolutely necessary.

Tests for side scuttle frames, deadlights and plugs.

81.—(1) When side scuttle frames, deadlights and plugs of malleable cast-iron are intended for positions above the bulkhead deck no tests shall be necessary unless a surveyor of ships has reasons to doubt the quality and strength of the material.

(2) When intended for positions below the bulkhead deck, but not less than 6 inches above the load line, the following tests shall be made:

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one frame, deadlight or plug out of every 25, and at least one of each for every ship so fitted, shall be selected at random and tested to destruction by being bent, when cold and before being machined, either in a press or by blows;

the frames shall withstand, without fracture, being bent through an angle of 20°, and deadlights and plugs through an angle of 40°; and

the internal radius of the bends shall in no case exceed one inch.

(3) In addition to the tests required by paragraph (2) each article must satisfactorily withstand being dropped on an iron slab from a height of 10 feet for frames and 15 feet for deadlights and plugs.

(4) If a surveyor of ships is of opinion that owing to the unusual depth of projecting rims, or for any other reason, the above test for frames and deadlights cannot be fairly applied, an alternative method of testing may be submitted to the Surveyor-General of Ships for approval before the tests are commenced.

Test for fittings of cast-iron.

82.When it is intended to make these fittings of malleable cast-iron of such special quality as to approach closely cast-steel in strength and ductility, full particulars of the tensile and bending tests to which it is proposed to subject the material shall be submitted to the Surveyor-General of Ships for consideration and approval before the castings are made.

ORDINARY CAST-IRON

Ordinary cast-iron not allowed.

83.Ordinary, cast-iron is considered unsatisfactory for side scuttles and similar fittings, and shall not be accepted for such fittings attached to the shell plating below the margin line, where failure of the castings might impair the watertightness of the hull and thus affect the safety of the ship.

SOLID-DRAWN STEEL STEAM AND FEED PIPES

Material.

84.Steel intended to be used in the manufacture of steel steam and feed pipes shall comply with the requirements prescribed in rule 54.

Number and nature of tests.

85.Tensile and bending tests shall be made from the tubes made from each charge in the following proportions:

- (a) tubes up to and including 4 inches in diameter: 1 in 40 or part thereof;
- (b) tubes above 4 inches up to and including 5 inches in diameter: 1 in 10 or part thereof;
- (c) tubes above 5 inches up to and including 7 inches in diameter: 1 in 6 or part thereof; and
- (d) tubes above 7 inches in diameter: 1 in 4 or part thereof.

Tensile and bending tests.

86.—(1) The tensile strength shall not exceed 28 tons per square inch, and the elongation, measured on a standard testpiece A, shall not be less than 20% if the thickness of the tube is $\frac{1}{4}$ inch and over; or not less than 18% if the thickness of the tube is less than $\frac{1}{4}$ inch.

(2) The bending tests shall be as prescribed in rule 57 (1) for boiler plates.

LAP WELDED STEEL STEAM PIPES

Material.

87.Steel intended to be used in the manufacture of lap welded steam pipes shall comply with the requirements for boiler steel prescribed in rule 54.

Tensile and bending tests.

88.—(1) A tensile test shall be made from the plates from which the tubes are made. The ultimate strength of the material shall not exceed 28 tons per square inch, with an elongation of 25% on a length of 8 inches for material $\frac{3}{8}$ inch in thickness and upwards. The elongation of material under $\frac{3}{8}$ inch in thickness may be 3% less than 25% for each one-eighth of an inch below $\frac{3}{8}$ inch in the thickness.

(2) The bending tests shall be as prescribed in rule 57 (1) for boiler plates.

Tests for welds.

89.The seams shall be welded by hammering or rolling the joint. To ensure that the process of welding is satisfactory the scrap ends, or two rings cut from the scrap ends of each tube welded, shall be closed in to one-half the internal diameter of the pipe without fracture of the weld when on the major and minor axis of the closed-in rings respectively. When considered necessary by a surveyor of ships check tensile tests shall be made and the tensile strength across the weld shall not be less than 20 tons per square inch.

LAP WELDED IRON STEAM PIPES

Number and nature of tests.

90.No special tensile and bending tests of material are required but a surveyor of ships shall be satisfied that iron of suitable quality is used.

Tests for welds.

91.The seams shall be welded by hammering the joint. To ensure that the process of welding is satisfactory the scrap ends, or two rings, cut from the scrap ends of each tube welded shall be closed in to one-half the internal diameter of the pipe without fracture of the weld when on the major and minor axis of the closed-in rings respectively.

ANNEALING OF IRON AND STEEL PIPES

Annealing of iron and steel pipes.

92.On completion of any work which involves heating, whether for welding on flanges, hot bending the pipe, or for any other purpose, all the iron and steel steam pipes shall be carefully annealed.

SOLID DRAWN AIR BOTTLES

Material.

93.Steel intended to be used in the manufacture of solid drawn air bottles shall comply with the requirements for boiler steel prescribed in rule 54.

Number and nature of tests.

94.—(1) The material shall be tested in the transverse direction and one tensile and one cold bend test shall be made from each tube.

(2) The tensile test piece may be straightened hot and subsequently annealed with the tube and the bend test piece, and it may be machined to a uniform thickness. Surface defects may be removed from each side of the bending test piece.

Tensile and bending tests.

95.—(1) The transverse tensile strength of the material shall not exceed 36 tons per square inch and be such that the factor of safety of the completed air bottle is not less than 4. The elongation, measured on a length of 8 inches, or 5 inches, shall not be less than 18% or 21% respectively.

(2) The bending test-piece shall withstand, without fracture, being bent 180° over an internal radius of 1½ times the thickness of the test-piece.

SPECIAL MATERIAL AND MATERIAL MANUFACTURED ABROAD

Special quality material.

96.When material having a tensile strength other than those specified in this Part is intended to be used in

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the construction of the hulls, boilers and their appurtenances, machinery or fittings of ships, full particulars shall be submitted to the Surveyor-General of Ships who shall prescribe the nature of the required tests.

Material manufactured abroad.

97.The requirements of rules 46 to 95 (inclusive) with regard to the manufacture and testing of materials shall apply to materials manufactured in Singapore. Where such materials are manufactured outside Singapore full particulars as to the process of the manufacture and tests, together with such other information as he may require, shall be submitted to the Surveyor General of Ships for his decision as to the suitability of the material for the intended purpose.

SURVEY

Application for survey.

98.Every application for the survey of a passenger ship shall be made by the owner, agent or master on the prescribed form accompanied by the prescribed fee at least 3 days before the survey is required and shall show whether a Certificate of Survey and/or a Safety Certificate is required.

Submission of plans.

99.The application for survey shall be accompanied by such plans of the ship as the Surveyor-General of Ships may require. The plans shall contain such information as is necessary for the full consideration of the strength of the ship and the proposals for complying with the requirements of these Rules.

Posponement of surveys.

100.—(1) If the requisite preparations to enable a surveyor of ships to carry out the survey have not been made on the day and by the time mentioned in the application for a survey, the surveyor of ships may fix some other date and time for the survey.

(2) If the surveyor of ships is unavoidably prevented from being present at the time fixed, the earliest possible information shall be sent to the applicant, and some other time convenient both to the applicant and to the surveyor of ships shall be fixed for the survey.

Mode of carrying out surveys.

101.—(1) The survey of a passenger ship before the ship is put in service shall include a complete inspection of the hull, machinery and equipments including the outside of the ship's bottom in dry dock and the inside and outside of the boilers. The survey shall be such as to ensure that the arrangements, material and scantlings of the hull, boilers and their appurtenances, the main and auxiliary machinery, life-saving appliances and other equipments fully comply with such of these Rules as are applicable in her case and that the material and workmanship of all parts of the ship and her equipments are in respects satisfactory:

Provided that the bottom of a ship which has been surveyed during construction need not be examined in dry dock after launching if it has been examined by a survey of ships before the ship is launched unless there are special reasons for considering it necessary to do so:

Provided further that the survey of a ship shall not be undertaken after the hull is completed, painted and cemented without the sanction of the Surveyor-General of Ships.

(2) The annual survey of a passenger ship already in service shall include an inspection of the whole of the hull, boilers, machinery and equipments, including the outside of the ship's bottom in dry dock. The survey shall be such as to ensure that the ship, as regards the hull, boilers and their appurtenances, the main and auxiliary machinery, life-saving appliances and other equipments, is in a satisfactory condition and fit for the service for which she is intended, and that she complies with the requirements of such of these Rules as are applicable in her case.

(3) A survey either general or partial as a result of the occurrence of an accident or the discovery of any defect which affects the safety of the ship or the completeness of her life-saving appliances or other equipments shall be such as to ensure that the necessary repairs or renewals have been effectively made and that the material and workmanship of such repairs or renewals are in all respects satisfactory and that the ship is fit for the service for which she is intended.

Period covered by declaration.

102.—(1) The particulars in a declaration of survey required by section 133 (2) of the Act shall in no case

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state a date more than 12 months from the date of the last outside examination of the hull and fittings without the sanction of the Minister.

(2) A declaration of survey shall not be granted to a ship of which the outside of the hull and fittings have not been examined in dry dock during the 12 months preceding the date of survey.

Special passenger and safety certificate.

103. If in any passenger ship, having a certificate granted under the Act, the passenger accommodation is, or life-saving appliances are, increased while the certificate is in force and the owner, agent or master wishes to increase the number of passengers for one particular voyage only, a special passenger and safety certificate for the specified voyage may be issued by a surveyor of ships. Application shall be made on the form prescribed giving not less than 24 hours' notice, and the prescribed fee paid. The increased accommodation shall be measured in accordance with these Rules for the particular voyage on which the ship is about to proceed and the ship shall comply in all respects with the Act and these Rules.

FIRST SCHEDULE

Rule 44

Declaration regarding Passengers

Per Ship
Bound for
Under what Colours
Name of Master
Number of Chinese
Number of Malays
Number of Indians
Number of other nationalities
Number allowed by licence
Number deducted for the space occupied by cattle or other animals or cargo or stores
Number of crew
Total number of deck passengers
Date

Master

Declaration regarding Passengers

Per Ship
Bound for
Under what Colours
Name of Master
Number of Chinese
Number of Malays
Number of Indians
Number of other nationalities
Number allowed by licence
Number deducted for the space occupied by cattle or other animals or cargo or stores
Number of crew
Total number of deck passengers
Date

Boarding Officer for Port Master

SECOND SCHEDULE

Rule 41 (1)

PART A

DEGREES, DIPLOMAS AND LICENCES

Licensing Body	Qualifications
Royal College of Physicians, London	... Fellow, Member, Licentiate.
Royal College of Surgeons, England	... Fellow, Member.
Royal College of Physicians, Edinburgh	... Member, Fellow, Licentiate.
Royal College of Surgeons, Edinburgh	... Fellow, Licentiate.
Royal Faculty of Physicians and Surgeons, Glasgow	... Fellow, Licentiate.
Royal College of Physicians, Ireland	... Fellow, Member, Licentiate, Licentiate in

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		Midwifery.
Royal College of Surgeons, Ireland	...	Fellow, Licentiate, Licentiate in Midwifery.
Apothecaries' Society of London.	...	Licentiate.
Apothecaries' Hall, Dublin	...	Licentiate.
University of Oxford	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery, Bachelor of Surgery.
University of Cambridge	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Durham	...	Doctor of Medicine, Bachelor of Medicine, Bachelor of Surgery, Master of Surgery.
University of London	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
Victoria University of Manchester	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Birmingham	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Liverpool	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Leeds	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Sheffield	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Bristol	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Wales	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Edinburgh	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Aberdeen	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Glasgow	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of St. Andrews	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
University of Dublin	...	Doctor of Medicine, Bachelor of Medicine and Surgery, Master of Surgery, Master in Obstetrics.
National University of Ireland	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.
Queen's University of Belfast	...	Doctor of Medicine, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery.

PART B

DEGREES, DIPLOMAS AND LICENCES

Licensing Body		Qualifications
University of Adelaide	...	Bachelor of Medicine and Bachelor of Surgery, Doctor of Medicine, Master of Surgery.
University of Sydney	...	Bachelor of Medicine and Surgery, Doctor of Medicine, Master of Surgery.
University of Melbourne	...	Bachelor of Medicine and Bachelor of

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		Surgery, Doctor of Medicine.
University of Manitoba	...	Doctor of Medicine, Master of Surgery.
University of Western Ontario	...	Doctor of Medicine.
Queen's University, Kingston, Ontario	...	Doctor of Medicine, Master of Surgery.
University of Toronto	...	Bachelor of Medicine, Doctor of Medicine.
Dalhousie University	...	Doctor of Medicine, Master of Surgery.
McGill University	...	Doctor of Medicine, Master of Surgery.
Laval University	...	Doctor of Medicine.
University of Montreal	...	Doctor of Medicine.
Ceylon Medical College	...	Licentiate in Medicine and Surgery.
University of Hongkong	...	Bachelor of Medicine and Surgery.
University of Allahabad	...	Bachelor of Medicine, Bachelor of Surgery.
University of Bombay	...	Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, Master of Surgery.
University of Calcutta	...	Licentiate in Medicine and Surgery, Bachelor of Medicine and Surgery, Master of Surgery, Doctor of Medicine.
University of Lucknow	...	Bachelor of Medicine and Bachelor of Surgery.
University of Madras	...	Licentiate of Medicine and Surgery, Bachelor of Medicine and Bachelor of Surgery, Master of Surgery, Doctor of Medicine.
Punjab University	...	Licentiate in Medicine and Surgery, Bachelor of Medicine and Bachelor of Surgery, Doctor of Medicine, Master of Surgery.
University of Malta	...	Doctor of Medicine.
University of New Zealand	...	Bachelor of Medicine and Bachelor of Surgery, Doctor of Medicine.
University of South Africa	...	Bachelor of Medicine and Bachelor of Surgery.
University of Cape Town	...	Bachelor of Medicine and Bachelor of Surgery.
University of the Witwatersrand, Johannesburg	...	Bachelor of Medicine and Bachelor of Surgery.

Fellow of the College of Physicians and Surgeons of Bombay.

Member of the College of Physicians and Surgeons of Bombay.

Fellow of the State Medical Faculty of Bengal.

Member of the State Medical Faculty of Bengal.

Fellow of the State Medical Faculty of Punjab.

Member of the State Medical Faculty of Punjab.

A Military Assistant Surgeon who has passed the special examination conducted by the Director-General, Indian Medical Service, prior to 1922 and is registered in British India.

N.B.—Licentiates of Indian medical schools and faculties who are already employed as ship's surgeons may be recognised so long as they are employed in such capacity.

PART C

DEGREES, DIPLOMAS AND LICENCES

The Degrees, Diplomas and Licences to practise Medicine and Surgery issued by any of the following Universities or Schools of Medicine:

In Austria:

University of Vienna.

University of Graz.

University of Innsbruck.

In Belgium:

University of Brussels.

University of Liege.

University of Louvain.

University of Gand (Ghent).

In Czechoslovakia:

University of Prague — one Czech and one German

University of Brno.

University of Bratislava.

In Denmark:

University of Copenhagen.

In Finland:

University of Helsingfors.

In France:

University of Paris.

Medical College, Bordeaux.

Medical College, Lille.

Medical College, Lyon.

Medical College, Montpellier.

Medical College, Nancy.

Medical College, Toulouse.

University of Strasbourg.

In Germany:

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University of Berlin.

University of Bonn.

University of Breslau.

University of Gottingen.

University of Greifswald.

University of Halle.

University of Munich.

University of Erlangen.

University of Wurzburg.

University of Leipzig.

University of Tübingen.

University of Heidelberg.

University of Freiburg in Breisgau.

University of Giessen.

University of Rostock.

University of Jena.

University of Frankfurt am Main.

University of Hamburg.

University of Kiel.

University of Cologne.

University of Königsberg.

University of Marburg.

University of Münster.

Medical Academy in Düsseldorf.

In Holland:

University of Leiden.

University of Utrecht.

University of Groningen.

University of Amsterdam.

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In Hungary:

Magyar Kiralyi Pazmany Peter Tudomany — Egyetem

/RI. Hungarian Peter Pazmany University/.

Budapest.

Magyar Kiralyi Tisza Istvan Tudomany-Egyetem.

/RI. Hungarian Stephen Tisza University/.

Debrecen.

Magyar Kiralyi Erzsebet Tudomany-Egyetem.

/RI. Hungarian Elizabeth University/.

Pecs.

Magyar Kiralyi Ferenc Jozsef Tudomany-Egyetem.

/RI. Hungarian Francis Joseph University/.

Szegred.

In Italy:

University of Rome.

University of Naples.

University of Genoa.

University of Padua.

University of Messina.

University of Palermo.

University of Parma.

University of Pisa.

University of Sassari.

University of Siena.

University of Bologna.

University of Florence.

University of Perugia.

In Japan:

Imperial University of Tokio.

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Imperial University of Kioto.

Imperial University Kyushu.

Medical College of Toboku Imperial University (Toboku Teikoku Daigaku Senmonbu).

Imperial University of Hokkaido.

Chiba Medical College (Chiba Ika Daigaku).

Okayama Medical College (Okayama Ika Daigaku).

Kanagawa Medical College (Kanagawa Ika Daigaku).

Nagasaki Medical College (Nagasaki Ika Daigaku).

Niigata Medical College (Niigata Ika Daigaku).

Osaka Prefectural Medical College (Osaka Ika Daigaku)

Kioto Prefectural Medical College (Kioto Ika Daigaku).

Aichi Prefectural Medical College (Aichi Kenntsu Igaku Senmon Gakko).

Private Medical College of the Hospital of Tokio Jikeikai (Tokio Jikeikai Iin Igaku Senmon Gakko).

Private Medical College of Kummamoto (Kummanmoto Ika Daigaku).

Taihoku Medical College (Taihoku Igaku Senmon Gakko).

Keijo Medical College (Keijyo Igaku Senmon Gakko).

Medical College of Keio Gijuku University.

Nippon Medical College (Nippon Ika Daigaku).

Tokyo Medical College (Tokyo Igaku Senmon Gakko).

Nanman Medical College (Nanman Igakudo).

In Norway:

University of Oslo.

In Poland:

University of Lemberg.

In Portugal:

University of Lisbon.

University of Coimbra.

In Rumania:

University of Krakau (Cracow).

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In Russia:

University of Kharkov.

University of Odessa.

University of Kiev.

University of Yuryev (Dorpat).

University of Tomsk.

University of Warsaw.

In Sweden:

University of Upsala.

University of Lund.

Medical College, Stockholm.

In the United States of America:

New York University.

Columbia University (N.Y.).

Harvard University.

Yale University.

Johns Hopkins University.

University of Pennsylvania.

University of Vermont.

Jefferson Medical College, Philadelphia.

Bellevue Medical College, New York.

Miami Medical College, Cincinnati.

THIRD SCHEDULE

Rule 41 (2) (b)

MEDICAL ADMISSION AND DISCHARGE BOOK

Name of Ship

Serial Number of Cases	Name	Age	Sex	Disease or Cause of Admission	Dates of			Number of Hours or days under Treatment	Remarks
					Admission	Discharge or Recovery	Death		

FOURTH SCHEDULE

Rule 41 (2) (c)

MEDICAL REGISTER OF DEATHS

Name of Ship

Serial Number	Name	Age	Time of Occurrence		Cause of death	Signature of Surgeon
			Hour	Date		