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## MERCHANT SHIPPING ORDINANCE 1952

### MERCHANT SHIPPING (TONNAGE) REGULATIONS 1985

70/52

IN exercise of the powers conferred by section 57 of the Merchant Shipping Ordinance 1952, the Minister makes the following regulations:

#### PART 1 GENERAL

Citation

1. These Regulations may be cited as the Merchant Shipping (Tonnage) Regulations 1985.

Interpretation.

2. In these Regulations, unless the context otherwise requires -

“Administration” means the Government of the state whose flag the ship is flying;

“amidships” means the mid point of the length (as defined below);

“breadth” means the maximum breadth of the ship, measured amidships to the moulded line of the frame in a ship with a metal shell and to the outer surface of the hull in a ship with a shell of any other material;

“cargo spaces” means enclosed spaces which are included in the computation of gross tonnage and are appropriated for the transport of cargo to be discharged from the ship and which are permanently marked with the letters “CC” (cargo compartment), such letters being not less than 100 millimetres in height and so positioned as to be readily visible;

“Certifying Authority” means the Minister or any person authorised by the Minister for the purposes of these Regulations;

“Contracting Government” means the Government of a country which has accepted the International Convention on Tonnage Measurement of Ships, 1969;

“enclosed spaces” means all those spaces, other than excluded spaces, which are bounded by the ship’s hull, by fixed or portable partitions or bulkheads, or by decks or coverings other than permanent or moveable awnings. No break in a deck, nor any opening in the ship’s hull, in a deck

or in a covering of a space, or in the partitions or bulkheads of a space, nor the absence of a partition or bulkhead, shall preclude a space from being included in the enclosed spaces; and for the purposes of this definition “excluded spaces” means any of the following spaces:

- (a) that part of an enclosed space within an erection opposite an end opening and extending from the opening to an athwartship line at a fore and aft distance from the opening equal to half the breadth of the deck at the line of the opening. Such end opening shall have a breadth equal to or greater than 90 per cent of the breadth of the deck at the line of the opening and shall extend from deck to deck or to a curtain plate of a depth not exceeding by more than 25 millimetres the depth of the adjacent deck beams, as specified in figure 1 of Schedule 1; provided that –
  - (i) where at any point the width of the enclosed space, because of any arrangement except convergence of the outside plating, as specified in figure 3 of Schedule 1, becomes less than 90 per cent of the breadth of the deck at the line of the opening, the excluded space shall extend only to an athwartship line intersecting that point, as specified in figures 2 and 4 of Schedule 1;
  - (ii) where the opposite ends of two enclosed spaces are separated by a gap, which is completely open except for bulwarks or open rails and of fore and aft length less than half the least breadth of the deck at the gap, then no part of the enclosed spaces shall be excluded, as specified in figures 5 and 6 of Schedule 1;
- (b) a space under an overhead deck covering open to the sea and weather, having no other connection on the exposed sides with the body of the ship than the stanchions necessary for its support. In such a space, open rails or a bulwark and curtain plate may be fitted or stanchions fitted at the ship’s side, provided that the distance between the top of the rails

or the bulwark and the curtain plate it not less than 0.75 metres or one-third of the height of the space, whichever is the greater, as specified in figure 7 of Schedule 1;

- (c) a space in a side-to-side erection between opposite side openings not less in height than 0.75 metres or one-third of the height of the erection, whichever is the greater. If the opening in such an erection is provided on one side only, the space to be excluded from the volume of enclosed spaces shall be limited inboard from the opening to a maximum of one half of the breadth of the deck in way of the opening, as specified in figure 8 of Schedule 1;
- (d) a space in an erection immediately below an uncovered opening in the deck overhead, provided that such an opening is exposed to the weather and the space excluded from enclosed spaces is limited to the area of the opening, as specified in figure 9 of Schedule 1;
- (e) a recess in the boundary bulkhead of an erection which is exposed to the weather and the opening of which extends from deck to deck without means of closing, provided that the interior width is not greater than the width at the entrance and its extension into the erection is not greater than twice the width of its entrance, as specified in figure 10 of Schedule 1;
- (f) notwithstanding the provisions of subparagraphs (a) to (e) inclusive, any space listed in those subparagraphs which fulfils at least one of the following conditions shall be treated as an enclosed space;
  - (i) the space is fitted with shelves or other means for securing cargo or stores;
  - (ii) the openings are fitted with any means of closure;
  - (iii) the construction provides any possibility of such openings being closed;

“existing ship” means a ship which is not a new ship;

“length” means the greater of the following distances:

- (a) the distance between the fore side of the stem and the axis of the rudder stock; or
- (b) a distance measured from the fore side of the stem, being 96 per cent of the distance between that point and the aft side of the stern,

the said points and measurements being taken respectively at and along a waterline at 85 per cent of the least moulded depth of the ship. In the case of a ship having a rake of keel the waterline shall be parallel to the designed waterline;

“Load Line Rules” means the load line rules made under the Ordinance and includes in relation to any ship not registered in Malaysia any corresponding rules of the country in which the ship is registered;

“moulded depth” means –

- (a) the vertical distance measured from the top of the keel to the underside of the upper deck at side. In wood and composite ships the distance is to be measured from the lower edge of the keel rabbet. Where the form at the lower part of the midship section is of a hollow character, or where thick garboards are fitted, the distance is to be measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel;
- (b) in ships having rounded gunwales, the moulded depth shall be measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwales were of angular design;
- (c) where the upper deck is stepped and the raised part of the deck extends over the point at which the moulded depth is to be determined, the moulded depth shall be measured to a line of reference extending from the lower for the purposes of this definition: (i) “upper deck” means the

uppermost complete deck exposed to weather and sea, which has permanent means of weathertight closing of all openings in the weather part thereof, and below which all openings in the sides of the ship are fitted with permanent means of watertight closing. In a ship having a stepped upper deck, the lowest line of the exposed deck and the continuation of that line parallel to the upper part of the deck is taken as the upper deck; and (ii) “weathertight” means that in any sea conditions water will not penetrate into the ship;

“moulded draught” means –

- (a) for ships assigned load lines in accordance with the Load Line Rules, the draught corresponding to the Summer Load Line (other than timber load lines);
- (b) for passenger ships, the draught corresponding to the deepest subdivision load line assigned in accordance with the construction rules;
- (c) for ships to which no load line has been assigned but the draught of which is restricted by the Minister, the maximum permitted draught;
- (d) for other ships, 75 per cent of the moulded depth amidships as defined in this regulation;

“new ship” means a ship the keel of which is laid, or which is at a similar stage of construction, on or after the 18th July 1982; and for the purposes of this definition “a similar stage of construction” means the stage at which –

- (a) construction identifiable with a specific ship begins; and
- (b) assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material whichever is the less;

“passenger” means any person carried in a ship except –

- (a) a person employed or engaged in any capacity on board the ship on the business of the ship;

- (b) a person on board the ship either in pursuance of the obligation laid upon the master to carry shipwrecked, distressed or other persons, or by reason of any circumstances that neither the master nor the owner nor the character (if any) could have prevented; and
- (c) a child under one year of age;

“oil tanker” means a ship constructed or adapted to carry oil in bulk in its cargo spaces and includes combination carriers; for the purposes of this definition “combination carrier” means a ship designed to carry either oil or solid cargoes in bulk;

“pleasure craft” means a vessel primarily used for sport of recreations;

“surveyor” means –

- (a) the Surveyor General of Ships;
- (b) a Surveyor of Ships; or
- (c) any other surveyor appointed by a Certifying Authority.

## PART II

### APPLICATION, ASCERTAINMENT OF TONNAGE AND CERTIFICATION FOR NEW SHIPS AND CERTAIN EXISTING SHIPS OF 24 METRES IN LENGTH AND OVER

Application of Part II

- 3. (1) This Part and Schedules 2, 3 and 4 shall apply to –
  - (a) the following ships registered or to be registered in Malaysia, being ships of 24 metres in length or over:
    - (i) new ships;
    - (ii) existing ships to which regulation 13 (1) would otherwise apply but which undergo alterations or modifications which result in a substantial variation in their existing gross tonnage;

- (iii) existing ships, if the owner so requests; and
- (iv) all ships with effect from the 18th July 1994;
- (b) Malaysian fishing vessels of 24 metres in length or over; and
- (c) Pleasure crafts of 24 metres in length or over.

(2) Existing ships the tonnage of which has once been determined under this Part pursuant to a request of the owner under paragraph (1) (a) (iii) shall not subsequently have their tonnages determined in accordance with Part IV.

Method of measurement.

4 (1) The owner and the master of a ship to be measured shall make it available for measurement by a surveyor and afford all necessary facilities for its survey and measurement and shall produce such plans, drawings, specifications and other documents relating to the ship that the surveyor may require for his use of retention.

(2) The gross and net tonnages shall be determined in accordance with regulations 6 and 7 provided that in the case of novel types of craft with constructional features which render the application of the provisions of these Regulations unreasonable or impracticable, the gross and net tonnages shall be determined as required by the Minister.

(3) All measurements used in the calculations of volumes shall be taken and expressed in metres to the nearest centimetre.

(4) Gross and net tonnages shall be expressed as whole numbers, decimals being rounded off downwards.

Calculation of volumes.

5. (1) All volumes included in the calculation of gross and net tonnages shall be measured, irrespective of the fitting of insulation or the like, to the inner side of the shell or structural boundary plating in ships constructed of metal, and to the outer surface of the shell or to the inner side of the structural boundary surfaces in ships constructed of any other material.

(2) Volumes of appendages shall be included in the total volume.

(3) Volumes of spaces open to the sea shall be excluded from the total volume.



(4) The method and accuracy of the calculations shall be to the satisfaction of the Minister and shall be sufficiently detailed to facilitate checking.

Gross tonnage.

6. The gross tonnage (GT) of a ship shall be determined by the following formula:

$$GT = K_1 V$$

where –

V = total volume of all enclosed spaces of the ship in cubic metres.

$K_1 = 0.2 + 0.02 \log_{10} V$  or as specified in Schedule 2.

Net tonnage

7. The net tonnage (NT) of a ship shall be determined by the following formula:

.....?

where –

Miscellaneous tonnage.

8. (1) Segregated ballast oil tankers

Where segregated ballast tanks complying with Regulation 13 of Annex 1 of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating to that Convention are provided in oil tankers, an entry may be made on the International Tonnage Certificate (1969) indicating the total tonnage of these tanks. The tonnage of such segregated ballast tanks shall be calculated according to the following formula:

$$K_1 \times V_b$$

Where –

$K_1 = 0.2 + 0.02 \log_{10} V$  or as specified in Schedule 2.

V = the total volume of all enclosed spaces of the ship in cubic metres

$V_b$  = the total volume of segregated ballast tanks in cubic metres measured in accordance with regulation 5.

(2) *Deck Cargoes*

Where cargo is carried in any uncovered space on deck the tonnage of the space so occupied to be taken into account for the purposes of determining the total tonnage of the ship shall be determined by the formula –

Deck Cargo Tonnage = 0.353 (mean length x mean breadth x mean height).

Issue of certificates.

8. The Certifying authority shall, upon receipt of the appropriate fee, issue to the owner of every ship registered in Malaysia, the tonnages of which have been ascertained in accordance with regulations 6 and 7, an International Tonnage Certificate (1969) in the form set out in Schedule 3, certifying the tonnages of the ship and containing the following particulars:

- (a) the name, port of registry and official number of the ship;
- (b) its length, breadth and moulded depth;
- (c) its gross and net tonnages;
- (d) the date on which the keel was laid or the ship, was at a similar stage of construction or date on which the ship underwent alterations or modifications of a major character.

Cancellation of certificates.

10. (1) Where alterations are made in the arrangement, construction, capacity, use of spaces, total number of passengers the ship is permitted to carry under the terms of the ship's passenger certificate, assigned load line, or permitted draught of the ship such as would cause an increase in the gross or net tonnage, the existing International Tonnage Certificate (1969) shall cease to be valid and shall be delivered up to and cancelled by the Certifying Authority.

(2) When a ship is transferred from the Malaysian Register, the International Tonnage Certificate (1969) shall cease to be valid except when the transfer is to the Administration of a state which is a Contracting Government in which case the certificate may remain in force for a period not exceeding 3 months or until the new Administration issues another International Tonnage Certificate (1969) whichever is the earlier. The Certifying Authority shall transmit to the Administration of that Government as soon as possible after the transfer has taken place a copy of the certificate carried by the ship at the time of transfer and a copy of the relevant tonnage calculations.

Change of net tonnage necessitating  
issue of certificate.

11. (1) When alterations in the values of  $V$ ,  $V_c$ ,  $d$ ,  $N_1$  or  $N_2$  as defined in regulations 6 and 7 result in an increase in the net tonnage a new International Tonnage Certificate (1969) incorporating the increased net tonnage shall be issued.

(2) In the case of a passenger ship assigned subdivision load lines in accordance with the Load line Rules and the construction rules, only one net tonnage shall be applied. Where the draught corresponding to the Summer load line differs from that corresponding to the greater of the two values determined in accordance with regulation 7 by applying the differing draughts.

(3) (a) Subject to subparagraph (b), where alterations in the values of  $V$ ,  $V_c$ ,  $d$ ,  $N_1$  or  $N_2$  as defined in regulations 6 and 7, or changes in the position of the load lines result in a decrease in the net tonnage, a new International Tonnage Certificate (1969) incorporating the decreased net tonnage shall not be issued until 12 months have elapsed from the date on which the current certificate was issued.

(b) A new International Tonnage Certificate (1969) may be issued when –

(i) a ship undergoes alterations or modifications of a major character, such as the removal of a superstructure, which require an alteration of the assigned load line; or

(ii) the ship is a passenger ship employed in special trades for the carriage of large numbers of special trade passengers, such as the pilgrim trade.

### PART III

#### APPLICATION, ASCERTAINMENT OF TONNAGE AND CERTIFICATION FOR ALL SHIPS, INCLUDING PLEASURE CRAFTS, OF LESS THAN 24 METRES IN LENGTH

Application of Part III

12. (1) This part shall apply to –
- (a) all ships of less than 24 metres in length;
  - (b) all Malaysian fishing vessels of less than 24 metres in length; and
  - (c) all pleasure crafts of less than 24 metres in length.
- (2) Ships and pleasure crafts to which this Part applies shall continue to have their tonnages ascertained in accordance with the provisions of the Regulations previously in force, as set out in Schedule 4 and Appendices 1 to 5 thereto.

### PART IV

#### APPLICATION, ASCERTAINMENT OF TONNAGE AND CERTIFICATION FOR EXISTING SHIPS, OF 24 METRES IN LENGTH AND OVER UNTIL THE 17TH JULY 1994

Application of Part IV

13. (1) This Part shall apply to existing ships of 24 metres and over registered or to be registered in Malaysia.
- (2) This Part shall not apply to existing ships referred to in regulation 3 (1) (a)(ii) and (iii).
- (3) Ships to which this Part applies shall, until the 17th July 1994, continue to have their tonnages ascertained in accordance with the provisions of the Regulations previously in force, as set out in Schedule 4 and Appendices 1 to 4 thereto.

### PART V

#### FOREIGN SHIPS WHILST WITHIN MALAYSIA OR THE TERRITORIAL WATERS THEREOF

Acceptance of foreign tonnage  
certificates

14. (1) An International Tonnage Certificate (1969) issued under the authority of another Contracting Government to a foreign ship in accordance with the Convention shall be accepted and regarded for all purposes covered by

the Convention as having the same validity as one issued under Part II. Whilst such a ship is within Malaysia or the territorial waters thereof it may be subject to inspection by a person duly authorised by the Minister in that behalf for the purpose of verifying –

- (a) that the ship is provided with a valid International Tonnage Certificate (1969); and
- (b) that the main characteristics of the ship correspond to the data given in the certificate.

(2) Any such inspection shall not cause any delay to the ship.

(3) If the inspection reveals that the main characteristics of the ship differ from those entered in the International Tonnage Certificate (1969) so as to lead to an increase in the gross tonnage or the net tonnage, the Administration of the state whose flag the ship is flying shall be informed without delay.

Ascertainment of tonnage and certification

15. (1) New Ships -

- (a) The Certifying Authority may, at the request of the Administration of a Contracting Government, ascertain the gross and net tonnages of a new foreign ship in accordance with Part II and issue to the owner an International Tonnage Certificate (1969). In such cases the certificate shall be endorsed to the effect that it has been issued at the request of the Government of the state whose flag the ship is or will be flying, and a copy of the certificate and the calculations of the tonnages shall be transmitted to the requesting Government as soon as possible.
- (b) The Certifying Authority may, at the request of an owner of a new foreign ship flying the flag of an Administration of a non Contracting Government ascertain the gross and net tonnages of the ship in accordance with Part II and issue a Certificate of Malaysian Tonnage Measurement. In such cases the certificate will bear the endorsement “for use only whilst within Malaysia or the territorial waters thereof”.

- (2) Existing Ships -
  - (a) The Certifying Authority may, at the request of the Administration of a Contracting Government, ascertain the gross and net tonnages of an existing foreign ship in accordance with Part II and issue to the owner an International Tonnage Certificate (1969). In such cases the certificate shall be endorsed to the effect that it has been issued at the request of the Government of the state whose flag the ship is or will be flying, and a copy of the certificate and the calculations of the tonnages shall be transmitted to the requesting Government as soon as possible.
  - (b) The Certifying Authority may, at the request of the owner of any existing foreign ship, ascertain the gross and net tonnages of the ships in accordance with Part IV until the 17th July 1994. In such cases a Malaysian Tonnage Certificate shall be issued.

## PART XI

### INTERIM SCHEME FOR TONNAGE MEASUREMENT FOR CERTAIN SHIPS

Application of Part VI

16. (1) The Minister may, at the written request of an owner of a Malaysian ship be required to be measured and certified in accordance with Part II –
- (a) which is a ship the keel of which is laid or is at a similar stage of construction not later than the 31st December 1985; or
  - (b) which is a cargo ship of less than 1,600 tons gross tonnage as ascertained in accordance with regulation 13 (3), the keel of which is laid or is at a similar stage of construction before the 18th July 1994.

permit such a ship to have, additionally, its gross tonnage ascertained by the Certifying Authority in accordance with the provisions of the tonnage regulations previously in force, as set out in Schedule 4 and Appendices 1 to 4 thereto, and to use this tonnage for the purpose of the application of the provisions of regulations implementing the International Convention for the Safety of Life at Sea 1974 and the Protocol of 1978 relating to that Convention.

(2) The measurement of a ship in accordance with paragraph (1) shall be in respect of gross tonnage only and an appropriate Malaysian Tonnage Certificate shall be issued and it shall be endorsed with the following endorsement:

“For use only for the application of the Interim Scheme for Tonnage Measurement for Certain Ships [IMO Resolution A494 (XII)]”.

(3) Where the gross tonnage is ascertained in accordance with paragraph (1) and a Safety of Life at Sea Convention certificate is subsequently issued, then only that tonnage shall be recorded in that certificate and the certificate shall be endorsed with the following endorsement:

“The above gross tonnage has been measured by the Certifying Authority of Malaysia in accordance with the tonnage regulations which were in force prior to the coming into force of the International Convention on Tonnage Measurement of Ships 1969”.

## PART VII

### PENALTIES

#### Penalties

17. (1) any owner or master who fails without reasonable cause to deliver up a certificate for cancellation as required by regulation 10 (1) or paragraph 4 (3) of Part I of Schedule 4 shall be guilty of an offence and shall on conviction be liable to a fine not exceeding one thousand ringgit.

(2) If goods or stores are carried in a permanently closed in space on board ship in contravention of paragraph 18 (3) of Schedule 4 the master and the owner of the ship shall each be guilty of an offence and shall on conviction be liable to a fine not exceeding one thousand ringgit.

SCHEDULE 2  
(Regulation 6, 7 and 8)

COEFFICIENTS K<sub>1</sub> AND K<sub>2</sub> REFERRED TO IN REGULATIONS 6, 7 AND 8

V or V<sub>c</sub> = Volume in cubic metres

V or V <sub>c</sub>	K <sub>1</sub> or K <sub>2</sub>	V or V <sub>c</sub>	K <sub>1</sub> or K <sub>2</sub>	V or V <sub>c</sub>	K <sub>1</sub> or K <sub>2</sub>	V or V <sub>c</sub>	K <sub>1</sub> or K <sub>2</sub>
10	0.2200	45000	0.2931	330000	0.3104	670000	0.3165
20	0.2260	50000	0.2940	340000	0.3106	680000	0.3166
30	0.2295	55000	0.2948	350000	0.3109	690000	0.3168
40	0.2320	60000	0.2956	360000	0.3111	700000	0.3169
50	0.2340	65000	0.2963	370000	0.3114	710000	0.3170
60	0.2356	70000	0.2969	380000	0.3116	720000	0.3171
70	0.2369	75000	0.2975	390000	0.3118	730000	0.3173
80	0.2381	80000	0.2981	400000	0.3120	740000	0.3174
90	0.2391	85000	0.2986	410000	0.3123	750000	0.3175
100	0.2400	90000	0.2991	420000	0.3125	760000	0.3176
200	0.2460	95000	0.2996	430000	0.3127	770000	0.3177
300	0.2396	100000	0.3000	440000	0.3129	780000	0.3178
400	0.2520	110000	0.3008	450000	0.3131	790000	0.3180
500	0.2540	120000	0.3016	460000	0.3133	800000	0.3181
600	0.2556	130000	0.3023	470000	0.3134	810000	0.3182
700	0.2569	140000	0.3029	480000	0.3136	820000	0.3183
800	0.2581	150000	0.3035	490000	0.3138	830000	0.3184
900	0.2591	160000	0.3041	500000	0.3140	840000	0.3185
1000	0.2600	170000	0.3046	510000	0.3142	850000	0.3186
2000	0.2660	180000	0.3051	520000	0.3143	860000	0.3187
3000	0.2695	190000	0.3056	530000	0.3145	870000	0.3188
4000	0.2720	200000	0.3060	540000	0.3146	880000	0.3189
5000	0.2740	210000	0.3064	550000	0.3148	890000	0.3190
6000	0.2756	220000	0.3068	560000	0.3150	900000	0.3191
7000	0.2769	230000	0.3072	570000	0.3151	910000	0.3192
8000	0.2781	240000	0.3076	580000	0.3153	920000	0.3193
9000	0.2791	250000	0.3080	590000	0.3154	930000	0.3194
10000	0.2800	260000	0.3083	600000	0.3156	940000	0.3195
15000	0.2835	270000	0.3086	610000	0.3157	950000	0.3196
20000	0.2860	280000	0.3089	620000	0.3158	960000	0.3196
25000	0.2880	290000	0.3092	630000	0.3160	970000	0.3197
30000	0.2895	300000	0.3095	640000	0.3161	980000	0.3198
35000	0.2909	310000	0.3098	650000	0.3163	990000	0.3199
40000	0.2920	320000	0.3101	660000	0.3164	1000000	0.3200

Coefficients K<sub>1</sub> or K<sub>2</sub> at intermediate values of V or V<sub>c</sub> shall be obtained by linear interpolation.

SCHEDULE 3  
(Regulation 9)

INTERNATIONAL TONNAGE CERTIFICATE (1969)  
ISSUED UNDER THE PROVISIONS OF THE  
INTERNATIONAL CONVENTION ON TONNAGE MEASUREMENT  
OF SHIPS, 1969

UNDER THE AUTHORITY OF THE GOVERNMENT OF MALAYSIA

Name of Ship	Official Number	Port of Registry	Date*

\* Date on which keel was laid or the ship was at a similar stage of construction, [Article 2 (6)] or date on which the ship underwent alterations or modifications of a major character, [Article 3 (2) (b)], as appropriate.



## MAIN DIMENSIONS

Length [Article 2 (8)]	Breadth [Regulation 2 (3)]	Moulded Depth amidships to Upper Deck [Regulation 2 (2)]

The tonnages of the Ship are:

GROSS TONNAGE .....

NETT TONNAGE .....

THIS IS TO CERTIFY:

That the tonnages of this ship have been determined in accordance with the provisions of the International Convention on Tonnage Measurement of Ships, 1969.

Issued at ..... 19 .....  
(place of issue of certificate) (date of issue)

.....  
(signature of official issuing certificate)

.....  
(seal of issuing authority)

The undersigned declared that he is duly authorised by the said Government to issue this certificate.

.....  
(signature)

(Reverse side of Certificate)

**SPACES INCLUDED IN TONNAGE**

GROSS TONNAGE			NET TONNAGE		
Name of Space	Location	Length	Name of Space	Location	Length
Underdeck					
			<b>NUMBER OF PASSENGERS</b> [Regulation 4 (1)]		
			Number of passengers in cabin with not more than 8 berths .....		
			Number of other passengers .....		
<b>EXCLUDED SPACES</b> [Regulation 2 (5)]					
An asterisk (*) should be added to those spaces listed above which comprise both enclosed and excluded spaces.			<b>MOULDED DRAUGHT</b> [Regulation 4 (2)]		

Date and place of original measurement .....

Date and place of last previous re-measurement .....

REMARKS:

SCHEDULE 4  
(Regulations 12, 13, 16 and 17)

TONNAGE REGULATIONS PREVIOUSLY IN FORCE  
AND APPLICABLE TO SHIPS REFERRED TO IN PARTS  
III, IV, VI AND VII

Interpretation

1. In addition to the definitions prescribed in regulation 2, in this Schedule and Appendices 1 to 5 inclusive, unless the context otherwise requires –

“dry cargo space” means space appropriated for the carriage of cargo other than liquid or gaseous matter in bulk;

“overall length” in relation to a pleasure craft to which Part V of this Schedule applies means the distance between the foreside of the foremost fixed permanent structure and the aft side of the aftermost fixed permanent structure of the vessel;

“propelling machinery space” means space below the upper deck appropriated for the main or auxiliary propelling machinery of a ship, and includes -

- (a) ventilation light or escape trunks serving any such space;
- (b) space appropriated for boilers serving such machinery;
- (c) shaft tunnels;
- (d) engineers’ storerooms and workshops not exceeding in total tonnage  $\frac{3}{4}$  of 1 per cent of the gross tonnage of the ship,
- (e) oil fuel settling tanks serving the main or auxiliary propelling machinery, having a total capacity sufficient to provide not less than 24 or more than 96 hours steaming for the ship at maximum speed;

and shall also include framed-in spaces on or above the upper deck described in paragraph 5 (1) (e) and included in the gross tonnage of the ship in accordance with that provision:

“second deck” means the deck next below the upper deck, being a deck -

- (a) which is fitted as an integral part of the ship's structure;
- (b) which is continuous at least between peak bulkheads both fore and aft and transversely; and
- (c) in which all hatchways are fitted with substantial and durable covers, a deck being taken to be continuous for this purpose notwithstanding the presence in it of –
  - (i) openings serving propelling machinery space or leading to ladderways or stairways;
  - (ii) hatch or ventilation trunks, provided that they do not extend fore and aft from one main transverse bulkhead to another;
  - (iii) chain lockers or cofferdams; or
  - (iv) a break or breaks the aggregate height of which above the line of continuation of the deck does not exceed 4 feet;

“tonnage deck” means the second deck except in the case of single deck ships, in which case it means the upper deck;

“upper deck” means the uppermost complete deck exposed to sea and weather fitted as an integral part of the ship's structure, being a deck all openings in the weather portions of which are fitted with permanent means of closing and below which all openings in the sides of the ship are fitted with permanent means of watertight closing, but shall in the case of an open ship be taken to be the upper edge of the upper strake of the gunwale.

## PART II

### Ascertainment of tonnage

2. The tonnage of any ship to which Parts III and IV of these Regulations and this Schedule applies and which is to be registered in Malaysia under the Ordinance, shall be ascertained in accordance with this Schedule:

Provided that in the case of novel types of craft with constructional features which render the application of the

provisions of this Schedule unreasonable or impracticable, the tonnage shall be determined as required by the Minister.

Method of measurement

3. (1) The owner and the master of a ship to be measured shall upon payment of the appropriate fee make it available for measurement by a surveyor and afford all necessary facilities, for its inspection and measurement and shall produce for the surveyor's use and retention if required such plans, drawing, specifications and other documents relating to the ship as he may require.

(2) Subject to subparagraph (3) of this paragraph, the tonnage of a ship shall be measured in the manner specified in Rule I of Appendix 1 and in Appendix 2 to this Schedule.

(3) In any case in which the surveyor is satisfied that by reason of the ship's being laden or otherwise measurement of the tonnage of the ship below the upper deck in accordance with subparagraph (2) of this paragraph is not reasonable practicable, such tonnage shall be measured in the manner specified in Rule II of Appendix 1 and in the case of a ship so measured the provisions of paragraphs 13 and 14 shall not apply.

(4) The Certifying Authority may on the application of the owner of any ship the tonnage of which below the upper deck has been measured in accordance with subparagraph (3) direct such tonnage to be measured in accordance with subparagraph (2) and furnish the particulars of such measurement to the registrar of Malaysian ships at the port at which the ship is registered, and that registrar shall alter the particulars relating to the registered tonnage of the ship accordingly.

(5) All measurements required by this Schedule shall be taken and expressed in feet and fractions of a foot, and such fraction shall be expressed in decimals.

(6) Tonnage in relation to any ship or space in a ship shall be measured in terms of cubic capacity, 100 cubic feet representing one ton.

Certificate of Malaysian tonnage

4. (1) The Certifying Authority shall issue to the owner of every ship registered in Malaysia under the Ordinance, the tonnage of which has been ascertained in accordance with this Schedule, a certificate of Malaysian tonnage certifying the registered tonnage of the ship and containing the following particulars:

- (a) the name, port of registry and official number of the ship;
- (b) its registered dimensions;
- (c) its gross tonnage and the tonnage of each of the components thereof specified in paragraph 5 (1);
- (d) its register tonnage and the deductions and allowances made pursuant to paragraphs 11 and 12 respectively in ascertaining that tonnage;
- (e) in the case of a ship to which gross and register tonnages have been assigned in accordance with paragraph 14, particulars of the spaces the tonnage of which has been excluded by virtue of the provisions of paragraph 13 or paragraph 14, as the case may be, in ascertaining such tonnages;
- (f) the position in which any tonnage mark assigned to the ship is to be placed.

(2) The gross and register tonnage as stated in that certificate shall, unless any alteration is made in the form or capacity of the ship or it is discovered that the tonnage of the ship has been erroneously computed, be taken for that purpose to be the gross and register tonnages of the ship.

(3) On remeasurement of a ship any certificate of Malaysian tonnage in force in relation to that ship shall be delivered up to the Certifying Authority and the Certifying Authority shall issue a new certificate in place thereof.

### PART III

#### A. GROSS TONNAGE

Components of gross tonnage

5. (1) Subject to the provisions of Part IV of this Schedule, the gross tonnage of a ship shall be the sum of -

- (a) the underdeck tonnage of the ship ascertained in accordance with the provisions of paragraph 6 and paragraph 1 of Rule I of Appendix 1 to this Schedule;
- (b) the tonnage of betweendeck space between the second deck and the upper deck

ascertained in accordance with the provisions of paragraph 2 of the said Rule I;

- (c) the tonnage of permanently closed in spaces on or above the upper deck including that of breaks situated above the line of the deck but excluding -
  - (i) the tonnage of hatchways described in paragraph 7;
  - (ii) the tonnage of framed-in spaces on or above the upper deck which contain any part of the propelling machinery or which light or ventilate space appropriated for such machinery;
  - (iii) any space excluded by virtue of the provisions of paragraph 8, ascertained in accordance with the provisions of paragraphs 3, 4 and 5 of the said Rule I;
- (d) the tonnage of hatchways described in paragraph 7, ascertained in accordance with the provisions of that paragraph and paragraph 5 of the said Rule I;
- (e) the tonnage of framed-in spaces on or above the upper deck which contain any part of the propelling machinery or which light or ventilate space appropriated for such machinery, ascertained in accordance with the provisions of paragraph 5 of the said Rule I, subject to the conditions that -
  - (i) the owner of the ship has made written application to the Certifying Authority for the inclusion of such spaces in the propelling machinery space of the ship;
  - (ii) they are permanently marked by a notice stating their purpose; and
  - (iii) they are certified by a surveyor as safe and seaworthy and properly constructed for their purpose, as reasonable in extent for that purpose,

and as being such that they cannot be used for any other purpose.

(2) In the case of a ship the tonnage of which below the upper deck has been measured in accordance with Rule II of Appendix 1, that tonnage shall be included instead of the tonnages specified at (a) and (b) in subparagraph (1).

(3) For the purpose of this Schedule and Appendices 1 to 5 the expression "permanently close-in spaces on or above the upper deck" shall include -

- (a) a poop, bridge or forecastle notwithstanding the presence of an opening in the end transverse bulkhead thereof, unless the opening extends from deck to deck for one half or more of the breadth of the deck in way of the bulkhead;
- (b) a deck house notwithstanding the presence of an opening in one of the boundary bulkheads thereof exposed to the weather, unless the opening extends from deck to deck for one half or more of the length of the bulkhead in which it is situated and is 4 feet wide or more;
- (c) a structure extending from side to side of the ship notwithstanding the presence in it of an opening in the ship's side, unless the opening extends for one half or more of the length of the space which it serves and exceeds in height one third of the distance from deck to deck in way of the opening or 2 feet 6 inches, whichever is the greater;
- (d) a passage way at the ship's side, unless it is 4 feet wide or more and is completely open to the weather at one end, or both ends, of its length;
- (e) a recess, unless it extends from deck to deck for 3 feet or more of its width and is exposed to the weather; and
- (f) any space having an opening in the deck over being a deck exposed to the weather, unless the area of the opening is one quarter or more of the deck area over the space.



Underdeck tonnage

6. The underdeck tonnage of a ship shall be the sum of –
- (a) the tonnage of the space below the tonnage deck bounded by –
    - (i) the tonnage deck;
    - (ii) the upper surface of the double bottom tanks, open floors or ceiling as the case may be; and
    - (iii) the inner face of the timbers, frames or sparring as the case may be, measured in accordance with the provisions of paragraph 1 of Rule I of Appendix 1 to this Schedule, but subject to such limitations specified in Appendix 2 as may be applicable in the circumstances of the case, and excluding the tonnage of breaks above the line of the tonnage deck; and
  - (b) the tonnage of shaft bossings and any other appendages forming part of the hull of the ship below the tonnage deck whether or not they project beyond the extreme points of measurement of that deck.

Tonnage of hatchways

7. The tonnage of all hatchways leading to space included in the gross tonnage of the ship other than internal hatchways totally enclosed within such space shall be measured in accordance with paragraph 5 of Rule 1 of Appendix 1 to this Schedule and from the aggregate there shall be deducted  $\frac{1}{2}$  of 1 per cent of the ship's gross tonnage excluding such aggregate. The remainder (if any) shall be the tonnage of hatchways, customarily referred to as "excess of hatchways" to be included in the gross tonnage of the ship.

Closed-in spaces on or above the upper deck not to be included in gross tonnage

8. Permanently closed-in spaces of the following kinds situated on or above the upper deck shall not be included in the gross tonnage of the ship:

- (a) dry cargo space, unless situated in a break above the line of the upper deck;
- (b) space fitted with and appropriated for the use of machinery or condensers;
- (c) the wheelhouse and chartroom, and space fitted with and appropriated for the use of radio and navigational aids;

- (d) skylights, domes and trunks which light or ventilate the space they serve;
- (e) chain lockers, and space appropriated for working the anchor gear and capstan;
- (f) space appropriated for the storage of safety equipment or batteries;
- (g) companions and access hatches serving as protection for stairways or ladderways leading to space below, and openings over such stairways and ladderways;
- (h) the galley, and any separate bakery fitted with ovens, provided in either case that no part thereof is appropriated for use for any other purpose;
- (i) washing and sanitary accommodation forming part of the crew accommodation or appropriated for the use of the master;
- (j) workshops and storerooms appropriated for the use of pumpmen, engineers, electricians, carpenters and boatswains, and the lamproom;
- (k) water ballast tanks not appropriated for use for any other purpose;
- (l) shelter space providing weather protection only for use, free of charge, by deck passengers in ships intended for use only on voyages not exceeding 10 hours duration;
- (m) sheltered promenade space, glassed in and unfurnished except for deckchairs or similar light portable seating in ships intended for use on international voyages.

Provided that this paragraph shall not apply in any case other than that specified at subparagraph (a) unless the space is certified by a surveyor as being reasonable in extent, and properly constructed for its purpose and is permanently marked by a notice stating that purpose.

9. (1) Subparagraph (2) of this paragraph applies –
- (a) to ships registered in Malaysia under the Ordinance before the 1st March 1967 the tonnage of which is to be measured under this Schedule;
  - (b) to ships previously registered elsewhere than in Malaysia which are to be so registered; and
  - (c) to ships registered elsewhere than in Malaysia in respect of which application is made for a certificate of Malaysian tonnage pursuant to paragraph 3 (2).

(2) Without prejudice to the provision of paragraph 7, space situated on or above the upper deck of a ship to which this paragraph applies, being space -

- (a) which, in the case of a ship described in subparagraph (1)(a), was by virtue of openings in it not included in the gross tonnage of the ship under the law in force immediately prior to the 1st March 1967; or
- (b) which, in the case of a ship described in subparagraph (1)(b) or (c), was by virtue of there being or having been openings in it not included in the gross tonnage of the ship specified in the national certificate of registry in force in respect of the ship immediately prior to her registry in Malaysia, or the said application as the case may be,

shall not be included in the gross tonnage of the ship irrespective of whether such openings have been closed or not, if -

- (i) there has been no change since the date on which the tonnage of the ship was last measured in the purpose for which the space is used; and
- (ii) in the case of a ship described in subparagraph (1)(b) or (c), the space is such that it would not, had the ship been registered in Malaysia prior to the 1 March 1967 with the openings unclosed, have been included in her gross tonnage.

## B. REGISTER TONNAGE

Ascertainment of register tonnage

10. Subject to the provisions of Part IV of this Schedule, the register tonnage of a ship shall be the tonnage obtained by deducting from its gross tonnage -

- (a) the tonnage of spaces specified in paragraph 11; and
- (b) the tonnage allowance for propelling machinery space described in paragraph 12;

Provided that –

- (i) the deduction shall in each case be subject to any condition, limit or restriction expressed to be applicable in that case; and
- (ii) no deduction shall be made of or in respect of the tonnage of any space which has not first been included in the ship's gross tonnage.

Space to be deducted

11. The spaces referred to in paragraph 10 (a) are –

- (a) space appropriated for the accommodation of the master;
- (b) crew accommodation, except space appropriated for the storage of fresh water and space appropriated for the storage of provisions (other than fresh water), being in the latter case space in excess of 15 per cent of the aggregate of -
  - (i) space appropriated for the accommodation of the master; and
  - (ii) crew accommodation other than space appropriated for the storage of provisions and fresh water;
- (c) the wheelhouse and chartroom, and space fitted with and appropriated for the use of radio and navigational aids;
- (d) chain lockers and space appropriated for, or for the working of, the steering gear, anchor gear and capstan;

- (e) space appropriated for the storage of safety equipment or batteries;
- (f) workshops and storerooms appropriated for the use of pumpmen, electricians, carpenters and boatswains, and the lamp-room;
- (g) space occupied by the donkey engine and boiler if they are outside the propelling machinery space and connected to the main pumps of the ship;
- (h) space occupied by the main pumps of the ship if they are outside the propelling machinery space;
- (i) in the case of ships wholly propelled by sails, space appropriated for the storage of sails, so however that the total tonnage of such space does not exceed 2½ per cent of the ship's gross tonnage; and
- (j) water ballast tanks not appropriated for use for any other purpose, so however that the total tonnage so to be deducted, when added to the tonnage of spaces appropriated for water ballast not included in the gross tonnage of the ship consisting of double bottom space, space below bottom floor level or space above the upper deck, does not exceed 19 per cent of the ship's gross tonnage:

Provided that no deductions shall be made –

- (i) in respect of any space specified in subparagraph (b) unless it is certified by a surveyor as complying with all applicable provisions as to crew accommodation contained in the Ordinance and regulations made thereunder; and
- (ii) in respect of any space specified in subparagraphs (a) or (c) to (j) unless it is certified by a surveyor to be reasonable in extent, and properly constructed, for its purpose and is permanently marked by a notice stating that purpose.

Allowance for propelling machinery space.

12. The tonnage allowance for propelling machinery space to be deducted pursuant to paragraph 10 (b) shall be determined as follows:

- (a) in the case of ships propelled by screws -
  - (i) if the tonnage of the propelling machinery space is 13 per cent or over but less than 20 per cent of the gross tonnage the allowance shall be 32 per cent of the gross tonnage;
  - (ii) if the tonnage of the propelling machinery space is less than 13 per cent of the gross tonnage the allowance shall be that lesser percentage of the gross tonnage multiplied by  $32/13$ ;
- (b) in the case of ships propelled by paddle wheels –
  - (i) if the tonnage of the propelling machinery space is 20 per cent or over but less than 30 per cent of the gross tonnage the allowance shall be 37 per cent of the gross tonnage;
  - (ii) if the tonnage of the propelling machinery space is less than 20 per cent of the gross tonnage the allowance shall be that lesser percentage of the gross tonnage multiplied by  $37/20$ ;
- (c) in the case of ships to which subparagraphs (a) and (b) do not apply, the allowance shall be –
  - (i) in the case of ships propelled by screw,  $1\frac{3}{4}$  times the tonnage of the propelling machinery space;
  - (ii) in the case of ships propelled by paddle wheels,  $1\frac{1}{2}$  times the tonnage of the propelling machinery space;

Provided that –

- (i) in no case save that of tugs intended to be used exclusively as such shall be allowance exceed 55 per cent of that portion of the tonnage of the ship which remains after deducting from its gross tonnage the deductions authorised by paragraph 10 (a); and
- (ii) such deductions shall be subject to the propelling machinery space and space appropriated for its lighting and ventilation being certified as adequate by a surveyor and being permanently marked by notices stating their purpose.

#### PART IV

#### MODIFIED AND ALTERNATIVE TONNAGES AND TONNAGE MARKS

Modified gross and register tonnage  
of ships with certain freeboards

13. (1) This paragraph shall apply to a ship in respect of which greater than minimum freeboards have been assigned under the Load Line Rules and the positions of the load lines -

- (a) are not higher than would have been the case if the freeboards assigned to the ship and the position of the load lines appropriate thereto had been calculated treating the second deck as the freeboard deck; or
- (b) are such that the uppermost load line is not higher than the position of the tonnage mark determined in accordance with Appendix 4 to this Schedule.

(2) The Certifying Authority may, on the application of the owner of a ship to which this paragraph applies, assign to the ship as its gross tonnage and register tonnage a modified gross tonnage and modified register tonnage ascertained in accordance with subparagraph (3) of this paragraph instead of the gross tonnage and register tonnage ascertained in accordance with Part III of this Schedule.

(3) The modified gross tonnage and modified register tonnage so to be assigned shall be ascertained in accordance with Part III of this Schedule subject to the following modifications:

(a) for references to the upper deck in –

paragraph 5 (1) (c) and (e), and (3);  
paragraph 8;  
paragraph 9 (2);  
paragraph 11 (j);

the definition of “propelling machinery space” in the definitions at the beginning of this Schedule and Appendix 1, paragraphs 3, 5 and 6, there shall be substituted references to the second deck; and

(b) paragraph 5 (1) (b) and paragraph 2 of Rule I of Appendix 1 shall be omitted.

(4) Where such tonnages have been assigned to a ship there shall be placed on each side of the ship a tonnage mark in the form described in Appendix 3 to this Schedule, in a position in line with the uppermost load line to which the ship may be loaded but, subject to the foregoing, in a position determined in accordance with Appendix 4.

#### Alternative tonnage

14. (1) The Certifying Authority may, on the application of the owner of a ship, assign to the ship, as an alternative to its gross tonnage and register tonnage ascertained in accordance with Part III of this Schedule, the modified gross tonnage and modified register tonnage ascertained in accordance with the provisions of subparagraph (3) of paragraph 13.

(2) Where alternative tonnages have been assigned to a ship there shall be placed on each side of that ship a tonnage mark in the form described in Appendix 3 to this Schedule in a position determined in accordance with the provisions of Appendix 4.

(3) The gross tonnage and register tonnage of the ship shall be taken to be respectively the modified gross tonnage and modified register tonnage when the ship is so loaded that the tonnage mark is not submerged. At all other times the gross and register tonnages of the ship shall be those ascertained in accordance with Part III of this Schedule.



## **PART V**

### **PLEASURE CRAFTS UNDER 45 FEET IN LENGTH**

Application of Part V of this Schedule

15. (1) This Part of this Schedule applies only in relation to pleasure crafts under 45 feet (13.7 metres) in overall length which are registered in Malaysia under the Ordinance on or after the 18th July 1982.

(2) Parts II to IV of this Schedule shall not apply in relation to pleasure crafts to which this Part of this Schedule applies.

Ascertainment of tonnage

16. The tonnage of a pleasure craft to which this Part of this Schedule applies shall be ascertained in accordance with paragraph 17 and the tonnage so ascertained shall be taken to be its gross and register tonnage.

Owners to facilitate inspection and measurement

17. (1) The owner of such a pleasure craft to be measured shall make it available for measurement by a surveyor of and shall afford all necessary facilities for its inspection and measurement and shall produce for the surveyor's use and retention if required such plans, drawings, specifications and other documents relating to the pleasure craft as he may require.

(2) The tonnage of a pleasure craft to which this Part of this Schedule applies shall be measured in the manner specified in Appendix 5 to this Schedule.

## **PART VI**

### **SPACE FOR THE PURPOSES OR PAYMENT OF DUES WHERE GOODS ARE CARRIED IN SPACES NOT FORMING PART OF REGISTERED TONNAGE**

Ascertainment of tonnage

18. (1) Space to be taken into account for the purposes of the payment of dues where goods are carried in spaces not forming part of registered tonnage shall, subject to subparagraph (2) of this paragraph, be ascertained in accordance with the provisions of paragraph 5 of Rule 1 of Appendix 1 to this Schedule.

(2) Where –

- (a) a ship has been assigned alternative tonnages in pursuance of paragraph 14; and

- (b) the tonnages applicable to the ship are the modified tonnages ascertained in accordance with paragraph 13 (3),

no account shall be taken for the purpose mentioned in subparagraph (1) of any space, which is included in the register tonnage ascertained in accordance with Part III of this Schedule but which is not included in the modified register tonnage, to the extent that the tonnage of such space exceeds the difference between those register tonnages.

(3) Goods or stores shall not be carried in any permanently closed in space on board the ship which has not been included in the registered tonnage of the ship other than —

- (a) dry cargo spaces;
- (b) workshops or storerooms appropriated for the use of pump men, engineers, electricians, carpenters and boatswains;
- (c) the lamp room; or
- (d) double bottom tanks.

#### **APPENDIX 1 TO SCHEDULE 4 (Paragraph 3 of Schedule 4)**

#### **MEASUREMENT OF TONNAGE**

##### **Rule I**

Underdeck tonnage

1. (1) The length of the tonnage deck shall be measured in a straight line in the middle plane of the ship between the points at the forward and after ends of the deck where the underside of the deck, or the line of continuation thereof in way of breaks or discontinuations of the deck, meets the inner face of the frames, timbers, ceiling or sparring as the case may be. Such length so measured is hereafter referred to in this appendix and in Appendix 2 to this Schedule as the “tonnage length”.

(2) In ships which have a break, or breaks, in a double bottom the tonnage length shall be measured in parts corresponding to the number and position of such break or breaks.

(3) The tonnage length, or the length of each of the several parts thereof obtained in accordance with subparagraph (2), shall be divided into equal parts as shown in the following table:

length 50 feet or under, into 4 equal parts;

length above 50 feet but not exceeding 120 feet, into 6 equal parts;

length above 120 feet but not exceeding 180 feet, into 8 equal parts;

length above 180 feet but not exceeding 225 feet, into 10 equal parts;

length above 225 feet, into 12 equal parts;

Provided that the length of any of the several parts obtained in accordance with subparagraph (2) may be divided into 2 equal parts if such length is 30 feet or under.

(4) The transverse area of the ship at each point of division of the tonnage length, or of parts of that length as aforesaid, shall be calculated as follows:

- (a) the depth in the middle plane of the ship from the underside of the tonnage deck to the top of the open floor or double bottom as the case may be shall be measured, deducting therefrom the average thickness of ceiling, if fitted, and one-third the round of beam. If the top of the double bottom falls from the middle plane of the ship, there shall be added to the depth the mean of the fall; if the top of the double bottom rises from the middle plane, a corresponding correction shall be deducted from the depth.

In ships of wooden construction the lower terminal point of the depth shall be the upper side of the floor timber at the inside of the limber strake, after deducting therefrom the average thickness of ceiling between the bilge planks and the limber strake;

- (b) if the depth so obtained does not exceed 16 feet at the amidship division of the total tonnage length, the depth at each point of division of the tonnage length, or of parts of that length as aforesaid, shall be divided into 4 equal parts; depths in excess of 16 feet shall be divided into 6 equal parts;
- (c) at the point of division between each of the parts obtained in accordance with subparagraph (b) the horizontal breadths to the inner face of the timber, frame or sparring as the case may be shall be measured. Numbering these breadths from the tonnage deck, the even numbered breadths shall be multiplied by 4 and the others, with the exception of the first and last, by 2; these products shall be added together, and to the sum there shall be added the first and last breadths; the quantity thus obtained shall be multiplied by one-third of the common interval between the breadths and then product shall be the transverse area in square feet.

(5) The transverse areas so obtained shall be numbered from the extreme forward point of measurement of the tonnage length, or of the parts thereof as the case may be; the even numbered areas shall be multiplied by 4 and the odd numbered areas, other than the first and last, by 2; these products shall be added together and to the sum there shall be added the area (if any) of the first and last; the quantity thus obtained shall be multiplied by one-third of the common interval between the areas; the product so obtained divided by 100 shall be the underdeck tonnage of the ship exclusive of the tonnage of spaces to be included therein pursuant to paragraph 6 (b) of Schedule 4 (appendages).

Betweendeck space between the second deck and the upper deck.

2. (1) (a) Betweendeck space between the second deck and the upper deck shall be measured for length in a straight line in the middle plane of the ship between the points at the forward and after ends of the space where the inner surface of the frames, timbers, ceiling or sparring as the case may be meets the middle plane of the ship at half the height between the upper surface of the deck and the underside of the deck over.

- (b) Where a break exists in the second deck or the upper deck the line of the deck shall be extended through the break parallel to the raised part of the break; and the tonnage of the between-deck space shall be measured in such a case by reference to the line of the deck so extended.

(2) The length shall be divided into equal parts as provided in paragraph 1 (3) of this Rule. At each of these points of division the horizontal breadth from the inner face of the frames, timbers or sparring, as the case may, shall be measured at half the height of the between-deck space.

(3) The breadths shall be numbered from the stem, the stem being number 1. The even numbered breadths shall be multiplied by 4 and the odd numbered, other than the first and last, by 2. The products shall be added together and the first and the last breadths shall be added to the sum. The quantity thus obtained shall be multiplied by one-third of the common interval between the breadths, and the area thus obtained shall be multiplied by the mean height between the upper surface of the deck and the underside of the deck over. The product so obtained divided by 100 shall be the tonnage of the between-deck space.

#### Breaks in the upper deck

3. Breaks in the upper deck shall be measured for length in a straight line in the middle plane of the ship between the extremities of the break at half the height of the break, terminal points at the stem or stern being taken as described in paragraph 2 (1) of this Rule. The length so obtained shall be divided into 2 equal parts for lengths of 50 feet or less, 4 equal parts for lengths above 50 feet but not more than 225 feet and 6 equal parts for lengths over 225 feet. At each of the points of division the horizontal breadth at half the height of the break at the ship's side to the inner face of the frames, timbers or sparring as the case may be shall be measured. Numbering these breadths from the foremost terminal point, the even numbered breadths shall be multiplied by 4 and the odd numbered, other than the first and last, by 2. The products shall be added together and to the sum there shall be added the first and last breadths. The quantity thus obtained shall be multiplied by one-third of the common interval between the breadths. The area thus obtained shall be multiplied by the height of the break. The product divided by 100 shall be the tonnage of the break.

Poop, bridge and forecastle

4. A poop, bridge or forecastle shall be measured as follows:

The mean length thereof shall be measured at half the height between the upper surface of the deck and the underside of the deck over, terminal points at the stem and stern being taken as described in paragraph 2 (1) of this Rule. The length so obtained shall be divided into 2 equal parts for lengths of 50 feet or under, 4 equal parts for lengths over 50 feet but not exceeding 225 feet, and 6 equal parts for lengths exceeding 225 feet. At each of the points of division the horizontal breadth shall be measured from the inner face of the frames, timbers or sparring as the case may be at half the height between the upper surface of the deck and the underside of the deck over. Numbering these breadths from the foremost terminal point, the even numbered breadths shall be multiplied by 4 and the odd numbered, other than the first and last, by 2. The products shall be added together and to the sum there shall be added the first and last breadths. The quantity thus obtained shall be multiplied by one-third of the common interval between the breadths, and the areas thus obtained shall be multiplied by the mean height of the poop, bridge or forecastle. The product divided by 100 shall be the tonnage of the poop, bridge or forecastle.

Other permanently closed-in spaces on or above the upper deck.

5. Permanently closed-in spaces on or above the upper deck other than those dealt with in paragraph 4 shall be measured by ascertaining their mean length, breadth and height and the product of multiplying these dimensions together shall, when divided by 100, be the tonnage of the space.

Propelling machinery space

6. (1) Propelling machinery space which extends to the ship's side and is situated below the upper deck shall be measured as follows:

The mean length shall be measured in each space at half the mean depth, which shall be measured in the middle plane of the ship from the underside of the deck forming the crown of the space to the top of the double bottom or open floors, allowance being made for ceiling if fitted; for amidship spaces 3 equally spaced breadths shall be used and for spaces abaft amidships 3 equally spaced breadths shall be used for lengths up to 30 feet, 5 equally spaced breadths for lengths over 30 feet to 50 feet and 7 equally spaced breadths for lengths over 50 feet, the breadths being measured from the inner face of the frames, timbers or sparring as the case may be at half the depth of the space at that point. The mean length, mean breadth and mean depth so ascertained shall be multiplied together and the product divided by 100 shall be the tonnage of the space.

(2) Propelling machinery space which does not extend to the ship's side and is situated below the upper deck shall be measured by ascertaining its mean length, mean breadth and mean depth, and the product of multiplying these dimensions together shall, when divided by 100, be the tonnage of the space.

Shaft bossings and appendages

7. The tonnage of shaft bossings and other appendages referred to in paragraph 6 (b) of Schedule 4 shall be ascertained by measuring the internal cubic capacity of the space as accurately as practicable and dividing the result by 100.

## **RULE II**

Measurement of tonnage below the upper deck where measurement in accordance with Rule I is impracticable.

1. (1) The length of the ship shall be measured on the upper side of the upper deck from the inside of the outer plate or plank at the stem to the aft side of the stern-post, or to the fore side of the rudder stock where no stern-post is fitted. The extreme breadth of the ship shall be measured, excluding rubbers or fenders. The girth, from the upper edge of the upper deck at side on one side of the ship to the same point at the other side, shall be measured on the outside of the ship at the greatest breadth. To half the girth thus measured there shall be added half the aforesaid breadth. The square of the sum shall be multiplied by the aforesaid length. This product multiplied by .0017 in the case of ships built of wood and by .0018 in the case of other ships shall be the tonnage of the ship below the upper deck.

(2) In any case in which the survey is satisfied that by reason of the size of the ship it is not reasonably practicable to measure its girth as provided in subparagraph (1), such girth shall be ascertained by adding the aforesaid breadth of the ship to twice the depth of the ship from the top of the upper deck at the side of the ship to the bottom of the keel and multiplying this sum by 0.98.

## **APPENDIX 2 TO SCHEDULE 4 (Paragraph 6 of Schedule 4)**

### **LIMITATION OF HEIGHT OF OPEN FLOORS AND DOUBLE BOTTOMS, AND OF DEPTHS OF FRAMES AND SIDE BRACKETS, FOR PURPOSES OF MEASUREMENT OF UNDERDECK TONNAGE**

The provision of this Appendix shall have effect for the purposes of the measurement of underdeck tonnage.

Open floors

1. (1) Any part of an open floor, other than a floor in the main space for the propelling machinery of a ship, which is situated above the horizontal line hereinafter described shall be disregarded for the purposes of measurement of underdeck tonnage, which shall be measured accordingly by reference to the said line.

(2) The line above referred to shall be a line passing through a point in the middle plane of the ship at a height consisting of the maximum height of open floors applicable to a ship of the tonnage length of the ship undergoing measurement, ascertained by reference to columns A and B of Table I and corrected by the addition of a distance equal to the rise of the moulded frame line at one quarter of the breadth of the ship between moulded frame lines at the said maximum height.

(3) The provisions of this paragraph shall also apply in the case of ships fitted with longitudinal floors and/or frames.

Double bottoms

2. A double bottom, situated in any part of a ship other than the main space for the propelling machinery, which is of greater height than a height consisting of the maximum height of double bottom applicable to a ship of the tonnage length of the ship undergoing measurement, ascertained by reference to columns A and C of Table I and corrected by the addition of a distance equal to the rise of the moulded frame line at one quarter of the breadth of the ship between moulded frame lines at the said maximum height, shall be treated not as a double bottom but as an open floor of such height ascertained in accordance with the provisions of paragraph 1 (2) of this appendix as would be applicable in the case of a ship of the tonnage length of the ship undergoing measurement.

Bilge brackets

3. (1) The horizontal width of bilge brackets measured from the shell of the ship to the inboard toe of the bracket shall not -

- (a) if taken at the level of the top of an open floor, exceed the maximum height of open floor applicable to the ship obtained by reference to columns A and B of Table I;
- (b) if taken at the level of the top of a double bottom, exceed the maximum height of double bottom applicable to



the ship obtained by reference to columns A and C of that Table.

(2) In any case in which underdeck tonnage is measured by reference to a height ascertained and applied in accordance with the provisions of paragraphs 1 and 2 of this Appendix, the lowest breadth used in the measurement of underdeck tonnage area shall be the breadth between the inner sides of the shell of the ship taken at that height, less twice the maximum height of open floor applicable to the ship obtained by reference to columns A and B of Table I or twice the width of the bilge bracket whichever is the less.

Allowance for ceiling

4. The limitations imposed by the preceding three paragraphs are exclusive of an allowance for ceiling, if fitted.

Depth of frames

5. (1) Subject to subparagraph (2), the extent to which the depth of transverse or longitudinal ship side framing in the case of any ship, measured from its shell, exceeds the maximum depth of frame applicable to a ship of the registered breadth of the ship undergoing measurement ascertained by reference to Table II shall be disregarded and underdeck tonnage shall be measured accordingly by reference to the maximum depth of frame so ascertained.

(2) In the case of a ship in which alternate deep and shallow frames are fitted, the depth of frame used for purposes of measurement, measured from the shell of the ship, shall not exceed whichever is the lesser of the following dimensions:

- (a) twice the depth of the shallow frame, or
- (b) the maximum depth of frame applicable to the ship ascertained as aforesaid.

(3) The limitations imposed by subparagraphs (1) and (2) are exclusive of an allowance for sparring fitted on the toe of the frames.

**TABLE I**

<b>A</b>	<b>B</b>	<b>C</b>
<b>TONNAGE OF LENGTH OF SHIP</b>	<b>MAXIMUM HEIGHT OF OPEN FLOORS</b>	<b>MAXIMUM HEIGHT OF DOUBLE BOTTOM</b>

The dimensions shown are to be increased by 50 per cent for the foremost 25 per cent and aftermost 15 per cent of the tonnage length of the ship

<i>In feet</i>	<i>in inches</i>	<i>in inches</i>
Not exceeding 60	.... 23	.... 34.5
80	.... 24	.... 36
100	.... 25	.... 37.5
120	.... 26	.... 39
140	.... 27	.... 40.5
160	.... 28	.... 42
180	.... 29	.... 43.5
200	.... 30	.... 45
220	.... 31	.... 46.5
240	.... 32	.... 48
260	.... 33	.... 49.5
280	.... 34	.... 51
300	.... 35	.... 52.5
320	.... 36	.... 54
340	.... 37	.... 55.5
360	.... 38	.... 57
380	.... 39	.... 58.5
400	.... 40	.... 60
420	.... 41	.... 61.5
440	.... 42	.... 63
460	.... 43	.... 64.5
480	.... 44	.... 66
500	.... 45	.... 67.5
520	.... 46	.... 69
540	.... 47	.... 70.5
560	.... 48	.... 72
580	.... 49	.... 73.5
600	.... 50	.... 75
620	.... 51	.... 76.5
640	.... 52	.... 78
660	.... 53	.... 79.5
680	.... 54	.... 81
700	.... 55	.... 82.5

In the case of ships of intermediate length, the maximum height of floors or double bottoms shall be obtained by interpolation, and in the case of ships exceeding 700 feet, by linear extrapolation.

**TABLE II**

<b>REGISTERED BREADTH</b>	<b>MAXIMUM DEPTH OF FRAME</b>
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<i>In feet</i>	<i>in inches</i>
Not exceeding 20	14
30	16
40	18
50	20
60	22
70	25
80	28
90	31
100 and above	34

In the case of ships of intermediate breadths, the maximum depth of frame shall be obtained by interpolation.

**APPENDIX 3 TO SCHEDULE 4**  
**(Paragraphs 12 and 13 of Schedule 4)**

**TONNAGE MARK**

1. Save as otherwise provided in paragraph 2, the tonnage mark shall consist as shown in Figure 1 of a horizontal