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OF SOUTH WEST AFRICA.

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OFFISIËLE KOERANT

VAN SUIDWES - AFRIKA.

UITGAWE OP GESAG. *PUBLISHED BY AUTHORITY.*

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GOEWERMENTSKENNISGEWING.

C. F. MARAIS,
Sekretaris van Suidwes-Afrika.

Kantoor van die Administrateur,
Windhoek.

DEPARTEMENT VAN VERVOER

No. R. 293 (Unie).] [4 Maart 1960.

MARINE-AFDELING.

REGULASIES IN VERBAND MET DIE KONSTRUKSIE VAN SKEPE.

Dit het die Minister van Vervoer behaag om, kragtens die bepalings van artikel *driehonderd ses-en-vyftig* van die Handelskeepvaartwet, 1951 (Wet No. 57 van 1951), die volgende regulasies uit te vaardig.

INHOUD.

GOVERNMENT NOTICE.

C. F. MARAIS,
Secretary for South West Africa.

Administrator's Office,
Windhoek.

DEPARTMENT OF TRANSPORT.

No. R. 293 (Union).] [4 March 1960.

MARINE DIVISION.

REGULATIONS GOVERNING THE CONSTRUCTION OF SHIPS.

The Minister of Transport has been pleased, under the provisions of section *three hundred and fifty-six* of the Merchant Shipping Act, 1951 (Act No. 57 of 1951), to make the following regulations.

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INLEIDENDE BEPALINGS.

1. TITEL VAN HIERDIE REGULASIES.

Hierdie regulasies staan bekend as die regulasies in verband met konstruksie, 1960.

[OPMERKINGS.—(*a*) Hierdie regulasies word in twee dele verdeel: Deel I is van toepassing op passasierskepe, en Deel II op vissersbote, robbevaarders en walvisvaarders met landbasis.

(*b*) Nie-passasierskepe waarop hierdie regulasies nie van toepassing is nie, moet aan die vereistes wat deur 'n erkende klassifikasievereniging bepaal word, voldoen. Indien sulke skepe nie by sodanige vereniging geklassifiseer is nie, moet die eienaars en gesagvoerders daarvan tot sodanige tyd wanneer regulasies uitgevaardig word, die opnemer tevredestel dat die skepe sodanig gebou is om voldoende beskerming vir alle persone aan boord te bied.]

CONSTRUCTION OF HULLS.

CHAPTER III.—PERIODIC SURVEYS.

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PRELIMINARY.

1. TITLE OF THESE REGULATIONS.

These regulations are called the construction regulations, 1960.

[NOTES.—(*a*) These regulations are divided into two parts. Part I applies to passenger ships, and Part II to fishing, sealing and shore-based whaling boats.

(*b*) Non-passenger ships to which these regulations do not apply should comply with the requirements laid down by a recognised Classification Society. If such ships are not classed with such a Society, the owners and masters thereof should until such time as regulations are promulgated, satisfy the surveyor that the ships are constructed in such a manner as to ensure adequate protection for all persons on board.]

DEEL I.
(Passasierskepe.)

HOOFSTUK I.—ALGEMEEN.

2. WOORDBETEKENIS.

In hierdie Deel beteken die uitdrukking „die Wet" die Handelskeepvaartwet, 1951 (Wet No. 57 van 1951) en, tensy uit die samehang anders blyk, het enige uitdrukking waaraan daar in die Wet 'n betekenis toegeken is, wanneer dit in hierdie Deel gebruik word, die aldus toegekende betekenis, en beteken—

„afdeling van die „A"-klas", 'n beskot of 'n deel van 'n dek, wat in beide gevalle voldoen aan sodanige van die vereistes van regulasie 44 soos uitgedruk om op afdelings van die „A"-klas van toepassing te wees;

sluit—

„verblyfruimte" in—

(*a*) passasiersruimtes,

(*b*) bemanningsruimte,

(*c*) kantore,

(*d*) aanregkamers, en

(*e*) ruimte gelykstaande aan enige van die voorafgaande,

wat nie diensruimtes of oop ruimtes op dek is nie;

beteken—

„afdeling van die „B"-klas", 'n beskot wat voldoen aan sodanige van die vereistes van regulasie 44 soos uitgedruk om op afdelings van die „B"-klas van toepassing te wees;

„breedte van die skip", die grootste grootspantbreedte by of onderkant die skip se boonste indelingslaswaterlyn;

„beskotdek", die boonste dek tot waar die waterdigte dwarsbeskotte opgetrek is;

„vragruim", in Hoofstuk V, ruimte afgesonder vir vrag, behalwe pos en staafgoud en -silwer, en kokers wat na sulke ruimtes lei;

„voor of na enige datum gebou", dat die kiel van die skip waarna verwys word, voor of na daardie datum gelê is, wat die geval ookal mag wees;

sluit—

„beheerpos", in—

(*a*) 'n radiotelegraafkamer;

(*b*) enige ander ingeslote ruimte wat die volgende bevat—

(i) 'n kompas, 'n rigtingsoeker, radartoerusting, 'n stuurwiel, of soortgelyke toerusting wat vir navigasie gebruik word;

(ii) 'n sentrale aanduier verbind met 'n stelsel vir die opspoor van brand of rook; of

(iii) 'n noodontwikkelaar;

beteken—

„bemanningsruimte", woonruim vir die bemanning;

„kriteriumgetal", met betrekking tot enige skip, die kriteriumgetal van die skip bereken ooreenkomstig sodanige bepalings van die Eerste Bylae as wat op daardie skip van toepassing is;

„diepgang" die vertikale afstand vanaf die grondlyn midskeeps tot by 'n indelingslaswaterlyn;

„indelingsfaktor", met betrekking tot enige skip of gedeelte daarvan, die indelingsfaktor bereken ooreenkomstig sodanige bepalings van die Eerste Bylae as wat van toepassing is op daardie skip of gedeelte, wat ookal die geval is;

„vulbare lengte", met betrekking tot enige gedeelte van 'n skip by enige diepgang, die maksimum gedeelte van die skeepslengte wat 'n gegewe punt in die skip as middelpunt het, wat by daardie diepgang en onder sodanige van die veronderstellings van deurdringbaarheid vervat in die Eerste Bylae soos van toepassing in die omstandighede, gevul kan word sonder dat enige deel van die skip se indompelingsgrenslyn insink wanneer die skip gladnie oorhel nie;

PART I.
(Passenger ships.)

CHAPTER I.—GENERAL.

2. INTERPRETATION.

In this Part the expression "the Act" means the Merchant Shipping Act, 1951 (Act No. 57 of 1951), and unless the context otherwise indicates, any expression used in this Part to which a meaning has been assigned in the Act, bears the meaning so assigned, and—

"'A' class division" means a bulkhead or part of a deck, in either case complying with such of the requirements of regulation 44 as are expressed to apply to "A" class divisions;

"accommodation space" includes—

(*a*) passenger spaces,

(*b*) crew space,

(*c*) offices,

(*d*) pantries, and

(*e*) space similar to any of the foregoing,

not being service spaces or open spaces on deck;

"'B' class division" means a bulkhead complying with such of the requirements of regulation 44 as are expressed to apply to "B" class divisions;

"breadth of the ship" means the greatest moulded breadth at or below the ship's deepest subdivision load water line;

"bulkhead deck" means the uppermost deck up to which transverse watertight bulkheads are carried;

"cargo space" in Chapter V means space appropriated for cargo, other than mail and bullion, and trunks leading to such spaces;

"constructed before or after any date" means that the keel of the ship under reference was laid before or after that date, as the case may be;

"control station" includes—

(*a*) a radiotelegraph room;

(*b*) any other enclosed space which houses—

(i) a compass, direction-finder, radar equipment, a steering wheel, or other similar equipment used in navigation;

(ii) a central indicator connected with a system for the detection of fire or smoke; or

(iii) an emergency generator;

"crew space" means crew accommodation;

"criterion numeral" in relation to any ship means the criterion numeral of the ship determined in accordance with such of the provisions of the First Schedule as apply to that ship;

"draught" means the vertical distance from the moulded base line amidships to a subdivision load water line;

"factor of subdivision" in relation to any ship or portion thereof means the factor of subdivision determined in accordance with such of the provisions of the First Schedule as apply to that ship or portion as the case may be;

"floodable length" in relation to any portion of a ship at any draught means the maximum length of that portion having its centre at a given point in the ship which, at that draught and under such of the assumptions of permeability set forth in the First Schedule as are applicable in the circumstances, can be flooded without submerging any part of the ship's margin line when the ship has no list;

„ vuurvaste materiaal ", 'n materiaal wat nie brand nie as dit verhit word tot 'n temperatuur van 1,382° F. (750° C.) en wat ook nie ontvlambare dampe in genoegsame hoeveelheid afgee om te ontvlam wanneer dit met 'n proefvlam in aanraking gebring word nie, en die uitdrukking „ brandbare materiaal " word dienooreenkomstig verklaar;

„ onafhanklike kragpomp ", 'n pomp wat deur 'n ander krag as dié van die skip se hoofenjins aangedryf word;

„ lengte ", met betrekking tot 'n skip, die lengte van 'n skip gemeet tussen die loodlyne aan die ente van die boonste indelingslaswaterlyn;

„ masjinerieruim ", in elke Hoofstuk behalwe Hoofstukke V en V (A), die ruimte wat strek vanaf die grondlyn van die skip tot by die indompelingsgrenslyn en tussen die buitenste waterdigte dwarsbeskotte wat die ruimtes begrens wat bestem is vir die hoof- en hulpaandrywingsmasjinerie, stoomketels, as daar is, en die blywende koolbunkers, as daar is;

sluit—

„ masjinerieruim ", in Hoofstukke V en V (A), ruimtes in waar aandryf- of verkoelingsmasjinerie, stoomketels, pompe, ingenieurswerkswinkels, ontwikkelaars, ventilerings- of lugreëlingsmasjinerie of olievulposte geleë is en verkeersgange na sulke ruimtes;

beteken—

„ hoofsirkulasiepomp ", die pomp wat aangebring is om water deur die hoofkondensator te sirkuleer;

„ hoofvertikale sones ", die hoofvertikale sones waarin die romp, bobou en dekhuise van 'n skip verdeel word ooreenkomstig paragraaf (2) van regulasie 45;

„ indompelingsgrenslyn ", 'n lyn minstens 3 duim onderkant die boonste oppervlakte van die beskotdek aan die kant van die skip getrek; en veronderstel word ten einde die vulbare lengte van die skip te bepaal;

„ myl ", 'n seemyl van 6,080 voet;

„ passasiersruimte ", ruimte ingerig vir die gebruik van passasiers;

„ deurdringbaarheid ", met betrekking tot 'n ruimte, die persentasie van daardie ruimte onderkant die skip se indompelingsgrenslyn wat, met die veronderstelling dat dit in gebruik is vir die doel waarvoor dit aangewend is, deur water ingeneem kan word;

sluit—

„ openbare kamers ", sale, eetkamers, kroeë, rookkamers, sitkamers, ontspanningskamers, kinderkamers en biblioteke in;

het—

„ radiotelegraafkamer ", die betekenis wat in die handelskeepvaartradioregulasies daaraan toegewys is;

sluit—

„ diensruimte " kombuise, hoofaanregkamers, waserye, voorraadkamers, verfkamers, bagasiekamers, poskamers, staafgoud- en silwerkamers, skrynwerker- en loodgieterswerkswinkels en verkeersgange na sulke ruimtes in;

beteken—

„ skip " 'n skip waarop hierdie Deel ooreenkomstig regulasies 3 en 4 van toepassing is;

„ standaardvuurtoets " 'n toets in die loop waarvan daar in die toetsoond die volgende tydsverlooptemperature bereik word: —

Aan die end van die eerste 5 minute—1,000° F. (538° C.).

Aan die end van die eerste 10 minute—1,300° F. (704° C.).

Aan die end van die eerste 30 minute—1,550° F. (843° C.).

Aan die end van die eerste 60 minute—1,700° F. (927° C.).

„ indelingslaslyn " die laslyn wat die diepte aandui waartoe die skip gelaai mag word met inagneming van die mate waarin dit ingedeel is en die ruimte wat intussen aan passasiers toegeken word;

" incombustible material " means material which when heated to a temperature of 1382° F. (750° C.) neither burns nor gives off inflammable vapours in sufficient quantity to ignite at a pilot-flame, and the expression " combustible material " shall be construed accordingly;

" independent power pump " means a pump operated by power otherwise than from the ship's main engines;

" length " in relation to a ship, means the length of a ship measured between perpendiculars taken at the extremities of the deepest subdivision load water line;

" machinery space " in every Chapter, other than Chapters V and V (A), means space extending from the moulded baseline of the ship to the margin line and between the extreme transverse watertight bulkheads bounding the spaces appropriated to the main and auxiliary propelling machinery, boilers, if any, and the permanent coal bunkers, if any;

" machinery space " in Chapters V and V (A) includes spaces in which propelling or refrigerating machinery, boilers, pumps, engineers' workshops, generators, ventilation or air conditioning machinery, or oil filling stations are situated, and trunkways leading to such spaces;

" main circulating pump " means the pump installed for circulating water through the main condenser;

" main vertical zones " means the main vertical zones into which the hull, superstructure and deckhouses of a ship are divided in accordance with paragraph (2) of regulation 45;

" margin line " means a line drawn at least 3 inches below the upper surface of the bulkhead deck at the side of a ship, and assumed for the purpose of determining the floodable length of the ship;

" mile " means a nautical mile of 6,080 feet;

" passenger space " means space provided for the use of passengers;

" permeability " in relation to a space means the percentage of that space below the ship's margin line which, on the assumption that it is in use for the purpose for which it is appropriated, can be occupied by water;

" public rooms " includes halls, dining rooms, bars, smoke rooms, lounges, recreation rooms, nurseries and libraries;

" radiotelegraph room " has the meaning assigned to it in the Merchant Shipping Radio Regulations;

" service space " includes galleys, main pantries, laundries, store rooms, paint rooms, baggage rooms, mail rooms, bullion rooms, carpenters' and plumbers' workshops, and trunkways leading to such spaces;

" ship " means a ship to which this Part applies in terms of regulations 3 and 4;

" standard fire test " means a test which develops in a test furnace a series of time-temperature relationships as follows: —

At the end of the first 5 minutes—1,000° F. (538° C.).

At the end of the first 10 minutes—1,300° F. (704° C.).

At the end of the first 30 minutes—1,550° F. (843° C.).

At the end of the first 60 minutes—1,700° F. (927° C.);

" subdivision load line " means the load line indicating the depth to which the ship may be loaded having regard to the extent to which she is subdivided and to the space for the time being allotted to passengers;

„ indelingslaswaterlyn " die waterlyn wat veronderstel word by die indeling van die skip ooreenkomstig hierdie deel;

„ waterdig " met betrekking tot 'n bouwerk, in staat om die deurlaat van water deur die bouwerk in enige rigting onder 'n kolom water tot by die skip se indompelingsgrenslyn te verhoed;

„ dig teen wind en weer " met betrekking tot 'n bouwerk, in staat om die deurlaat van seewater deur die bouwerk in gewone seetoestande te verhoed.

[OPMERKING.—Artikel *twee* van die Wet sluit die volgende woordbepalings in:—

„ Akkommodasie vir die bemanning " ook slaapkamers, pakkamers, skeepskombuise, eetkamers, sanitêre akkommodasie, hospitale en ruimtes vir ontspanning wat vir gebruik deur of tot voordeel van seelui en leerling-offisiere verskaf word;

„ internasionale reis ", in verband met skepe wat in 'n land geregistreer is waarop die Laslynkonvensie van toepassing is, 'n reis vanaf 'n hawe in een land tot 'n hawe in 'n ander land waar een van die twee 'n land is waarop die Laslynkonvensie van toepassing is, en in verband met skepe wat in 'n land geregistreer is waarop die Veiligheidskonvensie van toepassing is, beteken dit 'n reis vanaf 'n hawe in een land na 'n hawe in 'n ander land waar een van die twee 'n land is waarop die Veiligheidskonvensie van toepassing is, en „ kort internasionale reis " 'n internasionale reis waarop 'n skip nie meer as tweehonderd seemyl vanaf 'n hawe waarin die passasiers of bemanning in veiligheid gebring sou kan word, sal wees nie, en waarop die afstand tussen die laaste aanloophawe van die land waarin die reis 'n aanvang geneem het en die uiteindelike bestemmingshawe, nie meer as seshonderd seemyl sal wees nie;

„ Minister " die Minister van Vervoer;

„ passasier " 'n persoon wat op 'n skip vervoer word, behalwe—

(*a*) 'n persoon wat in enige hoedanigheid aan boord van die skip in verband met die besigheid van die skip in diens is of bedrywig is;

(*b*) 'n persoon wat aan boord van die skip is òf ingevolge die verpligting wat hierdie Wet die gesagvoerder oplê om skipbreukelinge, mense in nood of ander persone te vervoer òf vanweë enige omstandigheid wat nòg die gesagvoerder nòg die eienaar nòg die bevragter (as daar een is) kan voorkom het nie; en

(*c*) 'n kind wat onder een jaar oud is;

„ passasierskip " 'n skip wat meer as twaalf passasiers vervoer;

„ Sekretaris " die Sekretaris van Vervoer;

„ opnemer " 'n skeepsopnemer, ingenieur-opnemer of radio- of ander opnemer (in aanmerking genome die sake wat ondersoek word of ondersoek moet word) wat kragtens paragraaf (*b*) van artikel *vier* erken of aangestel is.]

3. TOEPASSING.

Hierdie Deel is van toepassing op elke passasierskip wat in die Unie geregistreer is of as sodanig geregistreer geag word.

(OPMERKING.—Die aandag word gevestig op regulasie 87 ingevolge waarvan 'n skip van die vereistes van hierdie Deel vrygestel mag word.)

4. KLASSIFIKASIE VAN SKEPE.

Die skepe waarop hierdie deel van toepassing is word in die volgende klasse verdeel:—

Klas I.—Skepe wat gebruik word vir reise waarvan enige internasionale reise, behalwe kort internasionale reise, is.

Klas II.—Skepe, behalwe skepe van Klas I, wat gebruik word vir reise waarvan enige kort internasionale reise is.

" subdivision load water line " means the water line assumed in determining the subdivision of the ship in accordance with this Part;

" watertight " in relation to a structure, means capable of preventing the passage of water through the structure in any direction under a head of water up to the ship's margin line;

" weathertight " in relation to a structure, means capable of preventing the passage of sea water through the structure in ordinary sea conditions.

[NOTE.—Section *two* of the Act includes the following definitions:—

" Crew accommodation " includes sleeping rooms, store rooms, galleys, mess rooms, sanitary accommodation, hospitals and recreation spaces provided for use by or for the benefit of seamen and apprentice-officers;

" international voyage ", when used with reference to ships registered in a country to which the Load Line Convention applies; means a voyage from a port in one country to a port in another country, either of those countries being a country to which the Load Line Convention applies, and when used with reference to ships registered in a country to which the Safety Convention applies, means a voyage from a port in one country to a port in another country either of those countries being a country to which the Safety Convention applies; and " short international voyage " means an international voyage in the course of which a ship is not more than two hundred nautical miles from a port in which the passengers and crew could be placed in safety, and which does not exceed six hundred nautical miles in length between the last port of call in the country in which the voyage begins and the final port of destination;

" Minister " means the Minister of Transport;

" 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 circumstance that neither the master nor the owner nor the charterer (if any) could have prevented; and

(*c*) a child under one year of age;

" passenger ship " means a ship which carries more than twelve passengers;

" Secretary " means the Secretary for Transport;

" surveyor " means a ship surveyor, engineer surveyor or radio or other surveyor (having regard to the matters surveyed or to be surveyed) recognised or appointed in terms of paragraph (*b*) of section *four*.]

3. APPLICATION.

This Part shall apply to every passenger ship registered in the Union or deemed to be so registered.

(NOTE.—Attention is invited to regulation 87 in terms of which a ship may be exempted from the requirements of this Part.)

4. CLASSIFICATION OF SHIPS.

The ships to which this Part applies shall be divided into the following classes:—

Class I.—Ships engaged on voyages any of which are international voyages other than short international voyages.

Class II.—Ships, other than ships of Class I, engaged on voyages any of which are short international voyages.

Klas IIA.—Skepe, behalwe skepe van Klas VI, wat vir reise van enige aard behalwe internasionale reise gebruik word.

Klas III.—Nog nie toegewys nie.

Klas IV.—Nog nie toegewys nie.

Klas V.—Nog nie toegewys nie.

Klas VI.—Skepe wat slegs gebruik word vir reise in mooiweer met hoogstens 250 passasiers aan boord, in die loop van welke reise die skepe nooit meer as 15 myl van die vertrekpunt en ook nie meer as 5 myl van die land af is nie.

(OPMERKING.—Vir die toepassing van hierdie regulasie sluit „ reis " 'n plesierrit in.)

5. BOUSTERKTE.

Die bousterkte van elke skip moet voldoende wees vir die diens waarvoor die skip bedoel is.

HOOFSTUK II.—WATERDIGTE INDELING.

6. TOEPASSING VAN HOOFSTUK II.

Hierdie Hoofstuk is op elke skip van toepassing met uitsondering van 'n skip van Klas VI wat minder as 151 passasiers vervoer, en 'n „ Hoofstuk II-skip " beteken 'n skip waarop hierdie Hoofstuk aldus van toepassing is.

7. WATERDIGTE INDELING.

Elke Hoofstuk II-skip moet deur beskotte, wat tot by die beskotdek waterdig is, ingedeel word in afdelings waarvan die maksimum lengte bereken moet word ooreenkomstig sodanige van die bepalings van die Eerste Bylae as wat vir die skip geld. Elke ander gedeelte van die binnebou wat invloed uitoefen op die doeltreffendheid van die indeling van die skip moet waterdig wees, en die ontwerp daarvan moet verseker dat die indeling ongeskonde behoue bly.

8. PIEK- EN MASJIENRUIMBESKOTTE, ASTONNELS, ENS.

(1) Elke hoofstuk II-skip moet voorsien wees van 'n aanvaringsbeskot wat waterdig moet wees tot by die beskotdek en wat op 'n afstand van minstens vyf persent van die lengte van die skip en hoogstens 10 voet plus vyf persent van sodanige lengte van die skip se voorste loodlyn aangebring moet wees. Indien die skip 'n bobou op die voorskip het, moet die aanvaringsbeskot deurloop tot die dek bo die beskotdek en bestand wees teen wind en weer. Die verlenging moet direk bo die aanvaringsbeskot daaronder aangebring word tensy dit minstens vyf persent van die lengte van die skip van die voorste loodlyn verwyder is en die beskotdek wat die trapsgewyse verspringing vorm teen wind en weer bestand is. Die beplating en verstywings van so 'n verlenging moet ooreenkomstig die bepalings van die Derde Bylae gebou word asof die verlenging 'n deel vorm van 'n beskot reg onderkant die beskotdek.

(2) Elke Hoofstuk II-skip moet voorsien wees van 'n waterdigte agterpiekbeskot en van waterdigte beskotte wat die ruimte bestem vir die hoof- en hulpaandryfmasjinerie, stoomketels, as daar is, en die permanente koolbunkers, as daar is, van ander ruimtes skei. Sodanige beskotte moet tot by die beskotdek waterdig wees. Met die voorbehoud dat die agterpiekbeskot benede die beskotdek mag eindig mits die veiligheid van die skip nie daardeur belemmer word nie.

(3) Die skroefasdrukstuk van elke Hoofstuk II-skip moet geplaas wees in 'n waterdigte astonnel of ander waterdigte ruimte wat afsonderlik is van die skroefaskokerafdeling en met so 'n volume dat, indien die tonnel of ruimte sou volloop, die indompelingsgrenslyn nie onder water sal wees nie. Die skroefaskoker moet in 'n waterdigte ruimte ingesluit wees waarvan die volume die kleinste moet wees wat met die behoorlike ontwerp van die skip verenigbaar is.

Class IIA.—Ships, other than ships of Class VI, engaged on voyages of any kind other than international voyages.

Class III.—Not yet allocated.

Class IV.—Not yet allocated.

Class V.—Not yet allocated.

Class VI.—Ships engaged only on voyages with not more than 250 passengers on board to sea in fine weather, in the course of which voyages the ships are at no time more than 15 miles from their point of departure nor more than 5 miles from land.

(NOTE.—For the purpose of this regulation, „ voyage " includes an excursion.)

5. STRUCTURAL STRENGTH.

The structural strength of every ship shall be sufficient for the service for which the ship is intended.

CHAPTER II.—WATERTIGHT SUBDIVISION.

6. APPLICATION OF CHAPTER II.

This Chapter applies to every ship except a ship of Class VI carrying less than 151 passengers, and a " Chapter II ship " means a ship to which this Chapter so applies.

7. WATERTIGHT SUBDIVISION.

Every Chapter II ship be subdivided by bulkheads, which shall be watertight up to the bulkhead deck, into compartments the maximum length of which shall be calculated in accordance with such of the provisions of the First Schedule as apply to that ship. Every other portion of the internal structure which affects the efficiency of the subdivision of the ship shall be watertight and shall be of a design which will maintain the integrity of the subdivision.

8. PEAK AND MACHINERY SPACE BULKHEADS, SHAFT TUNNELS, ETC.

(1) Every Chapter II ship shall be provided with a collision bulkhead which shall be watertight up to the bulkhead deck and shall be fitted at a distance from the ship's forward perpendicular of not less than 5 per cent of the length of the ship and not more than 10 feet plus 5 per cent of such length. If the ship has a forward superstructure, the collision bulkhead shall be extended weathertight to the deck next above the bulkhead deck. The extension shall be fitted directly over the collision bulkhead below unless it is at least 5 per cent of the length of the ship from the forward perpendicular and the part of the bulkhead deck which forms the step is made watertight. The plating and stiffeners of such extension shall be constructed in accordance with the provisions of the Third Schedule as if the extension formed part of a bulkhead immediately below the bulkhead deck.

(2) Every Chapter II ship shall be provided with a watertight afterpeak bulkhead and with watertight bulkheads dividing the space appropriated to the main and auxiliary propelling machinery, boilers, if any, and the permanent coal bunkers, if any, from other spaces. Such bulkheads shall be watertight up to the bulkhead deck. Provided that the afterpeak bulkhead may be stopped below the bulkhead deck if the safety of the ship is not thereby impaired.

(3) The stern gland of every Chapter II ship shall be situated in a watertight shaft tunnel or other watertight space separate from the stern tube compartment and of such a volume that if the tunnel or space is flooded the margin line will not be submerged. The stern tube shall be enclosed in a watertight compartment, the volume of which shall be the smallest compatible with the proper design of the ship.

9. DUBBELE BODEMS.

(1) Onderworpe aan die bepalings van hierdie regulasie, moet elke skip van Klasse I, II en IIA toegerus word met 'n waterdigte dubbele bodem wat ten minste van die volgende omvang moet wees:—

(*a*) In skepe met 'n lengte van 200 voet en meer maar onder 249 voet: vanaf die masjinerieruim tot by die aanvaringsbeskot of so naby aan daardie beskot as wat prakties moontlik is;

(*b*) in skepe met 'n lengte van 249 voet of meer maar onder 330 voet: vanaf die aanvaringsbeskot tot by die agterpiekbeskot of so naby aan daardie beskotte as wat prakties moontlik is, maar nie noodwendig in die masjinerieruim nie;

(*c*) in skepe met 'n lengte van 330 voet of meer: vanaf die aanvaringsbeskot tot by die agterpiekbeskot of so naby aan daardie beskotte as wat prakties moontlik is.

(2) Waar hierdie regulasie vereis dat 'n dubbele bodem in die skip aangebring moet word, moet die binneste bodem tot by die skeepsboorde reik op so 'n wyse dat dit die bodem tot by die ronding van die kim sal beskerm. Die binneste bodem word vir hierdie doel as voldoende beskou indien die snylyn van die buitenste rand van die kantplaat en die huid op geen plek laer is nie as 'n horisontale vlak wat deur die snypunt loop tussen die spantlyn op die grootspant en 'n dwarsskeepse diagonaal wat onder 'n hoek van 25 grade met die basislyn getrek is en dit sny op 'n punt wat op 'n afstand van helfte van die grootspantbreedte van die middellyn geleë is.

(3) Putte wat vir dreineringsdoeleindes in die dubbele bodem aangebring is moet nie groter of dieper wees as wat vir sodanige doeleinde nodig is nie, en moet nie minder as 18 duim van die skeepsvlak of van die binneste rand van die kantplaat af wees nie: Met die voorbehoud dat 'n put wat tot op die skeepsvlak deurloop aan die agterent van 'n astonnel gebou kan word.

(4) Putte vir ander doeleindes as dreinering mag nie in die dubbele bodem gebou word nie.

(OPMERKING.—Die aandag word gevestig op regulasie 88 ingevolge waarvan 'n skip van die vereistes van hierdie paragraaf vrygestel mag word.)

(5) Niks in hierdie regulasie vereis dat 'n dubbele bodem aangebring moet word op die plek waar daar waterdigte afdelings is wat uitsluitlik vir die vervoer van vloeistowwe gebruik word nie, indien die veiligheid van die skip nie verminder word nie in die geval van bodem- of boordskade weens die afwesigheid van 'n dubbele bodem in daardie plek.

(OPMERKING.—Die aandag word gevestig op regulasie 89 ingevolge waarvan sekere skepe van die vereistes vir dubbele bodems vrygestel mag word.)

10. STABILITEIT IN BESKADIGDE TOESTAND.

(1) Elke Hoofstuk II-skip moet so gebou wees dat daar vir die intakte skip in alle diensomstandighede voorsiening gemaak word vir voldoende stabiliteit sodat die skip die finale oorstroming van enige van die hoofafdelings waarin die skip ooreenkomstig die bepalings van regulasie 7 ingedeel is, sal kan weerstaan. Indien twee van die hoofafdelings wat aanmekaar grens, deur 'n beskot met 'n verspringing geskei word, moet die stabiliteit van die intakte skip sodanig wees dat dit die finale oorstroming van daardie afdelings kan weerstaan. Indien die skip se indelingsfaktor 0·5 of minder is, moet die stabiliteit van die intakte skip sodanig wees dat dit die finale oorstroming van enige twee van die hoofafdelings wat aanmekaar grens kan weerstaan.

(2) Vir die toepassing van hierdie regulasie moet die voldoendheid van die stabiliteit van die intakte skip ooreenkomstig die bepalings van die Tweede Bylae bepaal word.

(3) (*a*) Elke Hoofstuk II-skip moet so gebou wees dat dit onsimmetriese oorstroming wanneer die skip in 'n beskadigde toestand is, beperk tot 'n minimum wat bestaanbaar is met doeltreffende inrigtings. Indien dwars-

9. DOUBLE BOTTOMS.

(1) Subject to the provisions of this regulation, every ship of Classes I, II and IIA shall be fitted with a watertight double bottom which shall be at least of the following extent:—

(*a*) In ships of 200 feet and over but under 249 feet in length: From the machinery space to the collision bulkhead or as near to that bulkhead as is practicable;

(*b*) in ships of 249 feet and over but under 330 feet in length: From the collision bulkhead to the afterpeak bulkhead or as near to those bulkheads as is practicable, but not necessarily in the machinery space;

(*c*) in ships of 330 feet and over in length: From the collision bulkhead to the afterpeak bulkhead or as near to those bulkheads as is practicable.

(2) When a double bottom is required by this regulation to be fitted in a ship, the inner bottom shall be continued out to the ship's sides in such a manner as to protect the bottom to the turn of the bilge. The inner bottom shall be deemed to be adequate for this purpose if the line of intersection of the outer edge of the margin plate with the bilge plating is not lower at any point than a horizontal plane passing through the point of intersection with the frame line amidships of a transverse diagonal line inclined at 25 degrees to the base line and cutting it at a point one-half of the ship's moulded breadth from the middle line.

(3) Wells constructed in the double bottom for the purpose of drainage shall not be larger or extend downwards more than is necessary for such purpose, and shall not be less than 18 inches from the outer bottom or from the inner edge of the margin plate: Provided that a well extending to the outer bottom may be constructed at the after end of a shaft tunnel.

(4) Wells for purposes other than drainage shall not be constructed in the double bottom.

(NOTE.—Attention is invited to regulation 88 in terms of which a ship may be exempted from the requirements of this paragraph.)

(5) Nothing in this regulation shall require a double bottom to be fitted in way of watertight compartments used exclusively for the carriage of liquids, if the safety of the ship will not be impaired in the event of bottom or side damage by reason of the absence of a double bottom in that position.

(NOTE.—Attention is invited to regulation 89 in terms of which certain ships may be exempted from the requirements of a double bottom.)

10. STABILITY IN DAMAGED CONDITION.

(1) Every Chapter II ship shall be so constructed as to provide sufficient intact stability in all service conditions to enable the ship to withstand the final flooding of any one of the main compartments into which the ship is subdivided in accordance with the provisions of regulation 7. If two of the main compartments, being adjacent to each other, are separated by a bulkhead which is stepped, the intact stability shall be adequate to withstand the final flooding of those compartments. If the ship's factor of subdivision is 0·5 or less, the intact stability shall be adequate to withstand the final flooding of any two of the main compartments which are adjacent to each other.

(2) For the purposes of this regulation, the sufficiency of the intact stability of a ship shall be determined in accordance with the provisions of the Second Schedule.

(3) (*a*) Every Chapter II ship shall be so constructed as to keep unsymmetrical flooding when the ship is in a damaged condition at the minimum consistent with efficient arrangements. If cross-flooding fittings are pro-

skeepse oorvloeiingsinrigtings aangebring is, moet die inrigtings en die maksimum helling van die skip voor herstel van die ewewig, sodanig wees dat dit nie die skip se veiligheid in gevaar stel nie.

(*b*) Indien die indompelingsgrenslyn onder water mag raak gedurende die oorstroming wat veronderstel is vir die berekening waarna in die Tweede Bylae verwys word, moet die konstruksie van die skip sodanig wees dat dit die gesagvoerder van die skip in staat sal stel om te verseker dat—

(i) die maksimum hellingshoek nie gedurende enige stadium van sodanige oorstroming sulks sal wees dat dit die veiligheid van die skip in gevaar stel nie; en

(ii) die indompelingsgrenslyn nie gedurende die finale stadium van oorstroming onder die water sal wees nie.

(4) (*a*) Daar moet in elke Hoofstuk II-skip 'n dokument verskaf word vir die gebruik van die gesagvoerder van die skip waarin inligting betreffende die gebruik van enige dwarsskeepse oorvloeiingsinrigtings wat in die skip aangebring is, verstrek word.

(*b*) In elke skip van Klasse I, II en IIA moet 'n dokument vir die gebruik van die gesagvoerder van die skip verskaf word, wat die volgende bykomende inligting bevat:—

(i) Die nodige inligting vir die handhawing van voldoende stabiliteit van die intakte skip onder dienstoestande ten einde te verseker dat die skip skade tot die omvang waarna in die Tweede Bylae verwys word, kan weerstaan; en

(ii) inligting betreffende die stabiliteitsvoorwaardes waarop die berekenings van die helling gebaseer is, tesame met die inligting dat indien die skip beskadig sou word wanneer dit in 'n minder gunstige toestand is, daar 'n oormatige helling mag intree.

11. KONSTRUKSIE VAN WATERDIGTE BESKOTTE, ENS.

(1) In elke Hoofstuk II-skip moet elke gedeelte van die skip wat volgens die vereistes van hierdie Deel waterdig moet wees, ooreenkomstig sodanige vereistes van die Derde Bylae as wat daarop van toepassing is, gebou word.

(2) In elke Hoofstuk II-skip moet die ontwerp en konstruksie van alle tenks, wat deel van die bou van die skip vorm en vir die opberging van oliebrandstof of ander vloeistowwe gebruik word, met inbegrip van dubbele bodems, piektenks, besinktenks en bunkers, toereikend wees vir daardie doel.

12. OPENINGS IN WATERDIGTE BESKOTTE, ENS.

(1) In elke skip van Klasse I, II en IIA—

(*a*) moet die getal openings in beskotte en ander bouwerke wat volgens die vereistes van hierdie Deel waterdig moet wees, die minimum wees wat bestaanbaar is met die ontwerp en behoorlike gebruik van die skip;

(*b*) moet kokers wat in verband met ventilasie-, kunsmatige trek- of verkoelingstelsels aangebring word, sover as wat dit prakties toepasbaar is, nie deur sulke beskotte of bouwerke loop nie;

(*c*) moet elke tonnel bokant die dubbele bodem, indien enige, hetsy vir toegang vanaf die bemanningsruim na die masjinerieruim, vir pypleiding of vir enige ander doel, wat deur so 'n beskot loop, waterdig wees. Die toegang tot minstens een ent van sodanige tonnel moet, indien dit ter see as 'n deurgang gebruik word, deur 'n verkeersgang wees wat waterdig is tot op 'n hoogte wat voldoende is om toegang bo die indompelingsgrenslyn te verleen. Die toegang tot die ander ent van die tonnel moet deur 'n waterdigte deur wees. Geen tonnel mag deur die eerste indelingsbeskot agter die aanvaringsbeskot loop nie;

(*d*) mag nie meer as een ingang (behalwe 'n bunker- of 'n tonnelingang) deur sodanige beskot in die masjinerieruim loop nie. Indien 'n ingang deur enige so 'n beskot loop, moet die ingang so geplaas wees dat die drempel so hoog as moontlik in die skip is;

vided, the fittings and the maximum heel of the ship before equalisation shall be such as will not endanger her safety.

(*b*) If the margin line may become submerged during the flooding assumed for the purposes of the calculation referred to in the Second Schedule, the construction of the ship shall be such as will enable the master of the ship to ensure—

(i) that the maximum angle of heel during any stage of such flooding will not be such as will endanger the safety of the ship; and

(ii) that the margin line will not be submerged in the final stage of flooding.

(4) (*a*) There shall be provided in every Chapter II ship a document for the use of the master of the ship containing information as to the use of any cross-flooding fittings provided in the ship.

(*b*) There shall be provided in every ship of Classes I, II and IIA a document for the use of the master of the ship containing the following additional information:—

(i) information necessary for the maintenance of sufficient intact stability under service conditions to enable the ship to withstand damage to the extent referred to in the Second Schedule; and

(ii) information as to the conditions of stability on which the calculations of heel have been based, together with the information that excessive heeling might result should the ship sustain damage when in a less favourable condition.

11. CONSTRUCTION OF WATERTIGHT BULKHEADS, ETC.

(1) In every Chapter II ship, every portion of the ship required by this Part to be watertight, shall be constructed in accordance with such of the requirements of the Third Schedule as apply to it.

(2) In every Chapter II ship, all tanks forming part of the structure of the ship and used for the storage of oil fuel or other liquids including double bottoms, peak tanks, settling tanks and bunkers, shall be of a design and construction adequate for that purpose.

12. OPENINGS IN WATERTIGHT BULKHEADS, ETC.

(1) In every ship of Classes I, II and IIA:—

(*a*) The number of openings in bulkheads and other structures required by this Part to be watertight, shall be the minimum compatible with the design and proper working of the ship.

(*b*) Trunks installed in connection with ventilation, forced draught or refrigeration systems shall, so far as practicable, not pierce such bulkheads or structures.

(*c*) Every tunnel above the double bottom, if any, whether for access from the crew space to the machinery space, for piping or for any other purposes, which passes through such a bulkhead, shall be watertight. The means of access to at least one end of such tunnel, if it may be used as a passage at sea, shall be through a trunkway extending watertight to a height sufficient to permit access above the margin line. The means of access to the other end of the tunnel shall be through a watertight door. No tunnel shall extend through the first subdivision bulkhead abaft the collision bulkhead.

(*d*) Not more than one doorway (other than a bunker or tunnel doorway) shall pierce such a bulkhead in the machinery space. If any such bulkhead is pierced by a doorway, the doorway shall be placed so as to have the sill as high as possible in the ship.

(*e*) moet ingange, mangate en toegangsopenings nie in die aanvaringsbeskot onderkant die indompelingsgrenslyn van die skip of in enige ander beskot wat volgens die vereistes van hierdie Deel waterdig moet wees en wat 'n vragruim van 'n ander vragruim of van 'n blywende of reserwebunker skei, aangebring word nie. Met dien verstande dat die Minister (of die Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) mag toelaat dat ingange in beskotte wat twee tussendekse vragruime skei, in enige skip aangebring mag word, indien hy tevrede is dat—

(i) die ingange noodsaaklik is vir die behoorlike werking van die skip;

(ii) die getal sulke ingange in die skip die minimum is wat met die ontwerp en behoorlike gebruik van die skip bestaanbaar is, en dat hulle op die hoogste prakties uitvoerbare vlak aangebring is; en

(iii) die buiteboordse vertikale kante van sulke ingange geleë is op 'n afstand van die huidbeplating wat nie minder is nie as een-vyfde van die breedte van die skip, wanneer daardie afstand reghoekig gemeet is met die middellyn van die skip op die hoogte van die diepste indelingslaswaterlyn.

(2) In elke skip van Klasse I, II en IIA moet openings wat slegs gesluit kan word deur middel van verplaasbare plate wat vasgebout word, nie deur beskotte buite die masjinerieruim loop wat volgens die vereistes van hierdie Deel waterdig moet wees nie.

(3) In elke Hoofstuk II-skip van Klas VI moet ingange, ventileringskokers of ander soortgelyke openings nie deur beskotte loop wat volgens die vereistes van hierdie Deel waterdig moet wees nie.

(4) In elke Hoofstuk II-skip—

(*a*) (i) moet kleppe of krane wat nie 'n deel van 'n pypstelsel is nie, nie in enige beskot aangebring word wat volgens die vereistes van hierdie Deel waterdig moet wees nie;

(ii) indien pype, spuigate, elektriese kabels of ander soortgelyke toerusting deur enige so 'n beskot loop, moet voorsiening gemaak word om te verseker dat die waterdigtheid van die beskot nie daardeur verminder word nie;

(*b*) moet die aanvaringsbeskot van die skip onder die indompelingsgrenslyn nie deur meer as een pyp deurdring word nie: Met die voorbehoud dat indien die voorpiek van die skip verdeel is om twee verskillende vloeistowwe te hou, die aanvaringsbeskot onderkant die indompelingsgrenslyn nie deur meer as twee pype deurdring mag word nie. Enige pyp wat die aanvaringsbeskot van die skip deurdring, moet toegerus wees van 'n neerskroefbare afsluitklep wat van bo die beskotdek gehanteer kan word, terwyl die klepkas in die voorpiek teen die aanvaringsbeskot bevestig moet wees.

13. MIDDELS VIR DIE AFSLUITING VAN OPENINGS IN WATERDIGTE BESKOTTE, ENS.

(1) In elke skip van Klasse I, II en IIA moet toereikende middels verskaf word om alle openings in beskotte en ander bouwerke te sluit en waterdig te maak wat volgens die vereistes van hierdie Deel waterdig moet wees.

(2) Elke deur wat in enige opening aangebring word waarna in paragraaf (1) verwys word, moet 'n waterdigte skuifdeur wees: Met die voorbehoud dat waterdigte draaideure in 'n skip van Klas I, of in enige skip van Klas II of IIA wat nie deur paragraaf (9) van die Eerste Bylae vereis word om 'n indelingsfaktor van 0·5 of minder te hê nie, aangebring mag word—

(*a*) in passasiers-, bemannings- en werkruimtes, bo enige dek waarvan die onderkant op sy laagste punt minstens 7 voet bo die boonste indelingslaswaterlyn is; en

(*e*) Doorways, manholes and access openings shall not be fitted in the collision bulkhead below the margin line of the ship or in any other bulkhead which is required by this Part to be watertight and which divides a cargo space from another cargo space or from a permanent or reserve bunker. Provided that the Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may permit any ship to be fitted with doorways in bulkheads dividing two between deck cargo spaces, if he is satisfied that—

(i) the doorways are necessary for the proper working of the ship;

(ii) the number of such doorways in the ship is the minimum compatible with the design and proper working of the ship and they are fitted at the highest practicable level; and

(iii) the outboard vertical edges of such doorways are situated at a distance from the ship's shell plating which is not less than one-fifth of the breadth of the ship, such distance being measured at right angles to the centre line of the ship at the level of the deepest subdivision load water line.

(2) In every ship of Classes I, II and IIA, bulkheads outside the machinery space which are required by this Part to be watertight, shall not be pierced by openings which are capable of being closed only by portable bolted plates.

(3) In every Chapter II ship of Class VI, bulkheads required by this Part to be watertight, shall not be pierced by doorways, ventilation trucks, or other similar openings.

(4) In every Chapter II ship—

(*a*) (i) valves and cocks not forming part of a pipe system, shall not be fitted in any bulkhead required by this Part to be watertight;

(ii) if any such bulkhead is pierced by pipes, scuppers, electric cables or other similar fittings, provision shall be made which will ensure that the watertightness of the bulkhead is not thereby impaired;

(*b*) the collision bulkhead of the ship shall not be pierced below the margin line by more than one pipe: Provided that if the forepeak in the ship is divided to hold two different kinds of liquids, the collision bulkhead may be pierced below the margin line by not more than two pipes. Any pipe which pierces the collision bulkhead of the ship shall be fitted with a screw-down valve capable of being operated from above the bulkhead deck, the valve chest being secured to the forward side of the collision bulkhead.

13. MEANS OF CLOSING OPENINGS IN WATERTIGHT BULKHEADS, ETC.

(1) In every ship of Classes I, II and IIA efficient means shall be provided for closing and making watertight all openings in bulkheads and other structures required by this Part to be watertight.

(2) Every door fitted to any opening referred to in paragraph (1), shall be a sliding watertight door: Provided that, in a ship of Class I, or in any ship of Class II or IIA which is not required by paragraph (9) of the First Schedule to have a factor of subdivision of 0·5 or less, hinged watertight doors may be fitted—

(*a*) in passenger, crew and working spaces, above any deck the underside of which at its lowest point is at least 7 feet above the deepest subdivision load water line; and

(*b*) in enige so 'n beskot wat nie 'n aanvaringsbeskot is nie en wat twee tussendekse vragruime van mekaar skei.

(3) Elke waterdigte draaideur waarna in paragraaf (2) verwys word, moet toegerus wees van knippe wat vanaf weerskante van die beskot waarin die deur aangebring is, beweeg kan word.

(4) Alle deure wat volgens die vereistes van hierdie Deel waterdig moet wees, moet deur ander middels as boute bevestig word, en moet deur ander middels as swaartekrag of 'n valgewig gesluit word.

(5) In elke skip van Klasse I, II en IIA moet waterdigte deure wat in beskotte tussen blywende- en reserwebunkers aangebring is, behalwe die deure waarna in paragraaf (3) van regulasie 14 verwys word, altyd toeganklik wees.

14. MIDDELS OM WATERDIGTE SKUIFDEURE TE BEWEEG.

(1) Wanneer in enige skip van Klas I, of 'n skip van Klas II of Klas IIA wat nie volgens paragraaf (9) van die Eerste Bylae vereis word om 'n indelingsfaktor van 0·5 of minder te hê nie, enige waterdigte skuifdeur wat in 'n beskot aangebring is (behalwe 'n deur by die ingang van 'n tonnel) in 'n posisie is wat mag vereis dat dit op see geopen moet word, en die drempel daarvan onder die diepste indelingslaswaterlyn is, geld die volgende voorskrifte:—

(*a*) Wanneer die getal van sulke deure groter as vyf is, moet al sulke deure en alle tonneldeure meganies beweeg word en moet hulle vanaf 'n sentrale punt op die brug gelyktydig gesluit kan word;

(*b*) wanneer die getal van sulke deure nie groter as vyf is nie—

(i) word daar, indien die kriteriumgetal van die skip nie groter as 30 is nie, nie verwag dat sulke deure en tonneldeure meganies beweeg moet word nie;

(ii) moet, indien die kriteriumgetal van die skip groter as 30 is, al sulke deure en alle tonneldeure meganies beweeg word en moet hulle vanaf 'n sentrale punt op die brug gelyktydig gesluit kan word: Met die voorbehoud dat indien daar net een so 'n deur en een tonneldeur in die skip is en albei in die masjinerieruim is, dit nie vereis sal word dat hulle meganies beweeg word nie.

(2) In elke skip van Klas II of IIA wat deur paragraaf (9) van die Eerste Bylae vereis word om 'n indelingsfaktor van hoogstens 0·5 te hê, moet alle waterdigte skuifdeure meganies beweeg word en moet hulle vanaf 'n sentrale punt op die brug gelyktydig gesluit kan word: Met die voorbehoud dat indien daar net een so 'n deur in enige so 'n skip is en dit in die masjinerieruim is, daar nie vereis sal word dat dit meganies beweeg moet word nie.

(3) Indien, in enige skip van Klas I, II of IIA enige waterdigte skuifdeur wat op see geopen mag word met die doel om steenkool te trem, tussen bunkers in die tussendekke onder die beskotdek aangebring is, moet sulke deure meganies beweeg word.

(4) Indien, in enige skip van Klas I, II of IIA 'n verkeersgang wat deel van 'n verkoelings-, ventilerings- of kunsmatige trekstelsel is, deur meer as een waterdigte dwarsbeskot loop en die drempels van die openings van sulke verkeersgange minder as 7 voet bo die diepste indelingslaswaterlyn geleë is, moet die waterdigte skuifdeure by sulke openings meganies beweeg word.

(5) Wanneer 'n waterdigte skuifdeur volgens die vereistes van hierdie Deel vanaf 'n sentrale punt meganies geopen en gesluit moet word, moet die bewegingstelsel sodanig wees dat die deur ook aan die deur self meganies geopen en gesluit kan word. Die inrigting moet sodanig wees dat die deur outomaties sal sluit indien dit aan die deur self geopen word nadat dit van die sentrale punt gesluit is, en dat die deur aan die deur self gesluit gehou kan word nieteenstaande 'n poging wat aangewend mag word om dit vanaf die sentrale punt te open. Handvatsels vir die beheer van die kragaangedrewe stelsel moet aan beide kante van die beskot waarin die deur geleë is,

(*b*) in any such bulkhead, not being a collision bulkhead, which divides two cargo between deck spaces.

(3) Every hinged watertight door referred to in paragraph (2) shall be fitted with catches capable of being worked from each side of the bulkhead in which the door is fitted.

(4) All doors required by this Part to be watertight shall be secured by means other than bolts, and shall be closed by means other than gravity or a dropping weight.

(5) In every ship of Classes I, II and IIA watertight doors fitted in bulkheads between permanent and reserve bunkers, other than the doors referred to in paragraph (3) of regulation 14, shall always be accessible.

14. MEANS OF OPERATING SLIDING WATERTIGHT DOORS.

(1) If, in any ship of Class I, or a ship of Class II or Class IIA not required by paragraph (9) of the First Schedule to have a factor of subdivision of 0·5 or less, any sliding watertight door fitted in a bulkhead (other than a door at the entrance to a tunnel) is in a position which may require it to be opened at sea and the sill thereof is below the deepest subdivision load water line, the following requirements shall apply:—

(*a*) If the number of such doors exceeds five, all such doors and all tunnel doors shall be operated by power and shall be capable of being simultaneously closed from a central control situated on the bridge;

(*b*) If the number of such doors does not exceed five—

(i) if the criterion numeral of the ship does not exceed 30, such doors and tunnel doors shall not be required to be operated by power;

(ii) if the criterion numeral of the ship exceeds 30, all such doors and all tunnel doors shall be operated by power and shall be capable of being simultaneously closed from a central control situated on the bridge: Provided that, if there is only one such door and one tunnel door in the ship, both of which are in the machinery space, they shall not be required to be operated by power.

(2) In every ship of Class II or IIA required by paragraph (9) of the First Schedule to have a factor of sub-division not exceeding 0·5, all sliding watertight doors shall be operated by power and shall be capable of being simultaneously closed from a central control situated on the bridge: Provided that, if in any such ship there is only one such door and it is in the machinery space, it shall not be required to be operated by power.

(3) If, in any ship of Class I, II or IIA any sliding watertight doors which may be opened at sea for the purpose of trimming coal are fitted between bunkers in the between decks below the bulkhead deck, such doors shall be operated by power.

(4) If, in any ship of Class I, II or IIA a trunkway, being part of a refrigeration, ventilation or forced draught system, is carried through more than one transverse watertight bulkhead and the sills of the openings of such trunkways are less than 7 feet above the deepest subdivision load water line, the sliding watertight doors at such openings shall be operated by power.

(5) If a sliding watertight door is required by this Part to be operated by power from a central control, the power system shall be so arranged that the door can also be operated by power at the door itself. The arrangement shall be such that the door will close automatically if opened at the door itself after being closed from the central control, and will be capable of being kept closed at the door itself notwithstanding that an attempt may be made to open it from the central control. Handles for controlling the power system shall be provided at both sides of the bulkhead in which the

voorsien word, en dit moet so ingerig wees dat enige persoon wat deur die deur loop in staat sal wees om albei handvatsels gelyktydig in die oop posisie te hou.

(6) In elke skip van Klasse I, II en IIA moet daar ten minste twee kragbronne wees vir die open en sluit van alle waterdigte skuifdeure wat volgens die vereistes van hierdie Deel meganies beweeg moet word, en elke krageenheid moet voldoende wees om al sulke deure in die skip gelyktydig te beweeg. 'n Standaanwyser moet by die sentrale punt voorsien wees om aan te dui of voldoende krag vir sodanige doel beskikbaar is. Enige vloeistof wat gebruik word om sulke deure te beweeg, moet nie by die temperature vries wat teëgekom mag word op die reise waarvoor die skip gebruik word.

(7) In elke skip van Klasse I, II en IIA moet elke waterdigte skuifdeur wat meganies beweeg word, van 'n doeltreffende handbewegingsinrigting voorsien word wat aan die deur self sowel as op 'n toeganklike plek bo die beskotdek in werking gestel kan word. Op die plek bo die beskotdek moet die handbewegingsinrigting deur middel van 'n aanhoudende slingerbeweging in werking gestel word.

(8) In elke skip van Klasse I, II en IIA moet 'n waterdigte skuifdeur, indien dit nie vereis word om meganies beweeg te word nie, voorsien wees van 'n doeltreffende handbewegingsinrigting met 'n aanhoudende slingerbeweging, by die deur self sowel as op 'n toeganklike plek bo die beskotdek.

(9) In elke skip van Klasse I, II en IIA moet die handbewegingsinrigting om die waterdigte skuifdeur in die masjinerieruim van bo die beskotdek te beweeg, buite die masjinerieruim geleë wees behalwe waar so 'n posisie nie bestaanbaar is met die doeltreffende plasing van die nodige inrigting nie.

15. WATERDIGTE DEURE: TEKENS EN KOMMUNIKASIE.

(1) Elke waterdigte skuifdeur voorsien in 'n skip van Klas I, II of IIA, moet verbind wees met 'n standaanwyser by elke plek waar die deur gesluit kan word, behalwe by die deur self, wat aantoon of die deur oop of gesluit is.

(2) Daar moet in verband met elke deur waarna in paragraaf (1) verwys word wat meganies beweeg word, voorsiening gemaak word om 'n hoorbare waarskuwing by die deur self te gee wanneer die deur op die punt staan om gesluit te word. Die inrigting moet sodanig wees dat een beweging by die posisie waarvandaan die deur op die punt staan om gesluit te word, voldoende sal wees om die alarm te lui en die deur te sluit, en die teken moet die beweging van die deur voorafgaan met 'n tussenpose wat voldoende is om die beweging van persone en artikels weg van die deur af toe te laat.

(3) Indien enige deur wat volgens hierdie Deel vereis word om waterdig te wees, nie vanaf 'n sentrale punt beweeg kan word nie, moet voorsiening gemaak word vir kommunikasie per telegraaf, telefoon of op 'n ander manier, deur middel waarvan die offisier van die wag met die persoon wat verantwoordelik vir die sluit van die deur is, in verbinding kan kom.

16. KONSTRUKSIE VAN WATERDIGTE DEURE.

(1) Die ontwerp, materiaal en konstruksie van elke deur wat volgens die vereistes van hierdie Deel waterdig moet wees, moet sodanig wees dat die waterdigte beskot waarin dit aangebring is ongeskonde bly.

Enige so 'n deur wat direkte toegang verleen tot 'n ruim wat bunkersteenkool bevat, asook die raam, moet van giet- of weekstaal vervaardig wees. Enige so 'n deur in enige ander posisie moet, asook die raam, van giet- of weekstaal of gietyster vervaardig wees.

(2) Elke waterdigte skuifdeur moet toegerus wees met skuurstroke van geelkoper of soortgelyke materiaal wat of op die deur self of op die deurraam aangebring kan word en wat, indien hulle minder as een duim wyd is, in nisse aangebring moet word.

(3) Indien skroefinrigting gebruik word om so 'n deur te beweeg, moet die skroef in 'n moertjie van geskikte roesvrye metaal werk.

door is situated and shall be so arranged that any person passing through the doorway is able to hold both handles in the open position simultaneously.

(6) In every ship of Classes I, II and IIA there shall be at least two sources of power for opening and closing all sliding watertight doors which are required by this Part to be operated by power, and each power unit shall be sufficient to operate simultaneously all such doors in the ship. An indicator shall be fitted at the central control to show whether sufficient power is available for such purposes. Any fluid used for the purpose of operating such doors shall be incapable of freezing at the temperatures likely to be encountered on the voyages on which the ship is engaged.

(7) In every ship of Classes I, II and IIA, every sliding watertight door which is operated by power shall be provided with efficient hand-operating gear which can be operated both at the door itself and at an accessible position above the bulkhead deck. At the position above the bulkhead deck the hand-operating gear shall be operated with an all-round crank motion.

(8) In every ship of Classes I, II and IIA, if a sliding watertight door is not required to be operated by power, it shall be provided with efficient hand-operating gear with an all-round crank motion, both at the door itself and at an accessible position above the bulkhead deck.

(9) In every ship of Classes I, II and IIA, the hand-operating gear for operating the sliding watertight door in the machinery space from above the bulkhead deck shall be placed outside the machinery space unless such a position is inconsistent with the efficient arrangement of the necessary gearing.

15. WATERTIGHT DOORS.—SIGNALS AND COMMUNICATIONS.

(1) Every sliding watertight door fitted in a ship of Class I, II or IIA, shall be connected with an indicator at each position from which the door may be closed, other than at the door itself, showing whether the door is open or closed.

(2) There shall be provided in connection with every door referred to in paragraph (1) which is operated by power, a means of giving an audible warning at the door itself when the door is about to be closed. The arrangement shall be such that one movement at the position from which the door is about to be closed will be sufficient to sound the signal and to close the door, the signal preceding the movement of the door by an interval sufficient to allow the movement of persons and articles away from the door.

(3) If any door required by this Part to be watertight is not capable of being operated from a central control, means of communication by telegraph, telephone or otherwise shall be provided whereby the officer of the watch may communicate with the person responsible for the closing of the door.

16. CONSTRUCTION OF WATERTIGHT DOORS.

(1) Every door required by this Part to be watertight shall be of such design, material and construction as will maintain the integrity of the watertight bulkhead in which it is fitted.

Any such door giving direct access to any space which may contain bunker coal shall, together with its frame, be made of cast or mild steel. Any such door in any other position shall, together with its frame, be made of cast or mild steel or cast iron.

(2) Every sliding watertight door shall be fitted with rubbing faces of brass or similar material which may be fitted either on the door itself or on the door frame, and which, if they are of less than one inch in width, shall be fitted in recesses.

(3) If screw gear is used for operating such a door, the screw shall work in a nut of suitable non-corrodible metal.

(4) Daar mag nie onder aan die raam van vertikale waterdigte skuifdeure groewe wees waarin vuilgoed kan versamel nie. Die onderkant van so 'n raam, indien dit 'n skeletvorm het, moet so geplaas wees dat vuilgoed nie daarin kan versamel nie. Die onderkant van elke so 'n deur moet gespits of afgeskuins wees.

(5) Elke vertikale waterdigte skuifdeur wat meganies beweeg word, moet so ontwerp en aangebring word dat, indien die kragtoevoer sou faal, daar geen gevaar sal wees dat die deur sal val nie.

(6) Elke horisontale waterdigte skuifdeur moet so aangebring wees dat dit nie beweeg wanneer die skip rol nie, en indien nodig moet 'n werwel of ander geskikte middel vir daardie doel voorsien word. Die middel moet nie die toemaak van die deur verhinder wanneer dit nodig is om dit toe te maak nie.

(7) Die raam van elke waterdigte deur moet in die beskot waarin die deur geleë is, behoorlik aangebring word, en die voegmateriaal tussen die raam en die beskot moet van 'n tipe wees wat nie sal bederf of deur hitte beskadig word nie.

(8) Elke waterdigte deur, wat 'n steenkoolbunkerdeur is, moet van skerms of ander middels voorsien wees om te verhoed dat die steenkool verhinder dat dit gesluit word.

17. OPENINGS IN DIE HUIDBEPLATING ONDERKANT DIE INDOMPELINGSGRENSLYN.

(1) Die getal patryspoorte, spuigate, sanitêre afvoerpype en ander openings in die huidbeplating onderkant die indompelingsgrenslyn in elke Hoofstuk II-skip, moet die minimum wees wat bestaanbaar is met die ontwerp en die behoorlike bediening van die skip.

(2) Die inrigtings vir die sluit van elk so 'n opening onderkant die indompelingsgrenslyn moet bestaanbaar wees met die doel waarvoor dit bestem is en moet sodanig wees dat dit waterdigtheid verseker.

(3) (*a*) In elke skip van Klasse I, II en IIA moet die getal patryspoorte onderkant die indompelingsgrenslyn wat oopgemaak kan word die minimum wees wat bestaanbaar is met die vereistes van die behoorlike bediening van die skip.

(*b*) Indien in 'n tussendek van so 'n skip die laagste punt van opening van enige patryspoort laer geleë is as 'n lyn wat ewewydig getrek is aan die beskotdek op die skeepsboord en wat sy laagste punt twee en 'n half persent van die breedte van die skip bokant die diepste indelingslaswaterlyn het, moet elke patryspoort in daardie tussendek van 'n tipe wees wat nie oopmaak nie. Indien in 'n tussendek van so 'n skip al die laagste punte van opening van die partyspoorte bokant genoemde lyn is, moet elke patryspoort in daardie tussendek van 'n tipe wees wat nie oopmaak nie of wat slegs oopgemaak kan word deur iemand wat deur die gesagvoerder van die skip gemagtig is om dit te doen.

(4) In elke Hoofstuk II-skip van Klas VI moet alle patryspoorte onderkant die indompelingsgrenslyn van 'n tipe wees wat nie oopmaak nie.

(5) In elke Hoofstuk II-skip moet elke patryspoort onderkant die indompelingsgrenslyn voorsien wees van 'n doeltreffende geskarnierde inwendige blinde lig wat permanent aangebring is sodat dit maklik en doeltreffend toe- en waterdig gemaak kan word: Met die voorbehoud dat agter 'n punt een-agste van die skeepslengte vanaf die voorste loodlyn en bokant 'n lyn wat ewewydig getrek is met die beskotdek op die skeepsboord en waarvan die laagste punt geleë is op 'n hoogte van 12 voet plus twee en 'n half persent van die breedte van die skip bo die skip se diepste indelingslaswaterlyn, die blinde ligte vir die toepassing van hierdie Deel, verwyderbaar kan wees in bemannings- en passasiersruimtes.

(6) Patryspoorte mag nie onderkant die indompelingsgrenslyn in enige ruimte in 'n Hoofstuk II-skip wat uitsluitlik vir die vervoer van vrag of steenkool bestem is, aangebring word nie. Indien patryspoorte aangebring word in ruimtes onderkant die indompelingsgrenslyn wat vir die vervoer van òf vrag òf passasiers bestem is, moet sulke patryspoorte en hulle blinde ligte van so 'n aard wees dat hulle nie oopgemaak kan word nie behalwe deur iemand wat deur die gesagvoerder van die skip gemagtig is om dit te doen.

(4) The frame of every vertically sliding watertight door shall have no groove at the bottom thereof in which dirt may lodge. The bottom of such a frame, if it is of skeleton form, shall be so arranged that dirt cannot lodge therein. The bottom edge of every such door shall be tapered or bevelled.

(5) Every vertically sliding watertight door which is operated by power shall be so designed and fitted that, if the power supply ceases, there shall be no danger of the door dropping.

(6) Every horizontally sliding watertight door shall be so installed as to prevent its moving if the ship rolls, and if necessary a clip or other suitable device shall be provided for that purpose. The device shall not interfere with the closing of the door when the door is required to be closed.

(7) The frame of every watertight door shall be properly fitted to the bulkhead in which the door is situated, and the jointing material between the frame and the bulkhead shall be of a type which will not deteriorate or be injured by heat.

(8) Every watertight door, being a coal-bunker door, shall be provided with screens or other devices to prevent coal from interfering with its closing.

17. OPENINGS IN THE SHELL PLATING BELOW THE MARGIN LINE.

(1) In every Chapter II ship, the number of side scuttles, scuppers, sanitary discharges and other openings in the shell plating below the margin line shall be the minimum compatible with the design and proper working of the ship.

(2) The arrangements for closing each such opening below the margin line shall be consistent with its intended purpose and shall be such as will ensure watertightness.

(3) (*a*) In every ship of Classes I, II and IIA the number of side scuttles below the margin line which are capable of being opened shall be the minimum compatible with the requirements of the proper operation of the ship.

(*b*) If in a between decks of such a ship the sills of any side scuttles are below a line drawn parallel to the bulkhead deck at side and having its lowest point two and one-half per cent of the breadth of the ship above the deepest subdivision load water line, every side scuttle in that between decks shall be of a non-opening type. If in a between decks of such a ship all the sills of the side scuttles are above the aforesaid line, every side scuttle in that between decks shall be either of a non-opening type or incapable of being opened except by a person authorised to do so by the master of the ship.

(4) In every Chapter II ship of Class VI, all side scuttles below the margin line shall be of a non-opening type.

(5) In every Chapter II ship, every side scuttle below the margin line shall be fitted with an efficient hinged deadlight permanently attached so that it can be readily and effectively closed and secured watertight: Provided that abaft a point one-eighth of the length of the ship from the forward perpendicular and above a line drawn parallel to the bulkhead deck at side and having its lowest point at a height of 12 feet plus two and one-half per cent of the breadth of the ship above the ship's deepest sub-division load water line, deadlights may for the purposes of this Part be portable in crew spaces and in passenger spaces.

(6) Side scuttles shall not be fitted below the margin line in any space in a Chapter II ship which is appropriated solely to the carriage of cargo or coal. If side scuttles are fitted in spaces below the margin line which may be appropriated to the carriage either of cargo or of passengers, such side scuttles and their deadlights shall be so constructed as to be incapable of being opened except by a person authorised to do so by the master of the ship.

(7) Patryspoorte met outomatiese ventilasie mag nie onderkant die indompelingsgrenslyn in die huidbeplating van enige Hoofstuk II-skip aangebring word nie.

(8) (*a*) In elke Hoofstuk II-skip moet elke inlaat- en afvoerpyp wat deur die huidbeplating onderkant die indompelingsgrenslyn gevoer word, voorsien word van doeltreffende en maklik toeganklike middels om te verhoed dat water die skip per ongeluk binnekom.

(*b*) Sonder benadeling van die algemeenheid van die voorafgaande, moet elke afvoerpyp wat vanaf ruimtes onderkant die indompelingsgrenslyn deur die huidbeplating loop en wat nie 'n afvoerpyp in verband met masjinerie is nie, voorsien wees van òf—

(i) een outomatiese terugslagklep met 'n inrigting waardeur dit regstreeks van 'n maklik toeganklike plek bo die beskotdek van die skip toegemaak kan word en van 'n standaanwyser by die plek waarvandaan die klep gesluit kan word, om aan te dui of die klep oop of toe is; òf

(ii) twee outomatiese terugslagkleppe, die boonste waarvan bo die skip se diepste indelingslaswaterlyn so geleë is dat dit met die oog op die nasien daarvan onder werksomstandighede altyd toeganklik sal wees, en moet dit van 'n horisontaal gebalanseerde tipe wees wat normaal gesluit is.

(*c*) Enige klep wat ooreenkomstig die vereistes van subparagraaf (*b*) aangebring is en wat 'n rataangedrewe klep, of die onderste van twee nie-rataangedrewe kleppe is, moet aan die huidbeplating van die skip vasgeheg word.

(*d*) Alle krane en kleppe wat aan inlaat- of afvoerpype vas is, behalwe inlaat- of afvoerpype wat in verband staan met masjinerie, en wat krane of kleppe is wat onderkant die indompelingsgrenslyn aangebring is of wat met die indeling van die skip in verband sou staan indien dit nie meer behoorlik sou werk nie, moet van staal, brons of ander ewe doeltreffende materiaal gemaak wees.

(*e*) Hoof- en hulpinlaat- en afvoerpype wat in verband staan met masjinerie moet voorsien word van geredelik toeganklike krane of kleppe tussen die pype en die huidbeplating van die skip of tussen die pype en 'n kas wat aan die huidbeplating bevestig is. Sulke krane of kleppe van 'n kaliber van meer as drie duim wat aan sulke inlaat- of afvoerpype bevestig is, moet van staal, brons of ander ewe geskikte materiaal gemaak word. Indien dit van staal gemaak is, moet sulke krane en kleppe teen roes beskerm word.

(*f*) Afvoerpype wat deur die huidbeplating onderkant die indompelingsgrenslyn van enige skip van Klasse I, II en IIA gevoer word, moet nie in 'n direkte lyn met die buiteboordopening en die verbinding met die dek, waterkloset of ander soortgelyke uitrusting aangebring word nie, maar moet met krommings of elmboë van soliede metaal behalwe gietyster of lood opgestel word.

(*g*) Alle afvoerpype wat deur die huidbeplating onderkant die indompelingsgrenslyn in die skip gevoer word en die kleppe wat daarmee in verband staan, moet beskerm word teen beskadiging.

(*h*) Die koppe van alle boute wat krane, kleppe, afvoerpype en ander soortgelyke uitrusting wat onderkant die indompelingsgrenslyn met die huidbeplating van die skip verbind, moet buite die huidbeplating wees en hierdie boute moet of versonke boute of rondekopboute wees.

(*i*) Doeltreffende middels moet voorsien word vir die dreinering van alle waterdigte dekke onderkant die indompelingsgrenslyn in die skip en enige dreineringspyp moet so voorsien wees van kleppe of andersins ingerig wees dat dit die gevaar verhoed van water wat van 'n beskadigde na 'n onbeskadigde deel vloei.

(*j*) Die binneboordse opening van elke stortkoker vir as, vuil en ander soortgelyke doeleindes in die skip moet van 'n deeglike waterdigte deksel voorsien word, en indien sodanige opening onderkant die indompelingsgrenslyn is, moet dit ook voorsien word van 'n outomatiese terugslagklep in die koker op 'n maklik toeganklike plek bo die diepste indelingslaswaterlyn van die skip. Die klep moet van die horisontale gebalanseerde tipe wees wat normaal sluit en voorsien wees van plaaslike middels om dit in 'n geslote posisie te bevestig. Die vereistes van hierdie para-

(7) Automatic ventilating side scuttles shall not be fitted below the margin line in the shell plating of any Chapter II ship.

(8) (*a*) In every Chapter II ship, each inlet and discharge led through the shell plating below the margin line shall be fitted with efficient and readily accessible means for preventing the accidental admission of water into the ship.

(*b*) Without prejudice to the generality of the foregoing, each discharge led through the shell plating from spaces below the margin line, not being a discharge in connection with machinery, shall be provided with either—

(i) one automatic non-return valve fitted with a positive means by which it can be closed from a readily accessible position above the ship's bulkhead deck and with an indicator at the position from which the valve may be closed to show whether the valve is open or closed; or

(ii) two automatic non-return valves, the upper of which is so situated above the ship's deepest subdivision load water line as to be always accessible for examination under service conditions and is of a horizontal balanced type which is normally closed.

(*c*) Any valve fitted in compliance with the requirements of sub-paragraph (*b*) which is a geared valve, or the lower of two non-geared valves, shall be secured to the ship's shell plating.

(*d*) All cocks and valves attached to inlets or discharges other than inlets or discharges connected with machinery, being cocks or valves fitted below the margin line or the failure of which may affect the subdivision of the ship, shall be made of steel, bronze, or other equally efficient material.

(*e*) Main and auxiliary inlets and discharges connected with machinery shall be fitted with readily accessible cocks or valves between the pipes and the ship's shell plating or between the pipes and a fabricated box attached to the shell plating. Such cocks or valves of more than 3 inch bore attached to such inlets or discharges shall be made of steel, bronze, or other equally efficient material. If made of steel, such cocks and valves shall be protected against corrosion.

(*f*) Discharge pipes led through the shell plating below the margin line of any ship of Classes I, II and IIA, shall not be fitted in a direct line between the outboard opening and the connection with the deck, water closet or other similar fitting, but shall be arranged with bends or elbows of substantial metal other than cast iron or lead.

(*g*) All discharge pipes led through the shell plating below the margin line in the ship and the valves relating thereto, shall be protected from damage.

(*h*) All bolts connecting cocks, valves, discharge pipes and other similar equipment to the shell plating of the ship below the margin line shall have their heads outside the shell plating, and shall be either countersunk or cupheaded.

(*i*) Efficient means shall be provided for the drainage of all watertight decks below the margin line in the ship and any drainage pipes shall be so fitted with valves or otherwise arranged as to avoid the danger of water passing from a damaged to an undamaged compartment.

(*j*) The inboard opening of every ash-shoot, rubbish-shoot and other similar shoot in the ship shall be fitted with an efficient watertight cover, and, if such opening is below the margin line, it shall also be fitted with an automatic non-return valve in the shoot in a readily accessible position above the ship's deepest subdivision load water line. The valve shall be of the horizontal balanced type, normally closed and provided with local means for securing it in a closed position. The require-

graaf is nie van toepassing op asuitstoters en uitdrywers waarvan die binneboordse openings in die skeepsruim, en noodwendig onderkant die diepste indelingslaswaterlyn, gelê is nie. Sulke uitstoters en uitdrywers moet voorsien wees van middels wat voorkom dat water in die skip kom.

(*k*) Enige deurgangs-, laai- of steenkoolpoort wat onderkant die indompelingsgrenslyn van die skip aangebring is, moet sterk genoeg wees en sy laagste punt moet nie onderkant die skip se diepste indelingslaswaterlyn wees nie.

[OPMERKING.—Die aandag word gevestig op regulasie 90 ingevolge waarvan 'n Hoofstuk II-skip van Klas VI van die vereistes van paragraaf (8) vrygestel kan word.]

18. OPENINGS IN DIE SKEEPSBOORD EN ELDERS BO DIE INDOMPELINGSGRENSLYN.

In elke Hoofstuk II-skip moet patryspoorte, deurgangs-, laai- en steenkoolpoorte en ander openings in die huidbeplating bokant die indompelingsgrenslyn en die middels waardeur hulle gesluit word van doeltreffende ontwerp en konstruksie wees en, met inagneming van die ruimtes waarin hulle aangebring word en van hul posisie met betrekking tot die diepste indelingslaswaterlyn en die voornemende diens van die skip, sterk genoeg wees.

19. DEK WAT AAN WIND EN WEER BLOOTGESTEL IS.

In elke Hoofstuk II-skip moet die beskotdek of 'n dek bo die beskotdek dig wees teen wind en weer. Alle openings in 'n dek wat dig teen wind en weer is, moet luikhoofde hê wat hoog en sterk genoeg is en moet voorsien wees van doeltreffende en snel middels om hulle teen wind en weer af te sluit. Waterafvoerpoorte of spuigate moet voorsien word om die water van sodanige dek af te voer onder alle weerstoestande.

20. INDELINGSLASLYNE.

(1) Elke Hoofstuk II-skip moet aan die skeepsboorde midskeeps gemerk word met die indelingslaslyne wat deur die Minister (of Sekretaris in die geval van 'n plaaslike laslynskip) daaraan toegewys is. Die merke moet bestaan uit horisontale lyne, 'n duim breed en nege duim lank, in die geval van 'n skip wat 'n laslynskip is vir die toepassing van die Wet, en twaalf duim lank in die geval van enige ander skip. Die merke moet in wit of geel op 'n donker agtergrond of in swart op 'n ligte agtergrond geverf word en moet ook in yster- of staalskepe ingesny of gesenterpons word en in houtskepe ingesny word.

(2) Die indelingslaslyne moet met die letter C aangedui word en in die geval van skepe van Klasse I en II, met opeenvolgende nommers vanaf die boonste indelingslaslyn wat C_1 gemerk moet word. In die geval van Hoofstuk II-skepe van Klasse IIA en VI—

(*a*) indien daar net een indelingslaslyn is, moet dit met die letter C aangedui word;

(*b*) indien daar meer as een indelingslaslyn is, moet die indelingslaslyne met die letter C en met daaropvolgende letters vanaf die boonste indelingslaslyn wat C_A gemerk moet word, aangedui word.

Die aanduidende letters en syfers moet in elke geval op die skeepsboorde geverf en gesny of gesenterpons word, wat die geval ookal is, op dieselfde wyse as die lyne waarna hulle verwys.

HOOFSTUK II (A).—VEREISTES VIR SKEPE WAT NIE VEREIS WORD OM AAN HOOFSTUK II TE VOLDOEN NIE.

21. TOEPASSING VAN HOOFSTUK II (A).

Hierdie Hoofstuk is van toepassing op elke skip van Klas VI wat minder as 151 passasiers vervoer, en 'n „Hoofstuk II (A)-skip" beteken 'n skip waarop hierdie Hoofstuk aldus van toepassing is.

22. OPENINGS IN DIE SKEEPSBOORDE.

(1) Doeltreffende middels moet voorsien word om te voorkom dat water per ongeluk in enige Hoofstuk II (A)-skip inkom deur enige openings in die skeepsboorde.

ments of this paragraph shall not apply to ash ejectors and expellers the inboard openings of which are in the ship's stokehold and necessarily below the deepest subdivision load water line. Such ejectors and expellers shall be fitted with means which will prevent water entering the ship.

(*k*) Any gangway port, cargo port, or coaling port fitted below the margin line of the ship shall be of adequate strength and its lowest point shall not be below the ship's deepest subdivision load water line.

[NOTE.—Attention is invited to regulation 90 in terms of which a Chapter II ship of Class VI may be exempted from the requirements of paragraph (8).]

18. SIDE AND OTHER OPENINGS ABOVE THE MARGIN LINE

In very Chapter II ship, side scuttles, gangway ports, cargo ports, coaling ports, and other openings in the shell plating above the margin line and their means of closing shall be of efficient design and construction and of sufficient strength having regard to the spaces in which they are fitted and their positions relative to the deepest subdivision load water line, and to the intended service of the ship.

19. WEATHER DECK.

In every Chapter II ship, the bulkhead deck or a deck above the bulkhead deck shall be weathertight. All openings in a weathertight deck shall have coamings of adequate height and strength and shall be provided with efficient and rapid means of closing so as to make them weathertight. Freeing ports or scuppers shall be provided for clearing such deck of water under all weather conditions.

20. SUBDIVISION LOAD LINES.

(1) Every Chapter II ship shall be marked on its sides amidships with the subdivision load lines assigned to it by the Minister (or Secretary in the case of a local load line ship). The marks shall consist of horizontal lines one inch in breadth, and nine inches in length in the case of a ship which is a load line ship for the purposes of the Act and twelve inches in length in the case of any other ship. The marks shall be painted in white or yellow on a dark ground or in black on a light ground, and shall also be cut in or centre-punched on iron or steel ships, and cut into the planking on wood ships.

(2) The subdivision load lines shall be identified with the the letter C, and, in the case of ships of Classes I and II, with consecutive numbers beginning from the deepest subdivision load line which shall be marked C_1. In the case of Chapter II ships of Classes IIA and VI—

(*a*) if there is only one subdivision load line it shall be identified with the letter C;

(*b*) if there is more than one subdivision load line, the subdivision load lines shall be identified with the letter C and with consecutive letters beginning from the deepest subdivision load line, which shall be marked C_A.

The identifying letters and numerals, shall in every case be painted and cut or centre-punched, as the case may be, on the sides of the ship in the same manner as the lines to which they relate.

CHAPTER II (A).—REQUIREMENTS FOR SHIPS NOT REQUIRED TO COMPLY WITH CHAPTER II.

21. APPLICATION OF CHAPTER II (A).

This Chapter applies to every ship of Class VI carrying less than 151 passengers, and a "Chapter II (A) ship" means a ship to which this Chapter so applies.

22. OPENINGS IN THE SIDES OF THE SHIP.

(1) Effective means shall be provided for preventing the accidental admission of water into any Chapter II (A) ship through any openings in the sides of the ship.

(2) Elke patryspoort wat in die skip aangebring word, moet van die tipe wees wat nie oopmaak nie en moet waterdig wees, en moet, met inagneming van sy posisie in die skip, sterk genoeg wees.

HOOFSTUK III.—LENSPOMPINRIGTINGS.

23. Toepassing van Hoofstuk III.

Hierdie Hoofstuk is op alle skepe van toepassing.

24. Algemeen.

Behalwe in die geval van oop skepe van Klas VI wat nie langer as 40 voet is nie en nie reise onderneem na 'n punt verder as vyf myl van die vertrekpunt af nie, moet elke skip voorsien wees van 'n doeltreffende pompinrigting wat in staat is om onder alle omstandighede wat in die praktyk na 'n ongeluk mag voorkom, hetsy die skip regop lê of nie, uit enige waterdigte afdeling te pomp en dit te dreineer. Suigopenings aan die kante moet voorsien word indien dit vir daardie doel nodig is. Doeltreffende maatreëls moet getref word om te verseker dat water in enige waterdigte afdeling sy weg na die suigpype sal vind. Doeltreffende middels moet voorsien word om die water uit alle geïsoleerde ruime en geïsoleerde tussendekke in die skip te dreineer.

25. Getal en tipe lenspompe: Skepe van Klasse I en II.

(1) Elke skip van Klasse I en II moet voorsien wees van pompe wat met die hooflensleiding verbind is in ooreenstemming met die volgende tabel:—

Lengte van skip.	Minder as 300 voet.		300 voet en groter.	
Kriteriumsyfer.	Minder as 30.	30 en groter.	Minder as 30.	30 en groter.
Getal handpompe van die kruktipe (kan deur een onafhanklike kragpomp vervang word).....	2	—	—	—
Getal hoofmasjienpompe (kan deur een onafhanklike kragpomp vervang word).....	1	1	1	1
Getal onafhanklike kragpompe.....	1	3	2	3

(2) Die pompinrigting waarna in paragraaf (1) verwys word, moet soos volg ingerig word:—

(*a*) In skepe voorsien van twee handpompe van die kruktipe ooreenkomstig paragraaf (1), moet een van sodanige pompe voor en een agter in die skip aangebring word;

(*b*) in alle ander skepe van Klasse I en II—

(i) moet een van die pompe 'n doeltreffende noodpomp van 'n onderdompelbare tipe wees met 'n kragbron en die nodige kontroles wat bo die skip se beskotdek geleë is; of

(ii) moet die kragpompe en hulle kragbronne in die skip oor die hele lengte van die skip so verdeel wees dat daar in enige oorstromingstoestand wat die skip moet weerstaan, minstens een pomp in 'n onbeskadigde waterdigte afdeling beskikbaar sal wees.

(2) Every side scuttle fitted in the ship shall be of the non-opening type and shall be watertight and of sufficient strength having regard to its position in the ship.

CHAPTER III.—BILGE PUMPING ARRANGEMENTS.

23. Application of Chapter III.

This Chapter applies to every ship.

24. General.

Except in the case of open ships of Class VI not exceeding 40 feet in length and not proceeding on voyages to a point more than 5 miles from the starting point, every ship shall be provided with an efficient pumping plant capable of pumping from and draining any watertight compartment in the ship under all conditions likely to arise in practice after a casualty, whether or not the ship remains upright. Wing suctions shall be provided if necessary for that purpose. Efficient arrangements shall be provided whereby water in any watertight compartment may find its way to the suction pipes. Efficient means shall be provided for draining water from all insulated holds and insulated between decks in the ship.

25. Number and Type of Bilge Pumps: Ships of Classes I and II.

(1) Every ship of Classes I and II shall be provided with pumps connected to the bilge main in accordance with the following table:—

Length of Ship.	Less than 300 ft.		300 ft. or over.	
Criterion Numeral.	Less than 30.	30 and over.	Less than 30.	30 and over.
Number of hand pumps of the crank type (may be replaced by one independent power pump).....	2	—	—	—
Number of main engine pumps (may be replaced by one independent power pump).....	1	1	1	1
Number of independent power pumps.....	1	3	2	3

(2) The pumping plant referred to in paragraph (1) shall be arranged as follows:—

(*a*) In ships provided with two hand pumps of the crank type in compliance with paragraph (1), one of such pumps shall be installed forward and the other aft;

(*b*) in all other ships of Classes I and II—

(i) one of the pumps shall be an efficient emergency pump of a submersible type having its source of power and the necessary controls situated above the ship's bulkhead deck; or

(ii) the power pumps in the ship and their sources of power shall be so disposed throughout the ship's length that under any condition of flooding which the ship is required to withstand, at least one such pump in an undamaged watertight compartment will be available.

26. GETAL EN TIPE LENSPOMPE: SKEPE VAN KLAS IIA.

(1) Elke skip van Klas IIA moet van lenspompe voorsien word ooreenkomstig die volgende tabel:—

Lengte van skip in voet.	Getal pompe.		
	Hoofenjin-pomp.*	Onafhanklike kragpompe.	Handpompe.†
Onder 50	1	—	Een van die hefboomtipe vir elke waterdigte afdeling, of een van die kruktipe.
50 en onder 100	1	1	Een van die hefboomtipe vir elke waterdigte afdeling, of een van die kruktipe.
100 en onder 250	1	1	Een van die kruktipe.
250 en onder 300	1	1	Twee van die kruktipe.
300 en groter	1	2	—

* Die hoofenjinpomp kan deur een onafhanklike kragpomp vervang word.
† Die handpompe wat in hierdie kolom vermeld word, kan deur een onafhanklike kragpomp vervang word.

26. NUMBER AND TYPE OF BILGE PUMPS: SHIPS OF CLASS IIA.

(1) Every ship of Class IIA shall be provided with bilge pumps in accordance with the following table:—

Length of Ship in feet.	Number of Pumps.		
	Main Engine Pump.*	Independent Power Pumps.	Hand Pumps.†
Under 50	1	—	One of the lever type for each watertight compartment, or one of the crank type.
50 and under 100	1	1	One of the lever type for each watertight compartment, or one of the crank type.
100 and under 250	1	1	One of the crank type.
250 and under 300	1	1	Two of the crank type.
300 and over	1	2	—

* The main engine pump may be replaced by one independent power pump.
† The handpumps specified in this column may be replaced by one independent power pump.

(2) In elke skip van Klas IIA met 'n lengte van minder as 300 voet maar nie minder as 250 voet nie voorsien van twee handpompe van die kruktipe ooreenkomstig paragraaf (1), in elk so 'n skip met 'n lengte van 300 voet of meer en in elke skip met 'n lengte van minder as 300 voet waar die handpomp of -pompe deur 'n onafhanklike kragpomp vervang is, is paragraaf (2) van regulasie 25 van toepassing op die pompinrigtings soos dit op die pompinrigtings in skepe van Klasse I en II van toepassing is.

27. GETAL EN TIPE LENSPOMPE, ENS.: SKEPE VAN KLAS VI.

Elke skip van Klas VI moet soos volg voorsien wees van lenspompe en middels vir uithosing:—

(*a*) 'n Skip met 'n lengte van meer as 60 voet, met 'n kragpomp wat deur die hoofenjin aangedryf word, en daarbenewens met 'n handpomp behalwe 'n handpomp van die hefboomtipe;

(*b*) 'n skip wat van 'n dek voorsien is en met 'n lengte van hoogstens 60 voet, met 'n handpomp behalwe 'n handpomp van die hefboomtipe;

(*c*) 'n skip wat gedeeltelik van 'n dek voorsien is en met 'n lengte van hoogstens 60 voet, met 'n handpomp en daarbenewens twee uithosers of een uithoser en een emmer;

(*d*) 'n oop skip met 'n lengte van meer as 40 voet maar hoogstens 60 voet, met 'n handpomp en daarbenewens twee uithosers of een uithoser en een emmer;

(*e*) 'n oop skip met 'n lengte van hoogstens 40 voet en wat verder as 5 myl vanaf die vertrekpunt van die reis vaar, met 'n handpomp en daarbenewens twee uithosers of een uithoser en een emmer;

(*f*) 'n oop skip met 'n lengte van hoogstens 40 voet en wat nie reise verder as 5 myl vanaf die vertrekpunt onderneem nie, met twee uithosers of een uithoser en een emmer.

(2) In every ship of Class IIA of less than 300 feet but not less than 250 feet in length provided with two hand pumps of the crank type in accordance with paragraph (1), in every such ship of 300 feet in length or over and in every ship of under 300 feet in length where the hand pump or pumps are replaced by an independent power pump, paragraph (2) of regulation 25 shall apply to the pumping arrangements as it applies to the pumping arrangements in ships of Classes I and II.

27. NUMBER AND TYPE OF BILGE PUMPS, ETC.: SHIPS OF CLASS VI.

Every ship of Class VI shall be provided with bilge pumps and means for bailing as follows:—

(*a*) A ship exceeding 60 feet in length, with a power pump, which may be worked by the main engine, and, in addition, with a hand pump other than a hand pump of the lever type;

(*b*) a decked ship not exceeding 60 feet in length, with a hand pump other than a hand pump of the lever type;

(*c*) a partially decked ship not exceeding 60 feet in length, with a hand pump, and, in addition, with two bailers or one bailer and one bucket;

(*d*) an open ship exceeding 40 feet in length but not exceeding 60 feet in length, with a hand pump, and, in addition, with two bailers or one bailer and one bucket;

(*e*) an open ship not exceeding 40 feet in length, and proceeding beyond 5 miles from the starting point of her voyage, with a hand pump, and, in addition, with two bailers or one bailer and one bucket;

(*f*) an open ship not exceeding 40 feet in length, and not proceeding on voyages more than 5 miles from the starting point, with two bailers or one bailer and one bucket.

28. VEREISTES VIR LENSPOMPE EN LENSSUIGINGS.

(1) Kraglenspompe wat in enige skip aangebring word moet, wanneer dit prakties uitvoerbaar is, in afsonderlike waterdigte afdelings geplaas word wat so ingerig of geleë is dat hulle nie maklik as gevolg van dieselfde skade sal volloop nie, en indien die enjins en stoomketels in twee of meer waterdigte afdelings geplaas is, moet die lenspompe wat daar beskikbaar is sover moontlik oor hierdie afdelings verdeel word.

(2) Elke lenspomp wat in die skip voorsien word ooreenkomstig hierdie Deel, moet self-laaiend wees tensy doeltreffende laaimiddels voorsien word. Elke sodanige pomp, behalwe 'n handpomp van die hefboomtipe en 'n pomp wat slegs vir piekafdelings voorsien word, moet hetsy dit met die hand of meganies beweeg word, so ingerig wees om water uit enige ruim of enige deel van die masjinerieruim in die skip te pomp.

(3) Elke onafhanklike kraglenspomp in die skip moet in staat wees om water teen 'n snelheid van nie minder as 400 voet per minuut nie deur die hooflenspyp te pomp. Elke sodanige pomp moet van 'n regstreekse suiging voorsien word van die ruimte waarin dit geleë is. Met die voorbehoud dat daar nie meer as twee regstreekse suigings in een ruim vereis word nie. Elke sodanige suiging moet 'n deursnee hê wat nie kleiner is as dié van die skip se hooflenspyp nie. Die regstreekse suigings in die masjinerieruim van die skip moet so ingerig wees dat water vanaf elke kant van die ruim deur regstreekse suigings na onafhanklike lenspompe gepomp kan word.

(4) Daar moet in die stookruim van elke skip wat steenkool as brandstof gebruik 'n buigbare suigslang met voldoende lengte aangebring word wat in staat is om vanaf 'n inrigting aan 'n onafhanklike kraglenspomp in die skip tot by elke kant van die stookruimkimme te strek. Hierdie suigslang is behalwe die ander lenssuigings wat by hierdie regulasie vereis word, en moet 'n interne deursnee hê van vier duim, of halfduim groter as dié van die grootste taklenssuiging wat by regulasie 30 vereis word, watter ookal die minste is.

(5) Enige hoofenjinsirkulasiepompe in die skip moet aangebring word met regstreekse suigverbindings, voorsien van terugslagkleppe, tot by die laagste dreineringsvlak in die skip se masjinerieruim, of so na daaraan as wat die Minister (of die Sekretaris in die geval van 'n skip wat nie bedoel is vir gebruik op internasionale reise nie) in die geval van daardie skip tevrede stel. Sulke verbindings moet 'n deursnee hê van ten minste twee-derdes van dié van die skip se hoofsirkulasie-inlaat, en die oop ent daarvan of die sif, as daar een is, wat daaraan verbind is, moet toeganklik wees vir skoonmaakdoeleindes. Indien steenkool as stoomketelbrandstof gebruik kan word en daar nie 'n waterdigte beskot tussen die enjins en die stoomketels is nie, moet 'n regstreekse uitlaat na buiteboord vanaf minstens een van voornoemde pompe aangebring word, tensy 'n regstreekse aansluiting op die sirkulasie-uitlaatleiding daarvan aangebring word. Die stange van die skip se hoofsirkulasie-inlaat en van die regstreekse suigkleppe moet redelik bo die platform van die enjinkamer uitsteek.

(6) Die handlenspompe in die skip moet vanaf bo die skip se beskotdek, as daar een is, gereël kan word, en moet so ingerig wees dat die pompsuierklep en die stertklep vir ondersoek en nasien uitgehaal kan word in die geval van oorstroming. Indien twee handpompe van die kruktipe in die skip aangebring is, moet 'n afsluitklep of -kraan wat van bo die skip se beskotdek gereël word of terugslagkleppe voorsien word sodat enigeen van beide sulke pompe oopgemaak kan word sonder om die doeltreffendheid van die ander een te beïnvloed.

29. INRIGTING VAN LENSPYPE.

(1) In elke skip moet alle pype vanaf die pompe wat vir die dreinering van vragruime of enige deel van die masjinerieruim nodig is, afsonderlik wees van dié pype wat gebruik kan word om ruimtes waarin water of olie vervoer word, te vul of leeg te maak.

28. REQUIREMENTS FOR BILGE PUMPS AND BILGE SUCTIONS.

(1) Power bilge pumps fitted in any ship, shall where practicable be placed in separate watertight compartments so arranged or situated as not to be readily flooded by the same damage, and if the ship's engines and boilers are in two or more watertight compartments the bilge pumps there available shall be distributed through such compartments as far as possible.

(2) Every bilge pump provided in the ship in compliance with this Part shall be self-priming unless efficient means of priming are provided. Every such pump, other than a hand pump of the lever type and a pump provided for peak compartments only, shall, whether operated by hand or by power, be so arranged as to be capable of drawing water from any hold or any part of the machinery space in the ship.

(3) Every independent power bilge pump in the ship shall be capable of giving a speed of water through the ship's main bilge pipe of not less than 400 feet per minute. Every such pump shall have a direct suction from the space in which it is situated. Provided that not more than two direct suctions shall be required in any one space. Every such suction shall be of a diameter not less than that of the ship's main bilge pipe. The direct suctions in the ship's machinery space shall be so arranged that water may be pumped from each side of the space through direct suctions to independent bilge pumps.

(4) There shall be provided in the stokehold of every ship, being a coal burning ship, a flexible suction hose of sufficient length to reach from a fitting on an independent power bilge pump in the ship to each side of the stokehold bilges. The hose shall be in addition to the other bilge suctions required by this regulation, and shall have an internal diameter of 4 inches, or $\frac{1}{2}$ inch larger than that of the largest branch bilge suction required by regulation 30, whichever is the less.

(5) Any main engine circulating pumps in the ship shall be fitted with direct suction connections, provided with non-return valves, to the lowest drainage level in the ship's machinery space, or as near thereto as will satisfy the Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) in the case of that ship. Such connections shall be of a diameter at least two-thirds of that of the ship's main sea inlet, and the open end thereof or the strainer, if any, attached thereto shall be accessible for clearing. If the boiler fuel may be coal and there is no watertight bulkhead between the ship's engines and boilers, a direct discharge overboard shall be fitted from at least one of the aforesaid pumps unless a by-pass is fitted to the circulating discharge thereof. The spindles of the ship's main sea inlet and of the direct suction valves shall extend well above the engine room platform.

(6) The hand bilge pumps in the ship shall be workable from above the ship's bulkhead deck, if any, and shall be so arranged that the bucket and tail valve can be withdrawn for examination and overhaul under flooding conditions. If two hand pumps of the crank type are fitted in the ship, a shut-off valve or cock operated from above the ship's bulkhead deck or non-return valves shall be provided to enable either of such pumps to be opened up without affecting the efficiency of the other.

29. ARRANGEMENT OF BILGE PIPES.

(1) In every ship, all pipes from the pumps for draining cargo spaces or any part of the machinery space shall be distinct from pipes which may be used for filling or emptying spaces in which water or oil is carried.

(2) Loodpype mag nie in verband met lenspompe in enige skip in of onder steenkoolbunkers, oliebrandstoftenks of in enige afdeling waarin oliebesinktenks of oliepompeenhede geleë is nie, aangebring word nie.

(3) Lenssuigpompe in enige skip mag nie deur olietenks gevoer word tensy die pype in 'n oliedigte verkeersgang ingesluit is nie. Sulke pype mag nie deur dubbelbodemtenks gevoer word nie.

(4) Sulke pype moet met flensverbindings gemaak word en deeglik in posisie bevestig word en waar nodig teen die gevaar van beskadiging beskerm word. Doeltreffende uitsettingslasse of -krommings moet in elke pypleiding voorsien word, en waar 'n verbinding by 'n beskotdek of elders met 'n loodkromming gemaak word, moet die straal van elke kromming en die afstand tussen die asse van die reguit gedeeltes van die pype nie minder as drie keer die deursnee van die pyp wees nie en die lengte van enige kromming mag nie minder as agt keer daardie deursnee wees nie.

30. DEURSNEE VAN LENSSUIGPYPE.

(1) Onderworpe aan die bepalings van paragrawe (2) en (3) moet die binneste deursnee van hoof- en taklenssuigpype in elke skip van Klasse I, II en IIA, en elke skip van Klas VI wat by regulasie 27 vereis word om van 'n pomp voorsien te wees, tot die naaste kwart duim bepaal word volgens die volgende formules:—

$$d_m = \sqrt{\frac{L\,(B + D)}{2,500}} + 1$$

$$d_b = \sqrt{\frac{l\,(B + D)}{1,500}} + 1$$

waar d_m = binneste deursnee van die hooflenssuigpype in duime.
d_b = binneste deursnee van die taklenssuigpype in duime.
L = lengte van die skip in voet.
B = breedte van die skip in voet.
D = holte ooreenkomstig die mal van die skip gemeet op die beskotdek, in voet.
l = lengte van kompartement in voet.

(2) Geen hooflenssuigpyp in enige skip van Klasse I, II en IIA mag 'n binnedeursnee van minder 2½ duim hê nie, en die binnedeursnee van geen taksuigpyp mag minder as twee duim wees of hoef meer as vier duim te wees nie.

(3) Geen lenssuigpyp in enige skip van Klas VI, wat by regulasie 27 vereis word om van 'n pomp voorsien te wees, mag 'n binnedeursnee van minder as 1¼ duim hê nie.

31. VOORSORGMAATREËLS TEEN OORSTROMING DEUR LENSPYPE.

(1) Die lens- en ballaspompstelsels in elke Hoofstuk II-skip moet so ingerig wees dat dit sal verhoed dat water vanaf die see of vanaf waterballasruime die skip se vragruime of enige deel van die masjinerieruim sal binnekom of uit een waterdigte afdeling in die skip na 'n ander sal stroom. Die lensverbinding met enige pomp wat suiging van die see of waterballasruime bewerkstellig moet gemaak word òf deur middel van 'n terugslagklep òf 'n kraan wat nie terselfdertyd na die kimme en na die see of na die kimme en die waterballasruime geopen kan word nie. Kleppe in lensverdeelkaste moet van die terugslag-tipe wees. 'n Inrigting van sluitkleppe of blinde flense moet voorsien word om te verhoed dat enige dieptenk in so 'n skip deur onagsaamheid met seewater volloop wanneer dit vrag bevat of deur 'n lenspyp leeggepomp word wanneer dit waterballas bevat, en instruksies vir die bediening van sodanige inrigting moet digby in 'n opvallende plek vertoon word.

(2) Daar moet in elke Hoofstuk II-skip voorsiening gemaak word om te verhoed dat enige waterdigte afdeling wat deur 'n lenssuigpyp bedien word, sal volloop in die geval van die breek of andersins beskadiging van die pyp in 'n ander afdeling as gevolg van 'n botsing of wanneer die skip grond raak. Wanneer enige deel van so 'n pyp nader aan die skeepsboord geleë is as een-vyfde van die midskeepse breedte van die skip gemeet by die hoogte van die diepste indelingslaswaterlyn, of wanneer dit in 'n kokerkiel geleë is, moet 'n terugslagklep aan die pyp aangebring word in die waterdigte afdeling wat die oop ent van die pyp bevat.

(2) Lead pipes shall not be fitted in connection with bilge pumps in any ship in or under coal bunkers, oil fuel storage tanks or in any compartment in which oil settling tanks or oil fuel pumping units are situated.

(3) Bilge suction pipes in any ship shall not be led through oil tanks unless the pipes are enclosed in an oil-tight trunkway. Such pipes shall not be led through double bottom tanks.

(4) Such pipes shall be made with flanged joints and shall be thoroughly secured in position and protected where necessary against the risk of damage. Efficient expansion joints or bends shall be provided in each line of pipe, and where a connection is made at a bulkhead or elsewhere with a lead bend, the radius of each bend and the distance between the axes of the straight parts of the pipes shall be not less than three times the diameter of the pipe and the length of any bend shall be not less than eight times that diameter.

30. DIAMETER OF BILGE SUCTION PIPES.

(1) Subject to the provisions of paragraphs (2) and (3), in every ship of Classes I, II and IIA, and in every ship of Class VI, which is required by regulation 27 to be provided with a pump, the internal diameter of main and branch bilge suction pipes shall be determined to the nearest ¼ inch calculated according to the following formulae:—

$$d_m = \sqrt{\frac{L\,(B + D)}{2,500}} + 1$$

$$d_b = \sqrt{\frac{l\,(B + D)}{1,500}} + 1$$

where d_m = internal diameter of the main bilge suction pipes in inches.
d_b = internal diameter of the branch bilge suction pipes in inches.
L = length of ship in feet.
B = breadth of ship in feet.
D = moulded depth of ship at bulkhead deck in feet.
l = length of compartment in feet.

(2) No main bilge suction pipe in any ship of Classes I, II and IIA shall be less than 2½ inches in bore, and no branch suction pipe shall be less than 2 inches, or need be more than 4 inches, in bore.

(3) No bilge suction pipe in any ship of Class VI, which is required by regulation 27 to be provided with a pump, shall be less than 1¼ inches in bore.

31. PRECAUTIONS AGAINST FLOODING THROUGH BILGE PIPES.

(1) The bilge and ballast pumping systems in every Chapter II ship shall be so arranged as to prevent water passing from the sea or from water ballast spaces into the ship's cargo spaces or into any part of the machinery space or from one watertight compartment in the ship to another. The bilge connection to any pump which effects suction from the sea or from water ballast spaces shall be made by means of either a non-return valve or a cock which cannot be opened at the same time to the bilges and to the sea or to the bilges and the water ballast spaces. Valves in bilge distribution boxes shall be of a non-return type. An arrangement of lock-up valves or of blank flanges shall be provided to prevent any deep tank in such a ship being inadvertently run up from the sea when it contains cargo or pumped out through a bilge pipe when it contains water ballast, and instructions for the working of such arrangement shall be conspicuously displayed nearby.

(2) Provision shall be made in every Chapter II ship to prevent the flooding of any watertight compartment served by a bilge suction pipe in the event of the pipe being severed or otherwise damaged, by collision or grounding, in any other watertight compartment. Where any part of such a pipe is situated nearer to the side of the ship than one-fifth of the mid-ship breadth of the ship measured at the level of the deepest subdivision load water line, or in any duct keel, a non-return valve shall be fitted to the pipe in the watertight compartment containing the open end of the pipe.

32. LENSKLEPPE, -KRANE, ENS.

(1) Alle verdeelkaste, kleppe en krane in elke Hoofstuk II-skip wat in verband met die lenspompinrigtings aangebring word, moet op plekke wees wat te alle tye onder gewone omstandighede toeganklik is en hulle moet so ingerig wees dat in die geval van oorstroming een van die lenspompe op enige waterdigte afdeling in die skip kan werk. Indien daar in enige so 'n skip slegs een pypleidingsstelsel deur al die pompe bedien word, moet die nodige kleppe of krane vir die beheer van die lenssuigings van bo die beskotdek van die skip gereël kan word. Indien daar benewens die hooflenspompinrigting 'n noodlenspopmpinrigting aangebring is, moet dit onafhanklik wees van die hoofstelsel en so ingerig wees dat in geval van oorstroming 'n pomp op enige waterdigte afdeling kan werk: Met die voorbehoud dat in enige skip van Klas IIA met 'n lengte van minder as 100 voet wat van 'n handpomp van die hefboomtipe vir elke waterdigte afdeling voorsien is ooreenkomstig die bepalings van paragraaf (1) van regulasie 26, die kleppe en krane in die hooflensleiding vir die beheer van die suigleidings nie van die skip se beskotdek gereël hoef te word indien hulle in dieselfde afdeling as 'n kragpomp is nie.

(2) In elke Hoofstuk II-skip moet elke bedieningstang vir lenssuigingskleppe of -krane so regstreeks moontlik gelei word en 'n indeksplaat hê by die posisie bo die beskotdek waarvandaan dit bedien word, wat die doel van die klep of kraan en die manier waarop dit oop- en toegemaak kan word, aandui. Elke sodanige stang wat deur vrag- of bunkerruime gevoer word, moet teen beskadiging beskerm word.

33. LENSSLYTKASTE EN -SUIGKORWE.

Lenssuigings in die masjinerieruim van elke skip moet gelei word van maklik toeganklike slytkaste wat, waar prakties uitvoerbaar, bo die vlak van die werkvloer van sodanige ruimte geplaas is. Die kaste moet reguit suigpype na die kimme hê en die deksels moet op so 'n wyse bevestig word dat hulle maklik oop- en toegemaak kan word. Die suigente in die skeepsruime en tonnelputte moet in suigkorwe, met perforasies met 'n deursnee van ongeveer $\frac{3}{8}$ duim, omslote wees, en die gesamentlike oppervlakte van sodanige perforasies mag nie minder as tweemaal dié van die end van die suigpyp wees nie. Suigkorwe moet so gebou wees dat hulle skoongemaak kan word sonder om enige las van die suigpyp te breek.

34. PYLKOKERS.

In elke Hoofstuk II-skip moet alle tenks wat 'n deel vorm van die bou van die skip en alle waterdigte afdelings, wat nie 'n deel van die masjinerieruim vorm nie, voorsien word van doeltreffende peilingsinrigtings wat, waar nodig, teen beskadiging beskerm moet word. Waar sodanige inrigtings uit pylkokers bestaan, moet 'n dik staalverdubbelingsplaat stewig onder elke pylkoker bevestig word sodat die peilingstong daarop kan staan. Alle sodanige pylkokers moet strek tot by posisies bokant die skip se beskotdek wat te alle tye maklik toeganklik moet wees. Pylkokers vir kimme, kofferdamme en dubbelbodemtenks, wat kimme, kofferdamme en tenks is wat in die masjinerieruim geleë is, moet so ver strek tensy die boonste ente van die pype onder gewone omstandighede toeganklik is en toegerus is met krane met parallelle proppe met permanentgevestigde handvatsels wat so gelaai is dat hulle die krane outomaties sluit sodra hulle losgelaat word. Pylkokers vir die kimme van geïsoleerde ruime moet geïsoleer wees en 'n deursnee hê van nie minder as $2\frac{1}{2}$ duim nie.

HOOFSTUK IV.—ELEKTRIESE UITRUSTING EN INSTALLASIES.

35. TOEPASSING VAN HOOFSTUK IV.

Hierdie hoofstuk is op elke skip van toepassing.

36. ALGEMEEN.

(1) In elke skip moet die elektriese uitrusting en installasies, behalwe die elektriese aandrywingsmiddels, as daar is, sodanig wees dat die elektriese bediende dienste wat noodsaaklik is vir die veiligheid van die skip en van persone aan boord onder noodtoestande in stand gehou kan word.

32. BILGE VALVES, COCKS, ETC.

(1) In every Chapter II ship, all distribution boxes, valves and cocks fitted in connection with the bilge pumping arrangements shall be in positions which are accessible at all times in ordinary circumstances and shall be so arranged that in the event of flooding one of the bilge pumps may operate on any watertight compartment in the ship. If in any such ship there is only one system of pipes common to all such pumps, the necessary valves or cocks for controlling the bilge suctions shall be capable of being operated from above the ship's bulkhead deck. If an emergency bilge pumping system is provided in addition to the main bilge pumping system, it shall be independent of the main system and shall be so arranged that a pump is capable of being operated under flooding conditions on any watertight compartment: Provided that in any ship of Class IIA of under 100 feet in length provided with a hand pump of the lever type for each watertight compartment in accordance with the provisions of paragraph (1) of regulation 26, the valves and cocks on the bilge main for controlling the bilge suctions need not be workable from above the ship's bulkhead deck if they are in the same compartment as a power pump.

(2) In every Chapter II ship, every operating rod for bilge suction valves or cocks shall be led as directly as possible and shall have an index plate at the position above the bulkhead deck from which it is operated showing the purpose served by the valve or cock and how it may be opened and closed. Every such rod passing through cargo or bunker spaces shall be protected against damage.

33. BILGE MUD BOXES AND STRUM BOXES.

Bilge suctions in the machinery space of every ship shall be led from readily accessible mud boxes placed wherever practicable above the level of the working floor of such space. The boxes shall have straight tailpipes to the bilges and covers secured in such a manner as will permit them to be readily opened and closed. The suction ends in hold spaces and tunnel wells shall be enclosed in strum boxes having perforations approximately $\frac{3}{8}$ inch in diameter, and the combined area of such perforations shall be not less than twice that of the end of the suction pipe. Strum boxes shall be so constructed that they can be cleared without breaking any joint of the suction pipe.

34. SOUNDING PIPES.

In every Chapter II ship, all tanks forming part of the structure of the ship and all watertight compartments, not being part of the machinery space, shall be provided with efficient sounding arrangements which shall be protected where necessary against damage. Where such arrangements consist of sounding pipes, a thick steel doubling plate shall be securely fixed below each sounding pipe for the sounding rod to strike upon. All such sounding pipes shall extend to positions above the ship's bulkhead deck which shall at all times be readily accessible. Sounding pipes for bilges, cofferdams and double bottom tanks, being bilges, coffer dams and tanks situated in the machinery space, shall so extend unless the upper ends of the pipes are accessible in ordinary circumstances and are furnished with cocks having parallel plugs with permanently secured handles so loaded that on being released they automatically close the cocks. Sounding pipes for the bilges of insulated holds shall be insulated and not less than $2\frac{1}{2}$ inches in diameter.

CHAPTER IV.—ELECTRICAL EQUIPMENT AND INSTALLATIONS.

35. APPLICATION OF CHAPTER IV.

This Chapter applies to every ship.

36. GENERAL.

(1) In every ship, the electrical equipment and installations, other than the electrical means of propulsion, if any, shall be such that the electrically operated services essential for the safety of the ship and of persons on board can be maintained under emergency conditions.

(2) Sonder benadeling van die bepalings van paragraaf (1) moet die elektriese uitrusting en installasies (met inbegrip van die elektriese aandrywingsmiddels) in elke skip sodanig wees dat die skip en alle persone aan boord teen gevare van elektrisiteit beskerm sal wees en in ooreenstemming sal wees met die toepaslike bepalings van die regulasies vir die „Electrical Equipment of Ships", gepubliseer deur die „Institution of Electrical Engineers of the United Kingdom", gedateer September, 1939, soos gewysig deur 'n aanhangsel gedateer November 1947, behalwe in soverre sodanige regulasies soos aldus gewysig, teenstrydig is met hierdie Deel.

37. HOOFOPWEKKINGSTOESTELLE: SKEPE VAN KLASSE I, II EN IIA.

Elke skip van Klasse I, II en IIA wat 'n skip is waarin elektriese krag die enigste krag is tot instandhouding van die hulpdienste wat noodsaaklik is vir die aandrywing en veiligheid van die skip, moet voorsien wees van minstens twee hoofopwekkingstoestelle waarvan die krag voldoende moet wees om bogenoemde dienste te bedien wanneer enigeen van die toestelle nie in gebruik is nie. Reëlings moet getref word wat sal verhoed dat sodanige toestelle onbruikbaar gemaak word indien die skip se masjinerieruim gedeeltelik sou volloop weens lekkasie van 'n beskadigde afdeling of andersins.

38. ELEKTRISITEITSNOODKRAGBRON: SKEPE VAN KLASSE I, II EN IIA.

(1) In elke skip van Klasse I, II en IIA moet daar in 'n posisie bo die beskotdek buitekant die masjienkaste 'n outonome elektrisiteitsnoodkragbron voorsien word wat in staat is om vir 'n tydperk van 36 uur gelyktydig te werk, of vir sodanige korter periode as wat die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is vir gebruik op internasionale reise nie) mag toelaat in die geval van enige skip wat gereeld op reise van kort duur gebruik word—

(*a*) die skip se noodlenspomp, indien dit elektries gewerk word;

(*b*) die skip se waterdigte deure, indien hulle elektries beweeg word;

(*c*) die skip se noodverligting by elke inskepingsplek op die dek en aan die buiteboorde, in alle deurgange, op trappe en by uitgange, by die masjinerieruim en in die beheerstasies waar radio-, hoofnavigasie- en sentrale brandopsporinguitrusting geleë is, en in die plek waar die noodontwikkelaar, as daar een is, geleë is;

(*d*) die skip se navigasieligte indien dit uitsluitlik met elektriese krag werk; en

(*e*) alle kommunikasietoerusting en -tekens wat in 'n noodgeval benodig mag word, indien hule elektries werk vanaf die skip se hoofopwekkingtoestel.

(2) Die elektrisiteitsnoodkragbron kan òf 'n opgaarbattery wees wat in staat is om aan paragraaf (1) te voldoen sonder dat dit weer gelaai moet word of dat daar 'n oormatige verlaging van die stoomspanning plaasvind, of 'n ontwikkelaar wat aangedryf word deur middel van 'n kompressie-ontstekingsenjin met 'n onafhanklike brandstofvoorraad en met doeltreffende aansitinrigtings. Die brandstof wat vir sodanige enjin verskaf word, moet 'n ontvlammingspunt van minstens 110° F. (43·3° C.) hê.

(3) Die elektrisiteitsnoodkragbron moet so ingerig wees dat dit doeltreffend sal funksioneer wanneer die skip 'n helling het van 22½° en wanneer die trim van die skip 10° afwyk van geyklastigheid.

(4) (*a*) Indien die skip se elektrisiteitsnoodkragbron 'n opgaarbattery is, moet die inrigtings sodanig wees dat die skip se noodverligtingstelsel outomaties in werking sal tree wanneer die hoofkragbron van die skip se hoofverligtingstelsel defek raak.

(*b*) Indien die elektrisiteitsnoodkragbron 'n ontwikkelaar is, moet 'n opgaarbattery voorsien word as 'n tydelike bron van elektriese krag, wat so ingerig is dat dit outo-

(2) Without prejudice to the provisions of paragraph (1), the electrical equipment and installations (including the electrical means of propulsion) in every ship shall be such that the ship and all persons on board are protected against electrical hazards and shall conform to the relevant provisions of the regulations for the Electrical Equipment of Ships issued by the Institution of Electrical Engineers of the United Kingdom and dated September, 1939, as amended by a supplement dated November, 1947, except in so far as such regulations as so amended are inconsistent with this Part.

37. MAIN GENERATING SETS: SHIPS OF CLASSES I, II AND IIA.

Every ship of Classes I, II and IIA, being a ship in which electrical power is the only power for maintaining the auxiliary services essential for the propulsion or safety of the ship, shall be provided with not less than two main generating sets the power of which shall be sufficient to operate the aforesaid services in the event of any one of the sets being out of service. Arrangements shall be made which will safeguard such sets from being rendered inoperative in the event of the partial flooding of the ship's machinery space through leakage from a damaged compartment or otherwise.

38. EMERGENCY SOURCE OF ELECTRICAL POWER: SHIPS OF CLASSES I, II AND IIA.

(1) In every ship of Classes I, II and IIA there shall be provided in a position above the bulkhead deck outside the machinery casings a self-contained emergency source of electrical power capable of operating simultaneously for a period of 36 hours, or for such shorter period as the Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may permit in the case of any ship regularly engaged on voyages of short duration—

(*a*) the ship's emergency bilge pump, if it is electrically operated;

(*b*) the ship's watertight doors, if they are electrically operated;

(*c*) the ship's emergency lights at every boat station on deck and overside, in all alleyways, stairways and exits, in the machinery space, in the control stations where radio, main navigating and central fire recording equipments are situated, and in the place where the emergency generator, if any, is situated;

(*d*) the ship's navigation lights, if operated solely by electric power; and

(*e*) all communication equipment and signals which may be required in an emergency, if they are electrically operated from the ship's main generating sets.

(2) The emergency source of electrical power may be either an accumulator battery capable of complying with paragraph (1) without being recharged or suffering an excessive voltage drop, or a generator driven by a compression ignition engine with an independent fuel supply and with efficient starting arrangements. The fuel provided for such engine shall have a flash point of not less than 110° F. (43·3° C.).

(3) The emergency source of electrical power shall be so arranged that it will operate efficiently when the ship is listed 22½° and when the trim of the ship is 10° from an even keel.

(4) (*a*) If the emergency source of electrical power is an accumulator battery, the arrangements shall be such that the ship's emergency lighting system will come into operation automatically in the event of the failure of the main source of power for the ship's main lighting system.

(*b*) If the emergency source of electrical power is a generator, an accumulator battery shall be provided as a temporary source of electrical power, so arranged as to

maties in werking sal tree wanneer die elektrisiteitshoof- of noodkragbron defek raak, en met 'n voldoende vermoë—

(i) om die skip se noodverligtingstelsel onafgebroke vir 'n halfuur te werk; en

(ii) terwyl sodanige verligtingstelsel in werking is, om die skip se waterdigte deure toe te maak indien hulle elektries beweeg word, maar nie noodwendig om al sodanige deure gelyktydig toe te maak nie.

(*c*) Middels moet verskaf word waarvolgens die outomatiese inrigtings waarna in hierdie paragraaf verwys word, getoets kan word.

39. STROOMVERDELINGSTELSELS.

(1) In elke skip moet elke skakelbord van die oop tipe so ingerig word dat dit van voor en van agter maklik toeganglik is sonder gevaar vir enige persoon wat in die uitvoering van sy pligte die skakelbord of sy verbindings ondersoek of herstel of die toestelle daarop werk. Die sye en agterkante van die skakelbord moet beskerm word deur 'n handreling, sifdraad, plaatgaar of ander ewe doeltreffende beskermingsmiddels en 'n nie-geleidende mat of traliewerk moet as 'n vloerbedekking voorsien word. Geen blootgestelde dele met 'n geaarde spanning van meer as 250 volt gelykstroom of 150 volt wisselstroom mag op 'n skakelbord of 'n reëlbord aangebring word nie.

(2) Terugleiding oor die romp mag nie in enige skip vir die krag-, warmte- en ligverspreidingstelsels daarvan gebruik word nie.

(3) Indien in enige skip twee of meer opwekkingstoestelle gelyktydig in werking mag wees vir die instandhouding van die hulpdienste wat noodsaaklik is vir die aandrywing of veiligheid van die skip, moet voorsiening gemaak word sodat die toestelle in parallel werk en middele moet voorsien word sodat in geval van 'n oorlaaiing of 'n gedeeltelike defek van die kragtoevoer, die dienste wat nie noodsaaklik vir die aandrywing en veiligheid van die skip is nie eerste afgesny sal word terwyl die dienste wat noodsaaklik is vir daardie doeleindes in die stroombaan behou word met sodanige van die ontwikkelaars wat in gebruik mag bly.

(4) In elke skip moet enige suurinrigtings wat elektries beweeg word, gevoed word deur twee stelle voedingskabels vanaf die skip se hoofskakelbord. Sulke stelle voedingskabels moet oor hul hele lengte sover as moontlik van mekaar gehou word. Elke voedingskabel moet in staat wees om al die motore wat gelyktydig in verband met die stuurinrigting mag werk, te voed. Sulke kabels en motore moet deur middel van sekerings, stoomverbrekers of ander soortgelyke toestelle teen kortsluitings beskerm word, maar moet nie so beskerm word teen kleiner ladings nie.

(5) Indien in enige skip die kragtoevoer vir 'n outomatiese sproeierstelsel, wat nie minder as twee kragbronne vir seewaterpompe, lugkompresser en outomatiese alarms vereis nie, elektries is, moet sodanige kragtoevoer deur die noodskakelbord opgeneem word deur 'n voedingskanaal wat uitsluitlik vir daardie doel gehou word. Daar mag geen skakelaar in die stroombaan wees behalwe dié by die skakelbord nie. Die skakelaar moet duidelik en blywend gemerk word om sy doel aan te dui en dat dit normaalweg gesluit gehou moet word.

(6) Die hoof en noodvoedingskabels in elke skip moet vertikaal en horisontaal sover as moontlik van mekaar gehou word.

40. ALGEMENE ELEKTRISITEITS-VOORSORGMAATREËLS.

(1) In elke skip moet alle blootgestelde metaaldele van elektrisiteits-uitrusting wat nie bedoel is om 'n stroomspanning groter as dié van die gronddraad te hê nie, maar wat so 'n stroomspanning kan hê as gevolg van 'n fout, geaard word, en al sulke uitrusting moet so gebou en aangebring word dat daar geen gevaar van besering sal wees vir iemand wat dit behoorlik hanteer nie. Die metaalrame van alle draagbare lampe en gereedskap en ander draagbare apparate wat in die skip voorsien word en van 'n elektrisiteits-toevoer van 'n stroomspanning van 100 volts of meer werk, moet deur middel van 'n geskikte geleier in die toevoerkabel geaard word.

come into operation automatically in the event of a failure of the main or emergency source of electrical power, and of sufficient capacity—

(i) to operate the ship's emergency lighting system continuously for half an hour; and

(ii) while such lighting system is in operation, to close the ship's watertight doors if they are electrically operated, but not necessarily to close all of such doors simultaneously.

(*c*) Means shall be provided by which the automatic arrangements referred to in this paragraph can be tested.

39. DISTRIBUTION SYSTEMS.

(1) In every ship, every open-type switchboard shall be arranged so as to allow ready access to the back and front thereof without danger to any person who in the course of his duties may inspect or repair the switchboard or its connections or operate the devices thereon. The sides and backs of the switchboard shall be guarded by a handrail, wire netting, expanded metal or other equally efficient means of protection and a non-conducting mat or grating shall be provided as a floor covering. No exposed parts which may have a voltage to earth exceeding 250 volts direct current or 150 volts alternating current shall be installed on the face of any switchboard or control panel.

(2) Hull return shall not be used in any ship for the power, heat and light distribution systems thereof.

(3) If, in any ship, two or more generating sets may be in operation at the same time for maintaining the auxiliary services essential for the propulsion or safety of the ship, provision shall be made for the sets to operate in parallel and means shall be provided so that in the event of overload or a partial failure of the power supply the services not essential to the propulsion and safety of the ship will be cut out first, the services essential for those purposes being retained in circuit with such of the generators as may remain in service.

(4) In every ship any electrically operated steering gear shall be served by two sets of feeder cables from the ship's main switchboard. Such sets of feeder cables shall be separated from each other throughout their length as widely as practicable Each feeder cable shall have a capacity adequate for serving all motors which may operate simultaneously in connection with steering gear. Such cables and motors shall be protected by fuses, circuit breakers or other similar devices against short circuits, but shall not be so protected against lesser loads.

(5) If in any ship the power supply for an automatic sprinkler system, requiring not less than two sources of power supply for sea-water pumps, air compressors and automatic alarms, is electrical, such power supply shall be taken through the emergency switchboard by a feeder reserved solely for that purpose. There shall be no switch in the circuit other than that at the switchboard. The switch shall be clearly and permanently labelled to indicate its purpose and to indicate that it shall normally be kept closed.

(6) In every ship the main emergency feeder cables shall be separated vertically and horizontally as widely as practicable.

40. GENERAL ELECTRICAL PRECAUTIONS.

(1) In every ship, all exposed metal parts of electrical equipment which are not intended to have a voltage above that of earth but which may have such a voltage under fault conditions shall be earthed, and all such equipment shall be so constructed and installed that there will be no danger of injury to a person handling it in a proper manner. The metal frames of all portable lamps and tools and other portable apparatus provided in the ship and operating on an electric supply of a voltage of 100 volts or more shall be earthed through a conductor in the supply cable.

(2) Elke elektriese kabel in die skip moet op elke plek waar 'n elektriese fout 'n brand mag veroorsaak, bedek wees met metaalomhulsels, -beskermingsdrade of ander ewe doeltreffende beskermingsmiddels. Alle metaalomhulsels en -beskermingsdrade van elektriese kabels in elke skip moet elektries deurlopend en geaard wees.

(3) Die drade in elke skip moet op so 'n wyse bevestig word dat hulle nie as gevolg van wrywing of 'n ander oorsaak beskadig sal word nie.

(4) In elke skip moet die lasse in alle elektriese geleiers slegs in verdeelkaste of uitlaatkaste gemaak word, behalwe in die geval van laagspanning-verbindingstroombane. Sulke lasse of uitlaatkaste moet van so 'n aard wees dat die verspreiding van brand daarvandaan voorkom sal word.

(5) Die montering van alle ligte in elke skip moet van so 'n aard wees dat temperatuurstygings wat vir die elektriese bedrading daarvan gevaarlik sal wees of wat aanleiding kan gee tot 'n gevaar van brand in die omliggende materiaal, verhoed sal word.

(6) Elke elektriese ruimverwarmer wat 'n deel is van die toerusting van die skip moet op 'n plek bevestig word en moet van so 'n aard wees dat dit die gevaar van brand tot 'n minimum beperk. Geen sodanige verwarmer mag gebou word met 'n element wat so blootgestel is dat klere, gordyne, of ander soortgelyke materiaal deur die hitte van die element gskroei of aan die brand gesteek kan word nie.

(7) In elke skip moet elke afsonderlike elektriese stroombaan, behalwe 'n stroombaan wat die skip se stuurinrigting bedien, teen oorlaaiing beskerm word. Die stroomdravermoë van die stroombaan wat dit beskerm en die vermoësyfer of die instelsyfer van die toestel moet duidelik en blywend op of naby elke toestel vir die beskerming teen oorlaaiing aangedui word.

(8) Alle opgaarbatterye in elke skip moet onderdak gebring word in kaste of afdelings wat só gebou is dat die batterye teen skade beskerm word en wat so geventileer is dat die ophoping van ontplofbare gas gering is. Elektriese toestelle wat moontlik elektriese boë kan vorm, moet nie in enige afdeling wat gebruik word om opgaarbatterye te huisves, geïnstalleer word nie, tensy sodanige toestelle vlamproef is.

41. Spaarparte en gereedskap.

Elke skip van Klasse I, II en IIA moet voorsien word van 'n toereikende hoeveelheid plaasvervangende parte vir daardie parte van die skip se elektriese uitrusting en installasies waarvan, met inagneming van die voorgenome diens van die skip, die vervanging in die geval van 'n defek terwyl die skip op see is noodsaaklik sou wees vir die veiligheid van die skip en die persone aan boord, tesame met sodanige gereedskap as wat nodig is vir die aanbring van daardie plaasvervangende parte.

HOOFSTUK V.—BESKERMING TEEN BRAND: SKEPE VAN KLASSE I, II EN IIA.

42. Toepassing van Hoostuk V.

Hierdie hoofstuk is van toepassing op skepe van Klasse I, II en IIA, en 'n „Hoofstuk V-skip" beteken 'n skip waarop hierdie hoofstuk aldus van toepassing is.

(Opmerking.—Die aandag word gevestig op regulasie 91 ingevolge waarvan enige skip van Klas II of IIA van die vereistes van hierdie hoofstuk vrygestel kan word.)

43. Vertoon van planne.

In elke Hoofstuk V-skip moet daar vir die leiding van die gesagvoerder van die skip planne voorsien word waarop die volgende aangedui word: Die afdelings van die skip wat op elke dek deur afdelings van die A-klas omsluit word en die afdelings van die skip wat deur afdelings van die B-klas omsluit word, tesame met besonderhede van die brandalarm en -opsporingstelsels, sproeierinstallasies en brandblustoestelle wat in die skip voorsien word, die middels van toegang tot en uitgang uit die verskillende afdelings en dekke van die skip, en van die skip se ventilasiestelsel, met inbegrip van veral die plekke waar die dempers en identifikasienommers van die waaiers,

(2) Every electrical cable in the ship shall, at every position at which an electrical fault may cause a fire, be covered by metal sheaths, metal armour or other equally effective means of protection. All metal sheaths and metal armour of electrical cable in every ship shall be electrically continuous and shall be earthed.

(3) Wiring in every ship shall be supported in such a manner as to avoid chaffing and other injury.

(4) In every ship the joints in all electrical conductors shall be made only in junction or outlet boxes except in the case of low voltage communication circuits. All such junctions or outlet boxes shall be so constructed as to prevent the spread of fire therefrom.

(5) All lighting fittings in every ship shall be so arranged as to prevent rises in temperature which would be injurious to the electrical wiring thereof or which would result in a risk of fire in the surrounding material.

(6) Every electric space-heater forming part of the equipment of the ship shall be fixed in position and shall be so constructed as to reduce the risk of fire to a minimum. No such heater shall be constructed with an element so exposed that clothing, curtains, or other similar material can be scorched or set on fire by heat from the element.

(7) In every ship each separate electrical circuit, other than a circuit which operates the ship's steering gear, shall be protected against overload. There shall be clearly and permanently indicated on or near each overload protective device the current carrying capacity of the circuit which it protects and the rating or setting of the device.

(8) In every ship all accumulator batteries shall be housed in boxes or compartments which are so constructed as to protect the batteries from damage and are so ventilated as to minimise the accumulation of explosive gas. Electrical devices which are likely to arc shall not be installed in any compartment used to house accumulator batteries unless such devices are flameproof.

41. Spare Parts and Tools.

Every ship of Classes I, II and IIA shall be provided with an adequate quantity of replacements for those parts of the ship's electrical equipment and installation which, having regard to the intended service of the ship, it would be essential for the safety of the ship and of persons on board to replace in the event of failure while the ship is at sea, together with such tools as are necessary for the fitting of those replacements.

CHAPTER V.—FIRE PROTECTION: SHIPS OF CLASSES I, II AND IIA.

42. Application of Chapter V.

This Chapter applies to ships of Classes I, II and IIA, and a "Chapter V ship" means a ship to which this Chapter so applies.

(Note.—Attention is invited to regulation 91 in terms of which any ship of Class II or IIA may be exempted from the requirements of this Chapter.)

43. Exhibition of Plans.

In every Chapter V ship, there shall be provided for the guidance of the master of the ship plans showing for each deck the sections of the ship enclosed by "A" Class divisions and the sections of the ship enclosed by "B" Class divisions, together with particulars of the fire alarm and fire detecting systems, sprinkler installations and fire extinguishing appliances provided in the ship, the means of entry into and exit from the various compartments and decks in the ship, and of the ship's ventilating system, including in particular the positions of the dampers thereof and the identification number of the

wat elke afdeling van die skip dien, geleë is. Sodanige planne moet deur glas of soortgelyke materiaal beskerm word en moet blywend aangebring word op 'n beskotdek, tafel of lessenaar naby die plek waarvandaan die skip normaalweg bestuur word.

44. Afdelings van die A- en B-klas.

(1) Elke afdeling van die A-klas wat deur hierdie Deel vereis word, moet van staal of 'n soortgelyke materiaal gebou wees, in albei gevalle so versterk dat hulle in staat sal wees om dwarsdeur 'n standaardvuurtoets van 60 minute die deurgang van rook en vlamme sal verhoed. Die afdeling moet met inagneming van die aard van die aangrensende ruimtes, voldoende geïsoleer wees, en indien die afdeling tussen ruimtes is waarvan enigeen aangrensende brandbare materiaal bevat, moet hulle in so 'n mate geïsoleer wees dat wanneer die een of die ander kant van die afdeling vir 'n tydperk van 60 minute aan 'n standaardvuurtoets onderwerp word, die gemiddelde temperatuur aan die kant van die afdeling wat nie blootgestel is nie, op geen tydstip gedurende die toets met meer as 250° F. (139° C.) bo die aanvanklike temperatuur aan daardie kant sal styg nie en dat die temperatuur op geen plek daarop met meer as 325° F. (180° C.) bo die aanvanklike temperatuur sal styg nie.

(2) Elke afdeling van die B-klas wat deur hierdie Deel vereis word, moet in staat wees om dwarsdeur 'n standaardvuurtoets van 30 minute die deurgang van rook en vlamme te verhoed. Met inagneming van die aard van die aangrensende ruimtes, moet elk sodanige afdeling voldoende geïsoleer wees. Die afdeling moet so gebou wees dat, wanneer die een of die ander kant daarvan blootgestel word aan 'n standaardvuurtoets wat 30 minute duur, die gemiddelde temperatuur aan die kant van die afdeling wat nie blootgestel is nie, nie met meer as 250° F. (139° C.) bo die aanvanklike temperatuur aan daardie kant sal styg nie, en dat die temperatuur op geen plek daarop met meer as 325° F. (180° C.) bo die aanvanklike temperatuur sal styg nie. Met die voorbehoud dat enige afdeling wat heeltemal van vuurvaste materiaal gebou is, vereis sal word om slegs gedurende die eerste 15 minute van 'n standaardvuurtoets aan die voorafgaande vereiste ten opsigte van temperatuursvermeerdering te voldoen.

(Opmerking.—Die aandag word gevestig op regulasie 92 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

45. Bou van die skip.

(1) Die romp, bobou, boubeskotte, dekke en dekhuise van elke Hoofstuk V-skip moet van staal wees.

(2) Die romp, bobou en dekhuise van elke Hoofstuk V-skip moet deur middel van beskotte bestaande uit afdelings van die A-klas in hoof-vertikale sones ingedeel word. Die gemiddelde lengte van elke sone bo die beskotdek mag nie 131 voet oorskrei nie. Enige trappe in sulke beskotte moet uit afdelings van die A-klas bestaan.

(3) Enige gedeeltes van afdelings van die A-klas wat bo die skip se beskotdek strek moet, waar moontlik, in 'n lyn lê met waterdigte indelingsbeskotte wat onmiddellik onderkant die beskotdek geleë is en moet van dek tot dek en tot by die skip se huidbeplating en, in die geval van 'n dekhuis, tot by die buitenste beplating daarvan, strek.

(Opmerking.—Die aandag word gevestig op regulasie 93 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

46. Openings in afdelings van die A-klas.

(1) Indien in enige Hoofstuk V-skip enige afdeling van die A-klas deurboor word vir die lê van elektriese kabels, pype, kokers, draagbalke of dwarsbalke of vir ander doeleindes, moet die inrigtings sodanig wees dat die doeltreffendheid van die afdeling om brand te weerstaan nie daardeur verhinder word nie.

(2) Dempers moet aangebring word in enige kokers wat deur 'n afdeling van die A-klas loop en moet voorsien wees van 'n geskikte plaaslike beheermeganisme wat van albei kante van die afdeling bedien kan word. Die posisies waarvandaan sodanige beheermeganisme bedien kan word, moet geredelik toeganklik wees en moet blywend in rooi gemerk word. Daar moet aanwysers aangebring word wat sal aandui of die dempters oop of toe is.

ventilation fans serving each section of the ship. Such plans shall be protected by glass or similar material and shall be permanently affixed to a bulkhead, table or desk near the place from which the ship is normally navigated.

44. "A" and "B" Class Divisions.

(1) Every "A" Class division required by this Part shall be constructed of steel or similar material, in either case stiffened so as to be capable of preventing the passage of smoke and flame throughout a standard fire test of 60 minutes duration. The division shall have an adequate insulating value having regard to the nature of the spaces adjacent thereto, and if the division is between spaces either of which contains adjacent combustible material it shall be so insulated that if either face of the division is exposed to a standard fire test of 60 minutes duration the average temperature on the unexposed face of the division will not increase at any time during the test by more than 250° F. (139° C.) above the initial temperature on that face nor shall the temperature at any one point thereon increase by more than 325° F. (180° C.) above the initial temperature.

(2) Every "B" Class division required by this Part shall be capable of preventing the passage of smoke and flame throughout a standard fire test of 30 minutes duration. Every such division shall have an adequate insulating value having regard to the nature of the spaces adjacent thereto. The division shall be so constructed that if either face thereof is exposed to a standard fire test of 30 minutes duration the average temperature on the unexposed face of the division will not increase by more than 250° F. (139° C.) above the initial temperature on that face, nor shall the temperature at any one point thereon increase by more than 325° F. (180° C.) above the initial temperature. Provided that any division which is constructed wholly of incombustible material shall be required to comply with the foregoing requirement relating to increase of temperature only during the first 15 minutes of a standard fire test.

(Note.—Attention is invited to regulation 92 in terms of which a ship may be exempted from the requirements of this regulation.)

45. Structure of the Ship.

(1) The hull, superstructure, structural bulkheads, decks and deckhouses of every Chapter V ship shall be constructed of steel.

(2) The hull, superstructure and deckhouse of every Chapter V ship shall be subdivided by bulkheads consisting of "A" Class divisions into main vertical zones. The mean length of each zone, above the bulkhead deck, shall not exceed 131 feet. Any steps in such bulkheads shall consist of "A" Class divisions.

(3) Any portions of "A" Class divisions which extend above the ship's bulkhead deck shall, whenever possible, be in line with watertight subdivision bulkheads situated immediately below the bulkhead deck and shall extend from deck to deck and to the ship's shell plating and, in the case of a deckhouse, to the external plating thereof.

(Note.—Attention is invited to regulation 93, in terms of which a ship may be exempted from the requirements of this regulation.)

46. Openings in "A" Class Divisions.

(1) If, in any Chapter V ship, any "A" Class division is pierced for the passage of electric cables, pipes, trunkways, girders or beams, or for other purposes, the arrangements shall be such that the effectiveness of the division in resisting fire is not thereby impaired.

(2) Dampers shall be fitted in any trunkways which pass through an "A" Class division and shall be provided with a suitable means of local control capable of being operated from both sides of the division. The positions from which such means of control may be operated shall be readily accessible and shall be permanently marked in red. Indicators shall be provided to show whether the dampers are open or shut.

(3) Enige opening in 'n afdeling van die A-klas moet voorsien word van sluitingsmiddels wat blywend aan die afdeling bevestig is. Die sluitingsmiddels moet so doeltreffend vuurvas wees as die afdeling.

(4) Enige deur in 'n afdeling van die A-klas moet so gebou wees dat dit vanaf albei kante van die afdeling deur een persoon oop- en toegemaak kan word. Die deur en die middels om dit toe te hou moet so doeltreffend vuurvas wees as die afdeling. Met die voorbehoud dat 'n waterdigte deur nie geïsoleer hoef te word nie. Indien die afdeling ooreenkomstig paragraaf (2) van regulasie 45 gebou is en enige deur daarin nie 'n waterdigte deur is nie, moet sodanige deur van 'n tipe wees wat outomaties toegaan en voorsien wees van 'n toestel deur middel waarvan dit maklik in die oop posisie vrygestel kan word.

47. SKEIDING VAN VERBLYFRUIMTES VAN ANDER OMSLOTE RUIMTES.

In elke Hoofstuk V-skip moet die beskotte en dekke wat verblyfruimtes van ander omslote ruimtes skei uit afdelings van die A-klas bestaan.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

48. BESKERMING VAN TRAPPE.

(1) In elke Hoofstuk V-skip moet elke trap in 'n verblyfruimte of diensruimte staalrame hê en in 'n omsluiting wat van afdelings van die A-klas gebou is, geleë wees: Met die voorbehoud dat—

(*a*) 'n trap wat slegs twee dekke dien, nie deur afdelings van die A-klas by meer as een dek omsluit hoef te word nie;

(*b*) 'n trap in 'n openbare kamer nie vereis word om so omsluit te wees indien dit geheel en al binne die kamer lê nie.

(2) Elke opening in 'n beskot wat 'n deel vorm van 'n trapomsluiting moet voorsien wees van 'n sluitingsmiddel wat blywend daaran bevestig moet wees. Die sluitingsmiddel moet so doeltreffend vuurvas wees as die beskot en moet van die self-sluitende tipe wees tensy dit 'n waterdigte deur is.

(3) Elke trapomsluiting in die skip moet regstreeks met die aangrensende gange verbind wees en van 'n voldoende oppervlakte wees om samedromming te voorkom, met inagneming van die getal persone wat waarskynlik van die trap gebruik sal maak in 'n noodgeval. Elk sodanige omsluitng moet so min verblyfruimte of diensruimte bevat as wat prakties moontlik is onder die omstandighede.

(OPMERKING.—Die aandag word gevestig op regulasies 91 en 94 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

49. BESKERMING VAN HYSBAKKE EN VERTIKALE KOKERS VIR LIG EN LUG.

(1) In elke Hoofstuk V-skip moet elke hysbakkoker en elke lig-en-lug en soortgelyke koker in 'n verblyfruimte of diensruimte van afdelings van die A-klas gebou wees: Met die voorbehoud dat daar nie vereis word dat 'n hysbakkoker wat binne 'n trapomsluiting geleë is, geïsoleer moet wees nie. Elke deur in sodanige koper moet van staal of ander vuurvaste materiaal gebou word en moet so doeltreffend vuurvas wees as die koker.

(2) Elke hysbakkoker in 'n Hoofstuk V-skip moet op so 'n wyse aangebring word dat dit die deurgang van rook en vlamme van die een tussendek na die ander verhoed, en moet van sluitingsmiddels voorsien wees wat dit moontlik sal maak om die trek van lug en die deurgang van rook te beheer.

(3) Indien in 'n Hoofstuk V-skip 'n lig-en-lug of soortgelyke koker met meer as een tussendekruimte verbind is en rook en vlamme vanaf die een tussendek na 'n ander kan versprei, moet rookkleppe aangebring word sodat elke sodanige ruimte in die geval van brand geïsoleer kan word.

(3) Any opening in an "A" Class division shall be provided with means of closure permanently attached to the division. The means of closure shall be as effective as the division in resisting fire.

(4) Any door in an "A" Class division shall be so constructed that it can be opened and closed by one person from either side of the division. The door and the means of keeping it closed shall be as effective as the division in resisting fire. Provided that a watertight door shall not be required to be insulated. If the division is constructed in compliance with paragraph (2) of regulation 45 and any door therein is not a watertight door, such door shall be self-closing and shall be provided with a device by which it may readily be released from the open position.

47. SEPARATION OF ACCOMMODATION SPACES FROM OTHER ENCLOSED SPACES.

In every Chapter V ship, the bulkheads and decks separating accommodation spaces from other enclosed spaces shall consist of "A" Class divisions.

(NOTE.—Attention is invited to regulation 91, in terms of which a ship may be exempted from the requirements of this regulation.)

48. PROTECTION OF STAIRWAYS.

In every Chapter V ship, every stairway within an accommodation space or service space shall be of steel frame construction and shall lie within an enclosure constructed of "A" Class divisions: Provided that—

(*a*) a stairway serving only two decks shall not be required to be enclosed by "A" Class divisions at more than one deck;

(*b*) a stairway in a public room shall not be required to be so enclosed if it lies wholly within the room.

(2) Every opening in a bulkhead forming part of a stairway enclosure shall be provided with a means of closure which shall be permanently attached thereto. The means of closure shall be as effective as the bulkhead in resisting fire, and shall be self-closing unless it is a watertight door.

(3) Every stairway enclosure in the ship shall communicate directly with the corridors adjacent thereto and shall have an area sufficient to prevent congestion, having regard to the number of persons likely to use the stairway in an emergency. Every such enclosure shall contain as little accommodation space or service space as is practicable in the circumstances.

(NOTE.—Attention is invited to regulation 91 and 94 in terms of which a ship may be exempted from the requirements of this regulation.)

49. PROTECTION OF LIFTS AND VERTICAL TRUNKS FOR LIGHT AND AIR.

(1) In every Chapter V ship, every lift trunk, and every light-and-air and similar trunk in an accommodation space or service space, shall be constructed of "A" Class divisions: Provided that a lift trunk within a stairway enclosure shall not be required to be insulated. Every door in such a trunk shall be constructed of steel or other incombustible material and shall be as effective as the trunk in resisting fire.

(2) Every lift trunk in a Chapter V ship shall be so fitted as to prevent the passage of smoke and flame from one between decks to another and shall be provided with means of closure which will enable draught and smoke to be controlled.

(3) If in a Chapter V ship, a light-and-air or similar trunk communicates with more than one between-deck space and smoke and flame may be conducted from one between decks to another, smoke shutters shall be fitted so as to enable each such space to be isolated in the event of fire.

(4) Elke ander koker in 'n Hoofstuk V-skip moet so gebou wees dat dit die verspreiding van brand vanaf die een tussendek of afdeling na 'n ander sal verhoed.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

50. BESKERMING VAN BEHEERPOSTE.

(1) Elke beheerpos in elke Hoofstuk V-skip moet deur beskotte en dekke bestaande uit afdelings van die A-klas van die res van die skip geskei word.

(2) Die radiotelegraafkamer in 'n Hoofstuk V-skip mag nie direk bo enige trap geleë wees nie.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

51. BESKERMING VAN VOORRAADKAMERS, ENS.

(1) In elke Hoofstuk V-skip moet die grensbeskotte wat 'n kombuis, bagasiekamer, poskamer, voorraadkamer, verfkamer, lampkamer of ander soortgelyke ruimte van enige ander ruimte skei, uit afdelings van die A-klas bestaan.

(2) Ruimtes wat bedoel is vir die opberging van hoogs ontvlambare voorrade moet so gebou en geleë wees dat brandgevaar vir persone aan boord tot 'n minimum beperk sal wees.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

52. DEKOMHULLING.

In elke Hoofstuk V-skip moet enige blywende dekomhulling binne in 'n verblyfruimte, diensruimte, beheerpos, trap of gang, van so 'n aard wees dat dit nie geredelik sal ontvlam nie.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

53. VENTILASIESTELSELS.

(1) Die inlaatopenings van elke lugtoevoerstelsel en die uitlaatopenings van elke lugafvoerstelsel in elke Hoofstuk V-skip moet voorsien word van geredelik toeganklike middels deur middel waarvan hulle in die geval van brand toegemaak kan word. Waar dit prakties moontlik is, moet die lugkokerstelsel wat vanaf elke ventilasiewaaier lei, binne een hoofvertikale sone wees.

(2) Elke Hoofstuk V-skip moet toegerus wees met twee hoofbeheerinrigtings so ver as moontlik van mekaar geleë, waarvan enigeen in staat is om al die waaiers in die meganiese ventilasiestelsels van die skip, met uitsondering van die ventilasiestelsels in die masjinerieruim, tot stilstand te bring. Elke meganiese ventilasiestelsel wat die masjinerieruim bedien moet twee hoofbeheerinrigtings hê, waarvan een in staat moet wees om van buite sodanige plek bedien te word. Enige uitlaatkokers van kombuisstowe in die skip moet van afdelings van die A-klas gebou wees wat geïsoleer moet word wanneer die kokers deur verblyfruimtes of diensruimtes loop.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

54. DIVERSE BESONDERHEDE VAN BESKERMING TEEN BRAND.

(1) Elke omslote lugruimte agter 'n plafon, paneel of bekleding in die verblyfruimtes of diensruimtes van elke Hoofstuk V-skip moet deur middel van nousluitende trekwerende middels wat in die voorste en agterste gedeelte nie meer as 45 voet van mekaar geleë is nie, onderverdeel word, en moet op elke dek gesluit wees.

(2) Elke plafon, paneel en bekleding waarna in paragraaf (1) verwys is, moet so gebou wees dat dit vir 'n brandrondediens moontlik sal wees om enige rook wat in 'n verstoke of ontoeganklike ruimte ontstaan, op te spoor sonder om die doeltreffendheid van die brandbeskermning van die skip te verminder.

(4) Every other trunk in a Chapter V ship shall be so constructed as not to afford a passage for fire from one between decks or compartment to another.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

50. PROTECTION OF CONTROL STATIONS.

(1) Every control station in every Chapter V ship shall be separated from the rest of the ship by bulkheads and decks consisting of "A" Class divisions.

(2) The radiotelegraph room in a Chapter V ship shall not be situated directly above any stairway.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

51. PROTECTION OF STORE ROOMS, ETC.

(1) In every Chapter V ship, the boundary bulkheads separating a galley, baggage room, mail room, store room, paint room, lamp room, or any similar space from any other space shall consist of "A" Class divisions.

(2) Spaces appropriated for the storage of highly inflammable stores shall be so constructed and situated as to minimise the danger to persons on board in the event of fire.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

52. DECK SHEATHING.

In every Chapter V ship, any permanent deck sheathing within an accommodation space, service space, control station, stairway or corridor, shall be such as will not readily ignite.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

53. VENTILATION SYSTEMS.

(1) The inlets of every air supply system and the outlets of every air exhaust system in every Chapter V ship, shall have readily accessible means by which they can be closed in the event of fire. Wherever practicable the system of ducts leading from each ventilating fan shall be within one main vertical zone.

(2) Every Chapter V ship shall be equipped with two master controls, situated as far apart as is practicable, either of which shall be capable of stopping all the fans in the power ventilation systems of the ship, other than the ventilation systems in the machinery space. Every power ventilation system serving the machinery space shall have two master controls, one of which shall be capable of being operated from outside such space. Any exhaust ducts from galley ranges in the ship shall be constructed of "A" Class divisions which shall be insulated where the ducts pass through accommodation spaces or service spaces.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

54. MISCELLANEOUS ITEMS OF FIRE PROTECTION.

(1) Every air space enclosed behind a ceiling, panel or lining in the accommodation spaces or service spaces of every Chapter V ship, shall be divided by close fitting draught-stops spaced not more than 45 feet apart in the fore and aft direction, and shall be closed at each deck.

(2) Every ceiling, panel and lining referred to in paragraph (1) shall be so constructed as to enable a fire patrol to detect any smoke originating in a concealed or inaccessible space, without impairing the efficiency of the fire protection of the ship.

(3) In 'n Hoofstuk V-skip moet die verstoke oppervlaktes van elke beskot, bekleding, pancelwerk, trap, houtstyle en ander struktuur in verblyfruimtes en diensruimtes van so 'n aard wees dat hulle oppervlaktes met 'n lae vlamverspreiding sal wees volgens die betekenis van Wysiging No. 2 gedateer Julie 1945, tot die „United Kingdom Standard Definitions for Fire Resistance, Incombustibility and Non-Inflammability of Building Materials and Structures (B.S. 476: 1932)".

(4) In 'n Hoofstuk V-skip mag verf, vernis en soortgelyke preparate nie aangewend word indien hulle 'n nitro-cellulosebasis bevat nie, en stowwe wat nitrocellulose bevat mag nie aangebring word nie.

(5) In 'n Hoofstuk V-skip mag buiteboordse spuigate, sanitêre en ander afvoerpype nie van lood gemaak word nie indien hulle naby die waterlyn geleë is of op so 'n plek dat die smelt van die lood as gevolg van brand die gevaar van oorstroming kan meebring.

(6) In 'n Hoofstuk V-skip moet die gebruik van hout vir die konstruksie en uitrusting van skeepskombuise, bakkerye en hoofaanregkamers, so ver as wat dit prakties moontlik is, beperk word.

(7) Elke venster en patryspoort in die verblyfruimtes en diensruimtes van 'n Hoofstuk V-skip moet metaalrame hê. Die glas daarin moet deur middel van 'n metaalring of -voeglat bevestig word. Indien die venster of patryspoort in 'n posisie is waar die smelting van die raam, ring of voeglat, oorstroming kan veroorsaak, moet die raam, ring of voeglat, wat die geval ook al is, van 'n metaal wees wat nie geneig sal wees om te smelt in die beval van 'n brand nie. Elke venster en patryspoort in die skip wat op 'n gang of trappe uitloop moet net so bestand teen brand wees as die beskot waarin dit aangebring word.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

55. VOORSIENING VIR KINEMATOGRAFIESE VERTONINGS.

Indien enige ontvlambare film in 'n Hoofstuk V-skip vervoer word vir vertoning aan boord die skip, moet die skip en die kinematografiese uitrusting wat daarin voorsien word, aan die vereistes uiteengesit in die Vierde Bylae voldoen.

56. BRANDBESKERMINGSMETODES.

Die verblyfruimtes en diensruimtes in elke Hoofstuk V-skip moet ooreenkomstig een van die volgende brandbeskermingsmetodes gebou word en moet voldoen aan sodanige van die volgende vereistes van hierdie Hoofstuk wat volgens aanduiding van toepassing is op skepe waarin daardie metode aangewend is:—

Metode I.—Die bou in die verblyfruimtes en diensruimtes van 'n stelsel van inwendige beskotte wat bestaan uit afdelings van die B-klas, tesame met 'n outomatiese brandalarm- en brandopsporingstelsel in hierdie ruimtes.

Metode II.—Die installering van 'n outomatiese sproeier-, brandopsporing- en brandalarmstelsel in die verblyfruimtes en die diensruimtes.

Metode III.—Die indeling van die verblyfruimtes en diensruimtes deur afdelings van die A- en B-klas, tesame met die installering van 'n outomatiese brandalarm- en brandopsporingstelsel in alle verblyfruimtes en diensruimtes en 'n beperking van die voorsiening van brandbare materiaal in hierdie ruimtes.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge warvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

57. BESKOTTE BINNE DIE HOOF-VERTIKALE SONES. (METODES I EN III.)

(1) *Metode I.*

(*a*) Elke beskot in die verblyfruimtes of diensruimtes van 'n skip waarin Metode I vir beskerming teen brand aangewend is, wat nie 'n beskot is wat deur hierdie Deel vereis word om uit afdelings van die A-klas te bestaan nie, moet uit afdelings van die B-klas bestaan. Die

(3) In a Chapter V ship the concealed surfaces of every bulkhead, lining, panelling, stairway, wood grounds and other structure in accommodation spaces and service spaces shall be such that they will be surfaces of low flame spread within the meaning of Amendment No. 2, dated July, 1945, to the United Kingdom Standard Definitions for Fire-resistance, Incombustibility and Non-inflammability of Building Materials and Structures (B.S. 476: 1932).

(4) In a Chapter V ship, paints, varnishes or similar preparations shall not be applied if they contain a nitrocellulose base, and fabrics containing nitro-cellulose shall not be fitted.

(5) In a Chapter V ship, overboard scuppers, sanitary discharges or other outlets shall not be made of lead if they are close to the water line or in such a position that the fusing of the lead in the event of fire would give rise to a danger of flooding.

(6) In a Chapter V ship, the use of wood for the construction and equipment of galleys, bakeries and main pantries, shall be restricted so far as is practicable.

(7) Every window and side scuttle in the accommodation spaces and service spaces of a Chapter V ship shall be constructed with metal frames. The glass therein shall be retained by a metal ring or bead. If the window or side scuttle is in a position in which the fusion of the frame, ring or bead, may give rise to a danger of flooding, the frame, ring or bead, as the case may be, shall consist of metal which is not likely to fuse in the event of fire. Every window and side scuttle in the ship opening on to a corridor or stairway shall be as effective in resisting fire as the bulkhead in which it is fitted.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

55. PROVISION FOR CINEMATOGRAPH EXHIBITIONS.

If any inflammable film is carried in a Chapter V ship for exhibition therein, the ship and the cinematograph equipment provided therein shall comply with the requirements specified in the Fourth Schedule.

56. METHODS OF FIRE PROTECTION.

The accommodation spaces and service spaces in every Chapter V ship shall be constructed in accordance with one of the following methods of fire protection and shall comply with such of the following requirements of this Chapter as are expressed to apply to ships in which that method has been adopted:—

Method I.—The construction in the accommodation spaces and service spaces of a system of internal bulkheading consisting of "B" Class divisions, together with an automatic fire alarm and fire detection system in these spaces.

Method II.—The fitting of an automatic sprinkler, fire detection and fire alarm system in the accommodation spaces and service spaces.

Method III.—The subdivision of the accommodation spaces and service spaces by "A" Class and "B" Class divisions, together with the fittings of an automatic fire alarm and fire detection system in all accommodation spaces and service spaces and a restriction of the provision of combustible material in these spaces.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

57. BULKHEADS WITHIN MAIN VERTICAL ZONES. (METHODS I AND III.)

(1) *Method I.*

(*a*) Every bulkhead within the accommodation spaces or service spaces of a ship in which Method I of fire protection has been adopted, not being a bulkhead required by this Part to consist of "A" Class divisions, shall consist of "B" Class divisions. The bulk-

wyse waarop die beskotte gelas is moet sodanig wees dat dit die maksimum weerstand teen brand sal bied. Indien so 'n skip meer as 100 passasiers vervoer, moet genoemde afdelings van die B-klas van vuurvaste materiaal gebou wees, maar onderworpe aan die bepalings van subparagraaf (*b*) van paragraaf (1) van regulasie 60, mag dit met brandbare materiaal beklee word.

(*b*) Elk so 'n beskot moet van dek tot dek loop. Met die voorbehoud dat 'n beskot, behalwe 'n deurgangsbeskot, by 'n plafon van vuurvaste materiaal kan eindig.

(*c*) Waar die skip se huidbeplating die grens van 'n verblyfruimte of 'n diensruimte vorm, moet die aangrensende dwarsbeskotte tot by die huidbeplating loop. Waar die buitenkantste beplating van 'n dekhuis die grens van 'n verblyfruimte of 'n diensruimte vorm, moet die aangrensende dwars- en langskeepse beskotte tot by die buitenste beplating loop. Met die voorbehoud dat enige so 'n beskot, behalwe 'n deurgangsbeskot, by 'n bekleding van vuurvaste materiaal kan eindig.

(*d*) Enige ventilasie-opening in 'n deurgangsbeskot moet waar moontlik in die onderste gedeelte van die beskot wees en moet voorsien word van 'n tralieraampie van vuurvaste materiaal.

(2) *Metode III.*

(*a*) Beskotte in die verblyfruimtes en diensruimtes van elke skip waarin Metode III vir beskerming teen brand toegepas is, en wat nie 'n beskot is wat deur hierdie Deel vereis word om uit afdelings van die A-klas te bestaan nie, moet van afdelings van die B-klas gebou word sodat hulle 'n aaneenlopende netwerk van afdelings van die B-klas vorm, of tesame met sodanige beskotte as wat van afdelings van die A-klas gebou is, 'n aaneenlopende netwerk van afdelings van die A- en B-klas vorm. Die oppervlakte van enige afdeling wat deur sodanige netwerk gevorm word, mag nie 1,600 vierkante voet oorskry nie en moet waar prakties moontlik nie 1,300 vierkante voet oorskry nie.

(*b*) Elke openbare kamer in so 'n skip, wat 'n ruimte is wat nie inwendige indelings het nie moet, behalwe by die huidbeplating van die skip of die buitekantse beplating van 'n dekhuis, begrens word deur beskotte bestaande uit afdelings van die B-klas tensy die beskotte wat die kamer omsluit deur hierdie Deel vereis word om uitafdelings van die A-klas te bestaan.

(*c*) Elke deurgangsbeskot in so 'n skip moet uit afdelings van die B-klas bestaan tensy dit deur hierdie Deel vereis word om uit afdelings van die A-klas te bestaan, en moet van dek tot dek loop. Met die voorbehoud dat ventilasie openings met tralieraampies van vuurvaste materiaal in so 'n beskot geïnstalleer kan word op plekke waar geen plafonne bokant so 'n beskot aangebring is nie, of waar die plafonne wat daar aangebring is van vuurvaste materiaal is.

(*d*) Indien so 'n skip meer as 100 passasiers vervoer, moet elke afdeling van die B-klas wat ooreenkomstig hierdie paragraaf gebou is, van vuurvaste materiaal gebou word maar, onderworpe aan die bepalings van paragraaf (2) van regulasie 60, mag dit met brandbare materiaal beklee word. Indien so 'n skip 100 passasiers of minder vervoer, moet elk so 'n afdeling 'n vuurvaste kern hê of saamgestel wees uit inwendige lae plaatasbes of soortgelyke vuurvaste materiaal, en moet in elke geval voldoen aan die vereistes van paragraaf (2) van regulasie 44, asof dit geheel en al van brandbare materiaal gebou is.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

heads shall be joined together in a manner which will ensure the maximum resistance to fire. If such a ship carries more than 100 passengers the said "B" Class divisions shall be constructed of incombustible material but, subject to the provisions of sub-paragraph (*b*) of paragraph (1) of regulation 60, may be faced with combustible material.

(*b*) Every such bulkhead shall extend from deck to deck. Provided that a bulkhead, other than a corridor bulkhead, may terminate at a ceiling consisting of incombustible material.

(*c*) Where the ship's shell plating forms the boundary of an accommodation space or a service space, the adjacent transverse bulkheads shall extend to the shell plating. Where the external plating of a deckhouse forms the boundary of an accommodation space or service space, the adjacent transverse and longitudinal bulkheads shall extend to the external plating. Provided that any such bulkhead, other than a corridor bulkhead, may terminate at a lining consisting of incombustible material.

(*d*) Any ventilation opening in a corridor bulkhead shall be in the lower part of the bulkhead wherever practicable and shall be provided with a grille constructed of incombustible material.

(2) *Method III.*

(*a*) bulkheads within the accommodation spaces and service spaces of every ship in which Method III of fire protection has been adopted, not being a bulkhead required by this Part to consist of "A" Class divisions, shall be constructed of "B" Class divisions so as to form a continuous network of "B" Class divisions or, together with such bulkheads as are constructed of "A" Class divisions, a continuous network of "A" and "B" Class divisions. The area of any one compartment formed by such network shall not exceed 1,600 square feet and shall wherever practicable not exceed 1,300 square feet.

(*b*) Every public room in such a ship, being a space without interior subdivisions, shall, except at the shell plating of the ship or the external plating of a deckhouse, be bounded by bulkheads consisting of "B" Class divisions unless the bulkheads enclosing the room are required by this Part to consist of "A" Class divisions.

(*c*) Every corridor bulkhead in such a ship shall consist of "B" Class divisions unless it is required by this Part to consist of "A" Class divisions and shall extend from deck to deck. Provided that ventilation openings having grilles of incombustible material may be installed in such bulkhead at points where no ceilings are fitted above such bulkhead or where the ceilings there fitted are constructed of incombustible material.

(*d*) If such a ship carries more than 100 passengers, every "B" Class division constructed in accordance with this paragraph shall be constructed of incombustible material but, subject to the provisions of paragraph (2) of regulation 60, may be faced with combustible material. If such a ship carries 100 passengers or less, every such division shall have an incombustible core or shall be assembled with internal layers of sheet asbestos or similar incombustible material, and in either case shall comply with the requirements of paragraph (2) of regulation 44 as if it were constructed wholly of combustible material.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

58. OUTOMATIESE BRANDALARM- EN BRANDOPSPORINGSTELSELS. (METODES I EN III.)

In elke skip waarin Metode I of Metode III vir beskerming teen brand in gebruik geneem is, moet 'n brandalarm- en 'n brandopsporingstelsel aangebring word wat die aanwesigheid van brand in enige verblyfruimte of diensruimte sal opspoor en die aanwesigheid en plek van die brand sal aandui deur middel van 'n teken wat op een of meer plekke in die skip gegee word sodat dit snel onder die aandag van die gesagvoerder en bemanning van die skip kan kom.

(OPMERKING.—Die aandag word gevestig op regulasies 91 en 95 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

59. OUTOMATIESE SPROEIER-, BRANDALARM- EN BRANDOPSPORINGSTELSELS. (METODE II.)

In elke skip waarin Metode II vir beskerming teen brand in gebruik geneem is, moet 'n outomatiese sproeier-, brandalarm- en brandopsporingstelsel wat voldoen aan die voorskrifte uiteengesit in die Vyfde Bylae, geïnstalleer en so ingerig word dat dit beskerming sal verleen aan alle verblyfruimtes en diensruimtes in die skip.

(OPMERKING.—Die aandag word gevestig op regulasies 91 en 95 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

60. BEPERKING VAN BRANDBARE MATERIAAL, ENS. (METODES I EN III.)

(1) *Metode I.*

(*a*) In elke skip waarin Metode I vir beskerming teen brand in gebruik geneem is, moet alle bekledings, style, plafonne en isolasiemiddels van vuurvaste materiaal wees behalwe in vragruime, poskamers, staafgoud- en silwerkamers, baggasiekamers en verkoelde voorraadkamers. Met die voorbehoud dat die bekledings, style en plafonne in skepe wat nie meer as 100 passasiers vervoer nie, van brandbare materiaal gemaak kan wees wat dieselfde hoedanighede ten opsigte van weerstand teen brand besit as die materiaal van die beskotte wat die ruimtes waarin hulle geleë is, omsluit.

(*b*) Die totale volume van brandbare materiale wat as bekledings, lyswerk, versierings of fineeroplegwerke in enige verblyfruimte of diensruimte in 'n skip waarin Metode I vir beskerming teen brand in gebruik geneem is, en wat 'n skip is wat meer as 100 passasiers vervoer, mag nie groter wees nie as 'n volume wat gelyk is aan dié van 'n fineer-oplegwerk van een-tiende duim op die gesamentlike oppervlakte van die mure en plafon van sodanige ruimte. Enige bekledings-, lyswerk, versierings of fineer-oplegwerke wat in die gange of trapomsluitings in so 'n skip aangebring word, moet van vuurvaste materiaal wees.

(2) *Metode III.*

In elke skip waarin Metode III vir beskerming teen brand in gebruik geneem is, moet die voorsiening van brandbare material vir bekledings, style, plafonne, uitrusting en meublement in enige ruimte in die verblyfruimtes of die diensruimte beperk wees tot die minimum bestaanbaar met die gebruik waarvoor die ruimte bedoel is. In die openbare kamers in so 'n skip moet die style en die draagbalke van die bekledings en plafonne van staal of 'n ander materiaal wat netso doeltreffend is om brand te weerstaan, wees. Alle blootgestelde oppervlaktes en hulle verflae in die verblyfruimtes van so 'n skip moet oppervlaktes met 'n lae vlamverspreiding binne die betekenis van paragraaf (3) van regulasie 54 hê.

(OPMERKING.—Die aandag word gevestig op regulasie 91 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

58. AUTOMATIC FIRE ALARM AND FIRE DETECTION SYSTEMS. (METHODS I AND III.)

In every ship in which Method I or Method III of fire protection has been adopted, a fire alarm and fire detection system shall be installed which will detect the presence of fire in any accommodation space or service space and will indicate the presence and position of the fire by a signal given at one or more points in the ship so as to come rapidly to the notice of the master and crew of the ship.

(NOTE.—Attention is invited to regulations 91 and 95 in terms of which a ship may be exempted from the requirements of this regulation.)

59. AUTOMATIC SPRINKLER, FIRE ALARM AND FIRE DETECTION SYSTEMS. (METHOD II.)

In every ship in which Method II of fire protection has been adopted, an automatic sprinkler and fire alarm and fire detection system complying with the requirements specified in the Fifth Schedule shall be installed and so arranged as to protect all accommodation spaces and service spaces in the ship.

(NOTE.—Attention is invited to regulations 91 and 95 in terms of which a ship may be exempted from the requirements of this regulation.)

60. RESTRICTION OF COMBUSTIBLE MATERIAL, ETC. (METHODS I AND III.)

(1) *Method I.*

(*a*) In every ship in which Method I of fire protection has been adopted, all linings, grounds, ceilings and insulation shall consist of incombustible material except in cargo spaces, mail rooms, bullion rooms, baggage rooms and refrigerated store rooms. Provided that the linings, grounds and ceilings in ships carrying not more than 100 passengers may be constructed of combustible material having the same fire-resisting properties as the material of the bulkheads enclosing the spaces in which they are situated.

(*b*) The total volume of combustible materials installed as facings mouldings, decorations or veneers in any accomodation space or service space in a ship in which Method I of fire protection has been adopted, being a ship carrying more than 100 passengers, shall not exceed a volume equal to that of a veneer of one-tenth of an inch on the combined area of the walls and ceiling of such space. Any facings, mouldings decorations or veneers installed in the corridors or stairway enclosures in such a ship shall consist of incombustible materials.

(2) *Method III.*

In every ship in which Method III of fire protection has been adopted, the provision of combustible materials for lining, grounds, ceilings, fittings and furnishings in any space in the accommodation spaces or service spaces shall be restricted to the minimum compatible with the use for which that space is appropriated. In the public rooms in such a ship the grounds and supports for the linings and ceilings shall be constructed of steel or other material equally effective in resisting fire. All exposed surfaces and their coatings in the accommodation spaces of such a ship shall be surfaces of low flame spread within the meaning of paragraph (3) of regulation 54.

(NOTE.—Attention is invited to regulation 91 in terms of which a ship may be exempted from the requirements of this regulation.)

HOOFSTUK V (A).—BESKERMING TEEN BRAND: SKEPE VAN KLAS VI.

61. Toepassing van Hoofstuk V (A).

Hierdie hoofstuk is op skepe van Klas VI van toepassing.

62. Afdelings.

In elke skip van Klas VI wat 'n skip is wat deur binnebrandmasjinerie aangedryf word of wat toegerus is met stoomketels wat deur middel van olie gestook word, moet die verblyfruimtes van die masjinerieruime geskei word deur middel van afdelings van die A-klas.

HOOFSTUK VI.—STOOMKETELS EN MASJINERIE.

63. Toepassing van Hoofstuk VI.

Hierdie hoofstuk is op elke skip van toepassing.

64. Algemeen.

Die ontwerp en bou van die stoomketels en masjinerie in enige skip moet toereikend wees vir die diens waarvoor hulle bedoel is, en moet so aangebring en beskerm word dat hulle nie 'n gevaar is vir persone aan boord nie. Sonder benadeling van die algemeenheid van die voorafgaande, moet middels voorsien word om oormatige druk te voorkom in enige deel van sulke stoomketels en masjinerie, en in besonder moet elke stoomketel en ander drukhouer wat gebruik word om stoom te ontwikkel voorsien wees van minstens twee veiligheidskleppe.

65. Krag om agteruit te vaar.

Die aandrywingsmasjinerie van elke skip moet voldoende krag hê om agteruit te vaar, en die dryfkrag van die skip moet met voldoende spoed omgeset kan word sodat die skip behoorlik hanteer kan word.

66. Stoomketels, oorverhitters, waterverwarmers, verdampers, distilleerders en ander stoom- of waterdrukhouers.

(1) In elke skip moet elke stoomketel, oorverhitter, waterverwarmer, verdamper, distilleerder en ander stoom- of waterdrukhouer en hulle onderskeie monterings so ontwerp en gebou wees dat dit die maksimum werkspannings kan weerstaan waaraan hulle onderwerp mag word, met 'n toereikende veiligheidsfaktor, met inagneming van—

(*a*) hulle ontwerp en die materiaal waarvan hulle gebou is;

(*b*) die doel waarvoor hulle bedoel is om gebruik te word; en

(*c*) die werksomstandighede waaronder hulle bedoel is om gebruik te word.

Voorsiening moet gemaak word wat die skoonmaak en ondersoek van sulke drukhouers sal vergemaklik.

(2) Sonder benadeling van die algemeenheid van paragraaf (1)—

(*a*) moet elke stoomketel en oorverhitter in staat wees om, wanneer dit vir die eerste keer in die skip in gebruik geneem word, vir 'n periode van minstens dertig minute 'n toets met hidroliese druk van die volgende omvang te weerstaan:—

(i) tot een en 'n half keer die maksimum werkdruk van die stoomketel plus 50 pond per vierkante duim, indien sodanige werkdruk meer as 100 pond per vierkante duim is; of

(ii) tot twee keer die maksimum werkdruk van die stoomketel, indien sodanige werkdruk 100 pond per vierkante duim of minder is.

(*b*) elke stoomketel en oorverhitter wat 'n stoomketel of oorverhitter van sodanige afmetings en vorm is dat dit voldoende inwendig ondersoek kan word, moet te enige tyd nadat dit vir die eerste keer in die skip in gebruik geneem is, in staat wees om 'n toets met hidroliese druk tot een en 'n half keer die maksimum werkdruk van die stoomketel vir 'n periode van minstens dertig minute te weerstaan;

CHAPTER V (A).—FIRE PROTECTION: SHIPS OF CLASS VI.

61. Application of Chapter V (A).

This Chapter applies to ships of Class VI.

62. Divisions.

In every ship of Class VI being a ship fitted with internal combustion propelling machinery or oil-fired boilers, the accommodation spaces shall be separated from machinery spaces by "A" Class divisions.

CHAPTER VI.—BOILERS AND MACHINERY.

63. Application of Chapter VI.

This Chapter applies to every ship.

64. General.

The boilers and machinery provided in any ship shall be of a design and construction adequate for the service for which they are intended, and shall be so installed and protected as not to constitute a danger to persons on board. Without prejudice to the generality of the foregoing, means shall be provided which will prevent overpressure in any part of such boilers and machinery, and in particular every boiler and other pressure vessel used for generating steam shall be provided with not less than two safety valves.

65. Power for Going Astern.

The propelling machinery of every ship shall have sufficient power for going astern, and the propulsion of the ship shall be capable of being reversed with sufficient speed, to enable the ship to be properly handled.

66. Boilers, Superheaters, Economisers, Evaporators, Distillers and Other Steam or Water Pressure Vessels.

(1) In every ship, every boiler, superheater, economiser, evaporator, distiller and other steam or water pressure vessel, and their respective mountings, shall be so designed and constructed as to withstand the maximum working stresses to which they may be subjected, with a factor of safety which is adequate, having regard to—

(*a*) their design and the material of which they are constructed;

(*b*) the purpose for which they are intended to be used; and

(*c*) the working conditions under which they are intended to be used.

Provision shall be made which will facilitate the cleaning and inspection of such pressure vessels.

(2) Without prejudice to the generality of paragraph (1)—

(*a*) every boiler and superheater, when put into service for the first time in the ship, shall be capable of withstanding for a period of not less than thirty minutes a test by hydraulic pressure to the following extent:—

(i) to one and one-half times the maximum working pressure of the boiler plus 50 pounds per square inch, if such working pressure is more than 100 pounds per square inch; or

(ii) to twice the maximum working pressure of the boiler, if such working pressure is 100 pounds per square inch or less;

(*b*) every boiler and superheater, being a boiler or superheater of such dimensions and form that an adequate internal examination thereof can be made, shall, at any time after first being put into service in the ship, be capable of withstanding for a period of not less than thirty minutes a test by hydraulic pressure to one and one-half times the maximum working pressure of the boiler;

(*c*) elke stoomketel en oorverhitter wat 'n stoomketel of oorverhitter van sodanige afmetings en vorm is dat dit nie voldoende inwendig ondersoek kan word nie, moet te enige tyd nadat dit vir die eerste keer in enige skip in gebruik geneem is, instaat wees om 'n toets met hidroliese druk tot die omvang uiteengesit in subparagraaf (*a*) van hierdie paragraaf, te weerstaan.

(3) Elke waterverwarmer moet in staat wees om te alle tye 'n toets met hidroliese druk tot die volgende omvang te weerstaan:—

(*a*) Indien die waterverwarmer nie van die stoomketel afgesluit kan word nie, tot dieselfde omvang as wat deur subparagraaf (*a*) van paragraaf (2) vereis word met betrekking tot die stoomketel waarmee die waterverwarmer verbind is; of

(*b*) indien die waterverwarmer van die stoomketel afgesluit kan word, tot een en 'n half keer die maksimum werkdruk van die veiligheidsklep van die waterverwarmer plus 50 pond per vierkante duim.

(4) Elke montering van elke stoomketel, wat nie 'n montering in die stoomketelvoedingstelsel is nie, moet in staat wees om 'n toets met hidroliese druk tot twee keer die maksimum werkdruk van die stoomketel te weerstaan.

Elke montering van elke oorverhitter en waterverwarmer wat nie 'n montering in die stoomketelvoedingstelsel is nie, moet instaat wees om 'n toets te weerstaan met hidroliese druk tot twee keer die maksimum werkdruk van die stoomketel waarmee die oorverhitter of waterverwarmer, wat die geval ook al is, verbind is.

67. MASJINERIE.

(1) 'n Reëlaar moet in elke skip voorsien word vir enige vorentoe-turbine of stel turbines wat 'n enkelratwiel aandryf wat 'n deel vorm van die hoofaandrywingsmasjinerie, sodat die stoom outomaties afgesluit kan word ingeval die spoed te hoog word. 'n Handskakelaar moet ook vir daardie doel voorsien word.

(2) In elke skip moet middels voorsien word wat die stoom vanaf enige vorentoe-turbine en enige ander masjinerie, wat deur dieselfde smeeroliestelsel bedien word as die turbine, in die geval van enige defek van daardie stelsel outomaties afsluit.

(3) (*a*) Die straalpypkaste van elke impulsstoomturbine wat in die skip aangebring word, moet in staat wees om 'n toets met hidroliese druk tot een en 'n half keer die maksimum druk waaraan dit in gebruik onderwerp mag word, te weerstaan.

(*b*) Die stoomkaste van elke turbine wat in die skip aangebring is, moet in staat wees om 'n toets met hidroliese druk tot een en 'n half keer die maksimum werkdruk in sulke kaste, of 30 pond per vierkant duim, wat ookal die grootste is, te weerstaan.

(4) Die silinders van alle stoomsuiermasjinerie wat in die skip aangebring is, moet in staat wees om 'n toets met hidroliese druk van die volgende omvang te weerstaan:—

Tipe masjien.	*Silinderdruk.*	*Druk van toets.*
Samegestelde uitsetting	Hoog.....	1½ × M.W.D.
Samegestelde uitsetting	Laag.....	30 pond per vierkant duim.
Drievoudige uitsetting	Hoog.....	1½ × M.W.D.
Drievoudige uitsetting	Intermediêr.....	¾ × M.W.D.
Drievoudige uitsetting	Laag.....	30 pond per vierkant duim.
Viervoudige uitsetting.	Hoog.....	1½ × M.W.D.
Viervoudige uitsetting.	1ste Intermediêr.	⅞ × M.W.D.
Viervoudige uitsetting.	2de Intermediêr..	⅝ × M.W.D.
Viervoudige uitsetting.	Laag.....	30 pond per vierkant duim.

In die voorafgaande tabel beteken „M.W.D." met betrekking tot 'n silinder, die maksimum werkdruk van die stoomketel waarmee die masjinerie, waarvan die silinder 'n deel vorm, verbind is.

(5) Die silindervoerings van elke kompressie-ontstekingsenjin wat in die skip aangebring is, moet in staat wees om 'n toets met hidroliese druk tot 100 pond per vierkant duim te weerstaan. Die verkoelingskanale van die silinders, bedekkings en ander vloeistofverkoelde dele van so 'n enjin moet in staat wees om 'n toets met hidroliese druk tot 30 pond per vierkant duim te weerstaan.

(*c*) every boiler and superheater, being a boiler or superheater of such dimensions and form that an adequate internal examination thereof cannot be made, shall, at any time after first being put into service in any ship, be capable of withstanding a test by hydraulic pressure to the extent specified in sub-paragraph (*a*) of this paragraph.

(3) Every economiser shall be capable at all times of withstanding a test by hydraulic pressure to the following extent:—

(*a*) If the economiser cannot be shut off from the boiler, to the same extent as is required by sub-paragraph (*a*) of paragraph (2) in relation to the boiler to which the economiser is connected; or

(*b*) if the economiser can be shut off from the boiler, to one and one-half times the maximum working pressure of the safety valve of the economiser plus 50 pounds per square inch.

(4) Each mounting of every boiler, not being a mounting in the boiler feed system, shall be capable of withstanding a test by hydraulic pressure to twice the maximum working pressure of the boiler.

Each mounting of every superheater and economiser, not being a mounting in the boiler feed system, shall be capable of withstanding a test by hydraulic pressure to twice the maximum working pressure of the boiler to which the superheater or economiser, as the case may be, is connected.

67. MACHINERY.

(1) In very ship, a governor shall be provided for any ahead turbine or set of turbines which drives a single gear wheel forming part of the main propelling machinery, so as to shut off the steam automatically in the event of overspeed. A hand-trip gear shall also be provided for that purpose.

(2) In every ship means shall be provided which will shut off automatically the steam from any ahead turbine, and any other machinery served by the same lubricating oil system as the turbine, in the event of any failure of that system.

(3) (*a*) The nozzle boxes of every impulse steam turbine fitted in the ship shall be capable of withstanding a test by hydraulic pressure to one and one-half times the maximum pressure to which they may be subjected in service.

(*b*) The steam casings of every turbine fitted in the ship shall be capable of withstanding a test by hydraulic pressure to one and one-half times the maximum working pressure in such casings or 30 pounds per square inch, whichever shall be the greater.

(4) The cylinders of all steam reciprocating machinery fitted in the ship, shall be capable of withstanding a test by hydraulic pressure to the following extent:—

Type of Engine.	*Cylinder Pressure.*	*Pressure of Test.*
Compound expansion.	High.....	1½ × M.W.P.
Compound expansion.	Low.....	30 pounds per square inch.
Triple expansion.....	High.....	1½ × M.W.P
Triple expansion.....	Intermediate....	¾ × M.W.P.
Triple expansion.....	Low.....	30 pounds per square inch.
Quadruple expansion.	High.....	1½ × M.W.P.
Quadruple expansion.	1st intermediate.	⅞ × M.W.P.
Quadruple expansion.	2nd intermediate	⅝ × M.W.P.
Quadruple expansion.	Low.....	30 pounds per square inch.

In the foregoing table "M.W.P." means, in relation to a cylinder, the maximum working pressure of the boiler to which the machinery of which the cylinder forms a part is connected.

(5) The cylinder liners of every compression ignition engine fitted in the ship, shall be capable of withstanding a test by hydraulic pressure to 100 pounds per square inch. The cooling passages of the cylinders, covers and other fluid-cooled parts of such engine shall be capable of withstanding a test by hydraulic pressure to 30 pounds per square inch.

(6) Onderworpe aan die bepalings van paragraaf (2) van regulasie 38, mag geen masjinerie of stoomketels wat ontwerp is om met oliebrandstof met 'n ontbrandingspunt van minder as 150° F. (65·6° C.) te werk, in die skip aangebring word nie.

68. ASTE.

In elke skip moet elke as so ontwerp en gebou wees dat dit die maksimum werkspannings waaraan dit blootgestel mag word sal weerstaan, met 'n veiligheidsfaktor wat voldoende is met inagneming van—

(*a*) die materiaal waarvan dit gebou is;

(*b*) die diens waarvoor dit bedoel is; en

(*c*) die tipe enjins waardeur dit aangedryf word of waarvan dit 'n deel is.

69. STOOMKETELVOEDINGSTELSELS.

(1) Elke stoomketel wat in 'n skip aangebring is, moet voorsien wees van minstens twee doeltreffende en aparte voedingstelsels wat so ingerig is dat enigeen van sodanige stelsels vir inspeksie of nasien oopgemaak kan word sonder om die doeltreffendheid van die ander een te beïnvloed. Middels moet voorsien word om oordruk in enige deel van die stelsels te voorkom.

(2) Indien dit moontlik is dat olie in die voedingswaterstelsel van die skip kan kom, moet die inrigtings vir die voorsiening van stoomketelvoedingswater voorsiening maak vir die opvang van olie in die voedingswater.

(3) Elke voedingsterugslagklep, inrigting en pyp waardeur voedingswater van 'n pomp na die stoomketels in die skip gaan, moet doeltreffend ontwerp en sterk genoeg wees om met 'n voldoende veiligheidsfaktor die maksimum werkdruk waaraan die voedingskanaal onderwerp mag word, te weerstaan. Sodanige klep, inrigting en pyp moet ook in staat wees om 'n toets te weerstaan met hidroliese druk tot twee en 'n half keer die maksimum werkdruk van die stoomketel waarmee hulle verbind is of twee keer die maksimum werkdruk van die voedingskanaal, watter ook al die grootste is. Die voedingspype moet voldoende gesteun word.

70. STOOMPYPSTELSELS.

(1) In elke skip moet elke stoompyp en elke toerusting wat daarmee verbind is en waardeur stoom mag gaan, so ontwerp en gebou wees dat dit die maksimum werkspannings waaraan dit onderwerp mag word, kan weerstaan, met 'n veiligheidsfaktor wat voldoende is met inagneming van—

(*a*) die materiaal waarvan dit gebou is; en

(*b*) die werksomstandighede waarin dit gebruik sal word.

Die stoompype moet voldoende gesteun word.

(2) Sonder benadeling van die algemeenheid van paragraaf (1), moet elke stoompyp en inrigting in staat wees om 'n toets met hidroliese druk tot twee keer die maksimum werkdruk waaraan dit onderwerp mag word, te weerstaan.

(3) Voorsiening moet gemaak word om oormatige drukspanning te verhoed wat moontlik daartoe aanleiding kan gee dat enige stoompyp defek raak, hetsy weens temperatuurswisseling, trilling, of andersins.

(4) Doeltreffende middels moet voorsien word om elke stoompyp te dreineer ten einde te verseker dat die binnekant van die pyp geen water bevat nie en dat waterhammerslag nie sal voorkom in enige omstandighede wat moontlik kan voorkom in die loop van die voorgenome diens van die skip nie.

(5) Indien 'n stoompyp stoom van enige bron mag ontvang teen 'n hoër druk as wat dit met 'n voldoende veiligheidsfaktor kan weerstaan, moet 'n doeltreffende reduseerklep, ontlasklep en drukmeter aan sodanige pyp aangebring word.

71. LUGDRUKSTELSELS.

(1) Elke skip wat aangedryf word deur kompressieontstekingsenjins wat ontwerp is om deur middel van saamgeperste lug aangesit te word, moet voorsien wees van minstens twee aansitlugkompressors, waarvan elkeen 'n doeltreffende ontwerp en voldoende krag en inhoud

(6) Subject to the provisions of paragraph (2) of regulation 38, no machinery or boilers shall be fitted in the ship which are designed to be operated by means of oil fuel having a flash point of less than 150° F. (65·6° C.).

68. SHAFTS.

In every ship, every shaft shall be so designed and constructed that it will withstand the maximum working stresses to which it may be subjected, with a factor of safety which is adequate having regard to—

(*a*) the material of which it is constructed;

(*b*) the service for which it is intended; and

(*c*) the type of the engines by which it is driven or of which it forms a part.

69. BOILER FEED SYSTEMS.

(1) Every boiler fitted in a ship shall be provided with not less than two efficient and separated feed systems so arranged that either of such systems may be opened up for inspection or overhaul without affecting the efficiency of the other. Means shall be provided which will prevent overpressure in any part of the systems.

(2) If it is possible for oil to enter the feed water system in the ship, the arrangements for supplying boiler feed water shall provide for the interception of oil in the feed water.

(3) Every feed check valve, fitting and pipe through which feed water passes from a pump to the boilers in the ship, shall be of efficient design and of sufficient strength to withstand with an adequate factor of safety the maximum working pressure to which the feed line may be subjected. Such valve, fitting and pipe shall also be capable of withstanding a test by hydraulic pressure to two and one-half times the maximum working pressure of the boiler to which they are connected or twice the maximum working pressure of the feed line, whichever shall be the greater. The feed pipes shall be adequately supported.

70. STEAM PIPE SYSTEMS.

(1) In every ship, every steam pipe and every fitting connected thereto through which steam may pass shall be so designed and constructed as to withstand the maximum working stresses to which it may be subjected, with a factor of safety which is adequate having regard to—

(*a*) the material of which it is constructed; and

(*b*) the working conditions under which it will be used.

The steam pipes shall be adequately supported.

(2) Without prejudice to the generality of paragraph (1), every steam pipe and fitting shall be capable of withstanding a test by hydraulic pressure to twice the maximum working pressure to which it may be subjected.

(3) Provision shall be made which will avoid excessive stress likely to lead to the failure of any steam pipe, whether by reason of variation in temperature, vibration or otherwise.

(4) Efficient means shall be provided for draining every steam pipe so as to ensure that the interior of the pipe is kept free of water and that water hammer action will not occur under any conditions likely to arise in the course of the intended service of the ship.

(5) If a steam pipe may receive steam from any source at a higher pressure than it can withstand with an adequate factor of safety, an efficient reducing valve, relief valve and pressure guage shall be fitted to such pipe.

71. AIR PRESSURE SYSTEMS.

(1) Every ship, being a ship propelled by compression ignition engines designed to be started by compressed air, shall be provided with at least two starting air compressors, each of which shall be of efficient design and of

moet besit vir die diens waarvoor dit bedoel is: Met die voorbehoud dat in skepe van Klas VI slegs een kompressor vereis sal word.

(2) Sonder benadeling van die algemeenheid van paragraaf (1)—

(*a*) moet elke silinder wat 'n deel vorm van 'n lugkompressor in 'n skip in staat wees om 'n toets met hidroliese druk tot twee keer sy maksimum werkdruk te weerstaan;

(*b*) moet elke koelslang van elke stadium wat 'n deel vorm van sulke lugkompressor in staat wees om 'n toets met hidroliese druk tot twee keer die maksimum van die werkdruk van daardie stadium te weerstaan;

(*c*) moet die verkoelingskanale van so 'n lugkompressor en die koeleromhulsels daarvan in staat wees om 'n toets met hidroliese druk tot 30 pond per vierkant duim te weerstaan; en

(*d*) moet 'n ontlasklep in die hoëdruk-afvoer van sodanige kompressor aangebring word, en moet 'n ontlasklep of veiligheidsdiafragma aan die omhulsel van die hoëdrukverkoeler aangebring word.

(3) Elke skip moet voorsien wees van 'n aansitlugkompressor wat sonder 'n voorraad saamgeperste lug aangesit kan word, en wat benewens die kompressors vereis deur paragraaf (1) voorsien moet word: Met die voorbehoud dat so 'n bykomstige kompressor nie vereis word nie indien 'n kompressor ooreenkomstig genoemde paragraaf sonder 'n voorraad saamgeperste lug in gebruik geneem kan word.

(4) Elke skip wat aangedryf word deur kompressie-ontstekingsenjins wat ontwerp is om met saamgeperste lug aangesit te word, moet voorsien wees van minstens twee lughouers wat so 'n saamgestelde inhoud moet hê dat wanneer hulle met saamgeperste lug gevul word, die lug daarin voldoende sal wees om elkeen van die skip se hoofenjins twaalf keer aan te sit indien sodanige enjins omkeerbaar is, en ses keer indien sodanige enjins nie omkeerbaar is nie: Met die voorbehoud dat in skepe van Klas VI, slegs een sodanige lughouer vereis word.

(5) Elke lughouer wat in die skip voorsien word moet so ontwerp en gebou wees wat dit die maksimum werksspanning waaraan dit onderwerp mag word, kan weerstaan met 'n veiligheidsfaktor wat voldoende is met inagneming van—

(*a*) sy ontwerp en die materiaal waarvan dit gemaak is; en

(*b*) die werksomstandighede waaronder dit bedoel is om gebruik te word.

Sonder benadeling van die algemeenheid van die voorafgaande, moet elke lughouer in staat wees om 'n toets te weerstaan met hidroliese druk tot die omvang wat in die volgende tabel uiteengesit word:—

Bou van lughouer.	*M.W.D. van ontvanger.*	*Druk van toets.*
Vasgeklink....	Nie oor 100 nie.....	2 × M.W.D.
Vasgesklink...	Oor 100 maar nie oor 300 nie	1½ × M.W.D. + 50.
Vasgeklink....	Oor 300.....	M.W.D. + 200.
Gesmeltsweis..	Nie oor 100 nie.....	2 × M.W.D.
Gesmeltsweis..	Oor 100.....	1 × M.W.D. + 50.

In voorafgaande tabel word drukke in ponde per vierkant duim aangedui en „M.W.D." beteken maksimum werkdruk.

(6) Elke lugfles wat in elke skip voorsien word, moet doeltreffend ontwerp en van naatlose staalbuis gemaak word met die ente van die fles afgedruk van die buis af, of ewe doeltreffend gebou word. Die fles moet uitgegloei word en in staat wees om 'n toets met hidroliese druk tot twee keer sy maksimum werkdruk te weerstaan.

(7) Elke lughouer en lugfles wat in die skip voorsien word, moet so ingerig wees dat dit toeganklik is vir ondersoekdoeleindes en moet voorsien wees van doeltreffende afvoerkanale vir die verwydering van olie en water, en van doeltreffende ontlaskleppe om oorlading te voorkom. Indien die lughouer of lugfles van die ontlas-

sufficient strength and capacity for the service for which it is intended: Provided that in ships of Class VI, only one such compressor shall be required.

(2) Without prejudice to the generality of paragraph (1)—

(*a*) every cylinder forming part of an air compressor in a ship shall be capable of withstanding a test by hydraulic pressure to twice its maximum working pressure;

(*b*) every cooling coil of each stage forming part of such air compressor shall be capable of withstanding a test by hydraulic pressure to twice the maximum working pressure of that stage;

(*c*) the cooling passages of such air compressor and the cooler casings thereof shall be capable of withstanding a test by hydraulic pressure to 30 lb. per square inch; and

(*d*) a relief valve shall be fitted in the high pressure discharge from such compressor, and a relief valve or safety diaphragm shall be fitted on the casing of the high pressure cooler.

(3) Every ship shall be provided with a starting air compressor which can be put into operation without a supply of compressed air, and which shall be additional to the compressors required by paragraph (1): Provided that such additional compressor shall not be required if a compressor fitted in accordance with the said paragraph can be put into operation without a supply of compressed air.

(4) Every ship, being a ship propelled by compression ignition engines designed to start by compressed air, shall be provided with at least two air receivers, which shall be of such aggregate capacity that, when they are filled with compressed air, the air contained therein will be sufficient to start each of the ship's main engines twelve times if such engines are reversible, and six times if such engines are non-reversible: Provided that in ships of Class VI, only one such air receiver shall be required.

(5) Every air receiver provided in the ship shall be so designed and constructed as to withstand the maximum working stresses to which it may be subjected, with a factor of safety which is adequate having regard to—

(*a*) its design and the material of which it is constructed; and

(*b*) the working conditions under which it is intended to be used.

Without prejudice to the generality of the foregoing, every air receiver shall be capable of withstanding a test by hydraulic pressure to the extent set forth in the following table:—

Construction of Receiver.	*M.W.P. of Receiver.*	*Pressure of Test.*
Riveted.....	Not over 100.....	2 × M.W.P.
Riveted.....	Over 100 but not over 300	1½ × M.W.P. + 50.
Riveted.....	Over 300.....	M.W.P. + 200.
Fusion welded	Not over 100.....	2 × M.W.P.
Fusion welded	Over 100.....	1½ × M.W.P. + 50.

In the foregoing table pressures are indicated in pounds per square inch, and "M.W.P." means maximum working pressure.

(6) Every air bottle provided in every ship shall be of efficient design and shall be made of seamless steel tube with the ends of the bottle worked down from the tube or shall be of equally efficient construction. The bottle shall be annealed and shall be capable of withstanding a test by hydraulic pressure to twice its maximum working pressure.

(7) Every air receiver and air bottle provided in the ship shall be fitted with means of access for purposes of inspection and shall be provided with efficient drains for the removal of oil and water and with efficient relief valves to prevent overpressure. If the air receiver or air

klep afgeskei kan word, moet dit toegerus word met een of meer smeltbare proppe sodat die inhoud ingeval van brand uitgelaat kan word.

(8) (*a*) Elke lugdrukpyp wat in die skip voorsien word en elke inrigting wat aan so 'n pyp verbind is, moet in staat wees om die maksimum werkspannings waaraan dit onderwerp mag word, te weerstaan, met 'n veiligheidsfaktor wat voldoende is met inagneming van—

(i) die materiaal waarvan dit gebou is; en

(ii) die werksomstandighede waaronder dit bedoel is om gebruik te word.

(*b*) Sonder benadeling van die algemeenheid van die voorafgaande, moet elk so 'n pyp en inrigting in staat wees om 'n toets met hidroliese druk tot twee keer sy maksimum werkdruk te weerstaan.

(*c*) Elke sodanige pyp moet behoorlik gesteun word. Voorsiening moet gemaak word om die binnekant van die pyp vry van olie te hou en òf die deurgang van vlamme vanaf die silinders van die enjin na die pyp te verhoed, òf die pyp teen die uitwerking van 'n inwendige ontploffing te beskerm.

(9) Indien 'n lugdrukpyp in enige skip lug vanaf enige bron ontvang teen 'n hoër druk as wat dit met 'n voldoende veiligheidsfaktor kan weerstaan, moet 'n doeltreffende reduseerklep, ontlasklep en drukmeter in sodanige pyp aangebring word.

72. Enjinverkoelingstelsels.

(1) In elke skip wat deur binnebrandmasjinerie aanbedryf word of wat voorsien is van binnebrandenjins vir die instandhouding van dienste wat noodsaaklik is vir die veiligheid van die skip of van persone aan boord, moet twee pompe voorsien word wat elk in staat moet wees om voldoende verkoelingswater te verskaf aan sodanige masjinerie of enjins, wat die geval ookal is, en aan enige olieverkoelers of varswaterverkoelers wat daaraan verbind is: met die voorbehoud dat in skepe van Klas VI, slegs een sodanige pomp vereis word.

(2) Indien regstreekse seewaterverkoeling gebruik word vir enige binnebrandmasjinerie of binnebrandenjins, moet die seewatersuigings voorsien wees van siwwe wat skoongemaak kan word sonder om die watertoevoer te onderbreek.

(3) Middels moet voorsien word om te bepaal of die verkoelingstelsels behoorlik werk en om oorlading in enige deel daarvan te voorkom.

(4) Die uitlaatpype en geluiddempers van elke binnebrandenjin wat in elke skip voorsien word, moet doeltreffend verkoel of beklee wees.

73. Smeeroliestelsels.

(1) In elke skip waar olie vir die smeer van die hoofenjins onder druk gesirkuleer word, moet minstens twee pompe voorsien word waarvan elkeen voldoende moet wees om sodanige olie te sirkuleer: met die voorbehoud dat in skepe van Klas VI slegs een sodanige pomp vereis word.

(2) Siwwe moet voorsien word om die smeerolie deur te suig en moet, behalwe in skepe van Klas VI, van so 'n aard wees dat dit skoongemaak kan word sonder dat die toevoer van sodanige olie onderbreek word.

(3) Middels moet voorsien word om vas te stel of die smeerstelsel behoorlik werk en om oorlading in enige deel van die stelsel te voorkom. Indien die middel wat oorlading moet voorkom 'n ontlasklep is, moet dit in 'n geslote kringbaan wees.

74. Oliebrandstofinstallasies (stoomketels en masjinerie).

(1) In elke skip wat deur middel van stoomketels wat met olie gestook word of binnebrandmasjinerie aangedryf word, moet elke afdeling met 'n dubbele bodem wat vir die opberging van oliebrandstof aangewend is en wat nie 'n afdeling is wat aan die uiterste voorste of agterste punt van die skip gelee is nie, toegerus word met 'n waterdigte middelafdeling.

bottle can be isolated from the relief valve, it shall be fitted with one or more fusible plugs so as to discharge its contents in the event of fire.

(8) (*a*) Every air pressure pipe provided in the ship and every fitting connected to such pipe, shall be capable of withstanding the maximum working stresses to which it may be subjected with a factor of safety which is adequate having regard to—

(i) the material of which it is constructed; and

(ii) the working conditions under which it is intended to be used.

(*b*) Without prejudice to the generality of the foregoing, every such pipe and fitting shall be capable of withstanding a test by hydraulic pressure to twice its maximum working pressure.

(*c*) Every such pipe shall be properly supported. Provision shall be made which will keep the interior of the pipe free from oil and either will prevent the passage of flame from the cylinders of the engine to the pipe, or will protect the pipe from the effects of an internal explosion.

(9) If, in any ship, an air pressure pipe may receive air from any source at a higher pressure than it can withstand with an adequate factor of safety, an efficient reducing valve, relief valve and pressure gauge shall be fitted to such pipe.

72. Engine Cooling Systems.

(1) In every ship, being a ship propelled by internal combustion machinery or provided with internal combustion engines for the maintenance of services essential for the safety of the ship or of persons on board, two pumps shall be provided each of which shall be capable of supplying adequate cooling water to such machinery or engines, as the case may be, and to any oil coolers or fresh water coolers fitted thereto: Provided that in ships of Class VI, only one such pump shall be required.

(2) If direct sea water cooling is used for any internal combustion machinery or internal combustion engines, the sea water suctions shall be provided with strainers which can be cleaned without interruption of the supply of water.

(3) Means shall be provided for ascertaining whether the cooling systems are working properly and for preventing overpressure in any part thereof.

(4) The exhaust pipes and silencers of every internal combustion engine provided in every ship shall be efficiently cooled or lagged.

73. Lubricating Oil Systems.

(1) In every ship, being a ship in which oil for the lubrication of the main engines is circulated under pressure, at least two pumps shall be provided each of which shall be adequate for circulating such oil: Provided that in ships of Class VI only one such pump shall be required.

(2) Strainers shall be provided for straining the lubricating oil, and, except in ships of Class VI, shall be capable of being cleaned without interrupting the supply of such oil.

(3) Means shall be provided for ascertaining whether the lubricating system is working properly, and for preventing overpressure in any part of the system. If the means of preventing overpressure is a relief valve, it shall be in close circuit.

74. Oil Fuel Installations (Boilers and Machinery).

(1) In every ship, being a ship propelled by means of oil-fired boilers or internal combustion machinery, every double bottom compartment appropriated for the storage of oil fuel, not being a compartment situated at the extreme forward or after end of the ship, shall be fitted with a watertight centre division.

(2) Elke oliebrandstoftenk in die skip moet behoorlik gebou wees en voorsien word van lekbakke of geute wat enige olie wat uit die tenk mag lek, sal opvang. Geen sodanige tenks mag direk bokant stoomketels of ander verhitte oppervlaktes geleë wees nie. Sonder benadeling van die algemeenheid van die voorafgaande, moet elk so 'n tenk in staat wees om 'n toets te weerstaan met hidroliese druk wat in die geval van 'n opbergingstenk, besinktenk of dienstenk gelyk is aan dié van 'n drukhoogte wat een voet groter is as die grootste drukhoogte waaraan die tenk in diens onderwerp mag word, maar in die geval van 'n besinktenk tot ministens 15 pond per vierkant duim.

(3) Die oliebrandstof wat 'n skip vervoer, moet doeltreffend geskei word van waterballas wat die skip mag bevat. Die pompinrigtings moet van so 'n aard wees dat dit toelaat dat die oliebrandstof vanaf enige opbergingstenk of besinktenk wat aangewend is vir oliebrandstof na enige ander opbergingstenk of besinktenk wat sodanig aangewend is, oorgeplaas word. Voorsorg moet getref word om te verhoed dat olie per ongeluk oorboord uitspuit of oorloop. Indien vars water opgeberg word in 'n tenk wat grens aan 'n tenk aangewend vir die opberging van oliebrandstof, moet 'n kofferdam voorsien word wat besmetting van die vars water deur die olie voorkom.

(4) In elke skip moet doeltreffende middels voorsien word om elke oliebrandstoftenk daarin te peil en om oorlading in sodanige tenk te voorkom.

(5) In elke skip moet 'n lugpyp vanaf elke oliebrandstoftenk na die buitelug gelei word en die uitlaat daarvan moet op so 'n plek geleë wees dat daar geen gevaar sal wees van brand of ontploffing wat ontstaan as gevolg van oliedamp wat uit die pyp ontsnap terwyl die tenk gevul word nie. Elk so 'n pyp moet toegerus word met 'n verwyderbare draadgaasdiafragma. Indien sodanige pyp ook as 'n oorlooppyp dien, moet voorsorg getref word om te voorkom dat die oorloop in of naby 'n stoomketelkamer, skeepskombuis of ander plek inloop waar dit kan ontvlam.

(6) Elke afvoerkanaal wat in die skip voorsien word om water van oliebrandstof in opbergings-, of besinktenks of in afskeiers te verwyder, moet van die selfsluitende tipe wees.

(7) Die oliebrandstofvulstasies in elke skip moet van ander ruimtes in die skip geskei word en doeltreffend gedreineer en geventileer word. Voorsiening moet gemaak word om oorlading in enige olievulpyplyne te voorkom.

(8) In elke skip moet elke oliedrukpyp van naatlose staal gemaak word en indien dit gebruik word vir die vervoer van verhitte olie moet dit in 'n opvallende posisie bokant die platforms in goed verligte dele van die stoomketelkamer of enjinkamer geleë wees. Elke sodanige pyp en las daarin en elke inrigting verbind met so 'n pyp moet in staat wees om 'n toets met hidroliese druk tot 400 pond per vierkant duim of tot twee keer sy maksimum werkdruk, wat ookal die grootste is, te weerstaan.

(9) In elke skip moet elke oliepyp, wat nie 'n oliedrukpyp is nie, van staal wees en op so 'n hoogte bokant die skip se binne-bodem, as daar een is, gevoer word dat dit die ondersoek en herstel van die pyp sal vergemaklik. Elke sodanige pyp en las daarin, en elke inrigting wat verbind is met so 'n pyp, moet in staat wees om 'n toets met hidroliese druk tot 50 pond per vierkant duim of tot twee keer sy maksimum werkdruk, wat ookal die grootste is, te weerstaan.

(10) In elke skip moet elke stoomverhittingspyp wat in aanraking met olie mag wees, van staal wees en tesame met sy lasse moet dit in staat wees om 'n toets met hidroliese druk tot twee keer sy maksimum werkdruk te weerstaan.

(11) In elke skip moet elke suigpyp van enige oliebrandstoftenk wat bokant 'n binnebodem geleë is en elke oliebrandstof-nivelleerpyp in 'n stoomketelkamer of enjinkamer toegerus wees met 'n klep of kraan bevestig aan elke tenk waaraan die pyp verbind is. Elke sodanige klep of kraan wat aan 'n oliebrandstof-suigpyp aangebring is, moet so ingerig word dat dit gesluit kan word vanaf die afdeling waarin dit geleë is sowel as van 'n redelik toeganklike plek buitekant sodanige afdeling en wat nie maklik in die geval van brand in daardie afdeling, afgesny

(2) Every oil fuel tank in the ship shall be properly constructed and shall be provided with save-alls or gutters which will catch any oil which may leak from the tank. No such tank shall be situated directly above boilers or other heated surfaces. Without prejudice to the generality of the foregoing, every such tank shall be capable of withstanding a test by hydraulic pressure in the case of a storage tank, settling tank or service tank, equal to that of a head of water one foot greater than the greatest head to which the tank may be subject when in service, but in the case of a settling tank, to not less than 15 pounds per square inch.

(3) The oil fuel carried in the ship shall be effectively isolated from water ballast which may be carried therein. The pumping arrangements shall be such as will permit the oil fuel to be transferred from any storage tank or settling tank appropriated for oil fuel into any other storage tank or settling tank so appropriated. Provision shall be made to prevent the accidental discharge or overflow of oil overboard. If fresh water is stored in a tank adjacent to a tank appropriated for the storage of oil fuel, a cofferdam shall be provided which will prevent contamination of the fresh water by the oil.

(4) In every ship efficient means shall be provided for sounding every oil fuel tank therein and to prevent overpressure in such tank.

(5) In every ship, an air pipe shall be led from every oil fuel tank to the open air, and the outlet thereof shall be in such a position that there will be no danger of fire or explosion resulting from the emergence of oil vapour from the pipe when the tank is being filled. Every such pipe shall be fitted with a detachable wire gauze diaphragm. If such pipe also serves as an overflow pipe, provision shall be made which will prevent the overflow from running into or near a boiler room, galley or other place in which it might be ignited.

(6) Every drain provided in the ship for the purpose of removing water from oil fuel in storage or settling tanks or in separators, shall be of the self-closing type.

(7) The oil fuel filling stations in every ship shall be isolated from other spaces in the ship and shall be efficiently drained and ventilated. Provision shall be made which will prevent overpressure in any oil-filling pipe lines.

(8) In every ship, every oil pressure pipe shall be made of seamless steel, and, if used for conveying heated oil, shall be situated in a conspicuous position above the platforms in well-lighted parts of the boiler room or engine room. Every such pipe and joint therein and every fitting connected to such pipe, shall be capable of withstanding a test by hydraulic pressure to 400 pounds per square inch or to twice its maximum working pressure, whichever shall be the greater.

(9) In every ship, every oil pipe, not being an oil pressure pipe, shall be made of steel and shall be led at such a height above the ship's inner bottom, if any, as will facilitate the inspection and repair of the pipe. Every such pipe and joint therein, and every fitting connected to such pipe, shall be capable of withstanding a test by hydraulic pressure to 50 pounds per square inch or to twice its maximum working pressure, whichever shall be the greater.

(10) In every ship, every steam heating pipe which may be in contact with oil shall be made of steel and, together with its joints, shall be capable of withstanding a test by hydraulic pressure to twice its maximum working pressure.

(11) In every ship, every suction pipe from any oil fuel tank situated above an inner bottom, and every oil fuel levelling pipe within a boiler room or engine room shall be fitted with a valve or cock secured to each tank to which the pipe is connected. Every such valve or cock fitted to an oil fuel suction pipe shall be so arranged that it may be closed both from the compartment in which it is situated and from readily accessible position outside such compartment and not likely to be cut off in the event of fire in that compartment. Every such valve

sal word nie. Elke sodanige klep of kraan wat aan 'n oliebrandstof-nivelleerpyp aangebring is, moet so ingerig wees dat dit gesluit of oopgemaak kan word vanaf 'n redelik toeganklike plek bo die beskotdek en wat nie maklik deur brand in die afdeling waarin die pyp geleë is afgesny sal word nie. Indien enige olietenkvulpyp nie by of naby die bokant van die tenk met 'n oliebrandstoftenk verbind is nie, moet dit voorsien word van 'n terugslagklep of 'n klep of kraan bevestig aan die tenk waaraan dit verbind is, en so ingerig word dat dit beide vanaf die afdeling waarin dit geleë is en van 'n geredelik toeganklike posisie buitekant sodanige afdeling gesluit kan word en nie maklik in die geval van brand in daardie afdeling afgesny sal word nie.

(12) In elke skip moet elke hoofpyp by die oondplate wat die oliebrandstoftoevoer na stelle branders beheer, van die tipe wees wat vinnig sluit, en in 'n opvallend en geredelik toeganklike plek aangebring word. Voorsiening moet gemaak word om te voorkom dat olie na enige brander gelei word tensy sodanige brander korrek verbind is met die olietoevoerleiding.

(13) In elke skip moet elke klep wat in verband met die oliebrandstof-installasie gebruik word so ontwerp en gebou wees dat dit voorkom dat die bekleding van die klepkas laatskiet of losgaan wanneer die klep in werking is.

(14) In elke skip moet elke pomp voorsien vir gebruik in verband met die oliebrandstofstelsel geskei word van die skip se toevoerpompe, lenspompe en ballaspompe en van die verbindings van enige sodanige pompe, en voorsien word van 'n doeltreffende ontlasklep wat in geslote kringbaan moet wees. Voorsiening moet gemaak word waardeur elke oliebrandstofdrukpomp en lenspomp vanaf 'n posisie buitekant die afdeling waarin sodanige pomp geleë is, afgeskakel kan word.

(15) Elke skip moet voorsien wees van minstens twee oliebrandstof-eenhede elkeen wat bestaan uit 'n drukpomp, filters en 'n verhitter. Sodanige pomp, filters en verhitters moet doeltreffend ontwerp en stewig gebou wees. Voorsiening moet gemaak word om oorlading in enige deel van die oliebrandstof-eenhede te voorkom. Die dele van sodanige oliebrandstof-eenhede wat aan oliedruk onderhewig is, en die lasse daarvan, moet in staat wees om 'n toets met hidroliese druk tot 400 pond per vierkant duim of twee keer hulle maksimum werkdruk, wat ookal die grootste is, te weerstaan. Enige ontlaskleppe wat aangebring is om oorlading in die oliebrandstofverhitter te verhoed, moet in geslote kringbaan wees. Indien stoom gebruik word om oliebrandstof in bunkers, tenks, verhitters of afskeiers in enige so 'n skip te verhit, moet afvoerkanale voorsien word om die kondensasiewater in 'n waarnemingstenk in te laat.

(16) In elke skip moet lekbakke of geute onder elke oliebrandstof-pomp, filter en verhitter voorsien word om enige olie wat daaruit mag lek of gemors word, op te vang. Lekbakke of geute moet by die oondopenings voorsien word om olie wat van die branders kan ontsnap, op te vang. Voorsiening moet gemaak word om te verhoed dat olie wat van enige oliebrandstofpomp, filter of verhitter ontsnap, met stoomketels of ander verhitte oppervlaktes in aanraking kom.

(17) Elke oliebrandstof-afskeier in die skip moet doeltreffend ontwerp en stewig gebou wees. Voorsiening moet gemaak word om oorlading in enige deel daarvan, en die uitlating van oliedamp in beperkte ruimtes, te voorkom.

(18) Indien, in enige skip wat aangedryf word met behulp van stoomketels wat met olie gestook word, dempers aan die skoorsteenpype of stoomketels aangebring word, moet voorsiening gemaak word om die dempers in die oop posisie te bevestig, en 'n aanwyser moet voorsien word om aan te toon of die dempers oop of toe is.

(19) Vir die toepassing van hierdie regulasie sluit die uitdrukking „oliebrandstoftenk" 'n oliebrandstofopbergingstenk, 'n oliebrandstof-besinktenk, 'n oliebrandstof-dienstenk en 'n oliebrandstof-oorlooptenk in.

or cock fitted to an oil fuel levelling pipe shall be so arranged that it can be closed or opened from a readily accessible position above the bulkhead deck and not likely to be cut off by a fire in the compartment in which the pipe is situated. If any oil tank filling pipe is not connected to an oil fuel tank at or near the top of the tank, it shall be fitted with a non-return valve or with a valve or cock secured to the tank to which it is connected and so arranged that it may be closed both from the compartment in which it is situated and from a readily accessible position outside such compartment and not likely to be cut off in the event of fire in that compartment.

(12) In every ship every master valve at the furnace fronts which controls the supply of oil fuel to sets of burners shall be of a quick-closing type, and fitted in a conspicuous position and readily accessible. Provision shall be made to prevent oil from being turned on to any burner unless such burner has been correctly coupled up to the oil supply line.

(13) In every ship, every valve used in connection with the oil fuel installation shall be so designed and constructed as to prevent the cover of the valve chest being slackened back or loosened when the valve is operated.

(14) In every ship, every pump provided for use in connection with the oil fuel system shall be separate from the ship's feed pumps, bilge pumps and ballast pumps and the connections of any of such pumps, and shall be provided with an efficient relief valve which shall be in close circuit. Provision shall be made by which every oil fuel pressure pump and transfer pump may be stopped from a position outside the compartment in which such pump is situated.

(15) Every ship shall be provided with not less than two oil fuel units, each comprising a pressure pump, filters and a heater. Such pump, filters and heater shall be of efficient design and substantial construction. Provision shall be made which will prevent overpressure in any part of the oil fuel units. The parts of such oil fuel units which are subject to oil pressure, and the joints thereof, shall be capable of withstanding a test by hydraulic pressure to 400 pounds per square inch or twice their maximum working pressure, whichever shall be the greater. Any relief valves fitted to prevent overpressure in the oil fuel heater shall be in close circuit. If steam is used for heating oil fuel in bunkers, tanks, heaters or separators in any such ship, exhaust drains shall be provided to discharge the water of condensation into an observation tank.

(16) In every ship, save-alls or gutters shall be provided under every oil fuel pump, filter and heater to catch any oil which may leak or be spilled therefrom. Save-alls or gutters shall be provided in way of the furnace mouths to catch oil which may escape from the burners. Provision shall be made which will prevent oil which may escape from any oil fuel pump, filter or heater from coming into contact with boilers or other heated surfaces.

(17) Every oil fuel separator in the ship shall be of efficient design and substantial construction. Provision shall be made which will prevent overpressure in any part thereof, and which will prevent the discharge of oil vapour therefrom into confined spaces.

(18) If, in any ship, being a ship propelled by means of oil-fired boilers, dampers are fitted to the funnels or boilers, provision shall be made for securing the dampers in the open position, and an indicator shall be provided to show whether the dampers are open or shut.

(19) For the purposes of this regulation the expression "oil fuel tank" includes an oil fuel storage tank, an oil fuel settling tank, an oil fuel service tank and an oil fuel overflow tank.

75. OLIEBRANDSTOF-INSTALLASIES (STOWE).

(1) Indien, in enige skip, 'n stoof van brandstof voorsien word vanaf 'n olietenk, mag die tenk nie in die skeepskombuis geleë wees nie, en die olietoevoer na die branders moet in staat wees om vanaf 'n posisie buite die skeepskombuis beheer te word. Geen stoof of branders wat ontwerp is om deur middel van oliebrandstof te werk en 'n ontbrandingspunt van minder as 150° F. (65·6° C.) het, mag aangebring word nie.

(2) Die tenk moet voorsien wees van 'n lugpyp wat na die buitelug lei. Die pyp moet in so 'n posisie wees dat daar geen gevaar sal wees van brand of ontploffing wat ontstaan weens die ontsnapping van oliedamp uit die pyp wanneer die tenk gevul word nie. Die pyp moet voorsien wees van 'n afneembare draadgaasdiafragma.

(3) Doeltreffende middels moet voorsien word om elke tenk waarna in paragraaf (1) verwys word, te vul en om oorlading daarin te voorkom.

76. VENTILASIE.

In elke skip moet elke ruim waarin 'n oliebrandstoftenk of enige deel van 'n oliebrandstofinstallasie geleë is, voldoende geventileer word.

77. STUURINRIGTING.

(1) Elke skip moet voorsien word van 'n doeltreffende hoof- en hulpstuurinrigting: Met die voorbehoud dat 'n hulpstuurinrigting nie vereis sal word nie indien die skip se hoofstuurinrigting toegerus is met dubbele krageenhede en dubbele verbindings tot by die roerkoning.

(2) Die hulpstuurinrigting moet in staat wees om snel in aksie gestel te kan word en dit moet sterk genoeg wees, en voldoende krag hê sodat die skip teen 'n bevaarbare spoed gestuur kan word. Die hulpstuurinrigting moet kragaangedrewe wees in enige skip wat toegerus is met 'n roerkoning met 'n deursnee van meer as nege duim by die roerpen.

(3) Middels moet in elke skip aangebring word deur middel waarvan die skip van 'n posisie agter in die skip gestuur kan word.

78. VOORRADE, SPAARUITRUSTING EN GEREEDSKAP

Elke skip van Klasse I, II en IIA moet voorsien word van sulke voorrade, spaaruitrusting en gereedskap as wat voldoende is met inagneming van die voorgenome diens van die skip, ten einde handherstelwerk aan die skip se stoomketels en masjinerie moontlik te maak terwyl die skip op see is.

HOOFSTUK VII.—DIVERSE BEPALINGS.

79. TOEPASSING VAN HOOFSTUK VII.

Hierdie hoofstuk is op elke skip van toepassing.

80. KOMPASSE.

(1) (a) Elke skip van Klas I moet voorsien wees van drie doeltreffende magnetiese kompasse op die middellyn van die skip. Een van hierdie kompasse moet voorsien word vir gebruik as 'n stuurkompas en aangebring word by die gewone stuurplek, 'n tweede kompas moet voorsien word vir gebruik as 'n standaardkompas en aangebring word naby die gewone stuurplek op 'n plek waarvandaan die uitsig op die horison die minste belemmer is, en 'n derde sodanige kompas moet aangebring word by die agterstuurplek en moet, tesame met sy beueleenhede, met die stuurkompas verwisselbaar wees.

Met dienverstande dat 'n magnetiese stuurkompas nie vereis word nie indien—

(i) die standaardkompas van die reflektor- of projektortipe is en toegerus is met 'n toestel sodat dit vanaf die gewone stuurplek gelees kan word;

(ii) die standaardkompas met die agterstuurkompas verwisselbaar is; en

(iii) 'n kaart van 'n girokompas of van 'n herhaler daarvan vanaf die gewone stuurplek gelees kan word.

75. OIL FUEL INSTALLATIONS (COOKING RANGES).

(1) If, in any ship, a cooking range is supplied with fuel from an oil tank, the tank shall not be situated in a galley, and the supply of oil to the burners shall be capable of being controlled from a position outside the galley. No range or burners shall be fitted which are designed to be operated by means of oil fuel having a flash point of less than 150° F. (65·6° C.).

(2) The tank shall be provided with an air pipe leading to the open air. The pipe shall be in such a position that there will be no danger of fire or explosion resulting from the emergence of oil vapour from the pipe when the tank is being filled. The pipe shall be fitted with a detachable wire gauze diaphragm.

(3) Efficient means shall be provided for filling every tank referred to in paragraph (1) and for preventing overpressure therein.

76. VENTILATION.

In every ship, every space in which an oil fuel tank or any part of an oil fuel installation is situated, shall be adequately ventilated.

77. STEERING GEAR.

(1) Every ship shall be provided with efficient main and auxiliary steering gear: Provided that auxiliary steering gear shall not be required if the ship's main steering gear is fitted with duplicate power units and duplicate connections up to the rudder stock.

(2) The auxiliary steering gear shall be capable of being rapidly brought into action and shall be of adequate strength, and of sufficient power to enable the ship to be steered at a navigable speed. The auxiliary steering gear shall be operated by power in any ship which is fitted with a rudder stock of over 9 inches in diameter in way of the tiller.

(3) In every ship means shall be provided by which the ship can be steered from a position aft.

78. STORES, SPARE GEAR AND TOOLS.

Every ship of Classes I, II and IIA shall be provided with such stores, spare gear and tools as are sufficient, having regard to the intended service of the ship, to enable running repairs to the ship's boilers and machinery to be made while the ship is at sea.

CHAPTER VII.—MISCELLANEOUS.

79. APPLICATION OF CHAPTER VII.

This Chapter applies to every ship.

80. COMPASSES.

(1) (*a*) Every ship of Class I shall be provided with three efficient magnetic compasses which shall be sited on the ship's centre line. One of such compasses shall be provided for use as a steering compass and shall be sited at the normal steering position, and another shall be provided for use as a standard compass and shall be sited near to the normal steering position and in a position from which the view of the horizon is least obstructed. A third such compass shall be provided at the after steering position, and shall, together with its gimbal units, be interchangeable with the steering compass.

Provided that a magnetic steering compass shall not be required if—

(i) the standard compass is of the reflector or projector type and is equipped with a device by which it may be read from the normal steering position;

(ii) the standard compass is interchangeable with the after steering compass; and

(iii) a card of a gyroscopic compass or of a repeater thereof can be read from the normal steering position.

(*b*) Elke magnetiese kompas wat in so 'n skip aangebring word, moet in 'n kompashuis opgestel word: Met dien verstande dat die agterstuurkompas op 'n voetstuk opgestel kan word.

(2) (*a*) Elke skip van Klasse II en IIA moet voorsien word van twee doeltreffende magnetiese kompasse op die skip se middellyn, waarvan een van die projektor-reflektor- of -sendertipe mag wees indien dit in staat is om as 'n gewone magnetiese kompas gebruik te word wanneer die elektriese krag buite werking raak.

(*b*) Een magnetiese kompas moet voorsien word vir gebruik as 'n standaardkompas en aangebring word naby die gewone stuurplek op 'n plek waarvandaan die uitsig op die horison die minste belemmer is.

(*c*) Die tweede magnetiese kompas moet voorsien word vir gebruik as 'n stuurkompas en aangebring word by die gewone stuurplek: Met dien verstande dat die projekteerde of reflekteerde beeld van 'n magnetiese kompas, girokompas of 'n herhaler van 'n girokompas vir hierdie doel voorsien mag word, in welke geval die tweede magnetiese kompas aangebring mag word in 'n kompashuis of op 'n voetstuk by die agterstuurplek.

(3) Elke skip van Klas VI moet voorsien word van een doeltreffende magnetiese kompas wat geredilk by die gewone stuurplek beskikbaar is.

(OPMERKING.—Die aandag word gevestig op regulasie 96 ingevolge waarvan 'n skip van die vereiste van hierdie paragraaf vrygestel kan word.)

81. DIEPLODINGSTOESTELLE.

(1) Elke skip van Klasse I, II en IIA moet toegerus word met 'n doeltreffende meganiese dieplodingstoestel en genoeg vervangdele, met die oog op die tipe toestel en die diens waarvoor die skip bedoel is, om die toestel in werkende orde te hou terwyl die skip op see is: Met dien verstande dat 'n meganiese dieplodingstoestel nie vereis word in enige skip van Klas II of IIA wat onder 1,600 bruto-registerton is nie.

(2) Elke skip van Klasse I, II en IIA moet toegerus word met twee handloodlyne, elk minstens 25 vadems lank en elk met 'n lood wat minstens sewe pond weeg.

(OPMERKING.—Die aandag word gevestig op regulasie 97 ingevolge waarvan 'n skip van die vereistes van hierdie regulasie vrygestel kan word.)

82. ANKERS EN ANKERKETTINGS.

Elke skip moet toegerus wees met sodanige ankers en ankerkettings wat voldoende is ten opsigte van aantal, gewig en sterkte, met inagneming van die grootte van die skip en die diens waarvoor dit bedoel word.

83. TROSSE EN VERHAALTOUE.

Elke skip moet toegerus wees van sodanige trosse en verhaaltoue wat voldoende is ten opsigte van aantal en sterkte, met inagneming van die grootte van die skip en die diens waarvoor dit bedoel word.

84. NOODUITGANGE.

(1) Elke skip wat nie 'n oop of gedeeltelik gedekte skip van Klas VI is nie, moet voorsien wees van sodanige deure, trappe, lere en ander nooduitgange wat geredelik toeganklike nooduitgange vir alle persone aan boord die skip sal verskaf. Die nooduitgange moet so ontwerp en gebou wees dat hulle geredelik deur die persone vir wie hulle bedoel is, gebruik kan word. Die getal en wydte van sulke nooduitgange moet voldoende wees, met inagneming van die getal persone deur wie hulle gebruik mag word en mag nie deur 'n deur gaan wat volgens die vereistes van hierdie Deel waterdig moet wees nie.

(2) In elke skip van Klasse I, II en IIA moet daar tenminste twee nooduitgange verskaf word in elke gedeelte van 'n tussendek bokant die beskotdek wat in die hoofvertikale sone val, en een van die nooduitgange wat in elk so 'n gedeelte voorsien word, moet toegang verleen tot 'n trap wat opwaarts lei vanaf die tussendek: met die voorbehoud dat in skepe van Klas I daar nie vereis word dat die nooduitgange vanaf die reddingsbootdek toegang verleen tot 'n trap wat opwaarts lei vanaf daardie dek nie.

(*b*) Every magnetic compass provided in such a ship shall be mounted in a binnacle: Provided that the after steering compass may be mounted on a pedestal.

(2) (*a*) Every ship of Classes II and IIA shall be provided with two efficient magnetic compasses sited on the ship's centre line, of which one may be of the projector reflector or transmitting type if it is capable of being used as a normal magnetic compass on failure of the electrical power.

(*b*) One magnetic compass shall be provided for use as a standard compass and shall be sited near to the normal steering position and in a position from which the view of the horizon is least obstructed.

(*c*) The second magnetic compass shall be provided for use as a steering compass and shall be sited at the normal steering position: Provided that the projected or reflected image of a magnetic compass, gyro compass, or a repeater from a gyro compass may be provided for this purpose in which case the second magnetic compass may be sited in a binnacle or on a pedestal at the after steering position.

(3) Every ship of Class VI shall be provided with one efficient magnetic compass which shall be readily available at the normal steering position.

(NOTE.—Attention is invited to regulation 96 in terms of which a ship may be exempted from the requirements of this paragraph.)

81. DEPTH-SOUNDING DEVICES.

(1) Every ship of Classes I, II and IIA shall be provided with an effective mechanical depth-sounding device, and with such spare parts as are sufficient, having regard to the type of the device and to the intended service of the ship, to enable the device to be maintained in working order while the ship is at sea: Provided that a mechanical depth-sounding device shall not be required in any ship of Class II or IIA which is under 1,600 gross register tons.

(2) Every ship of Classes I, II and IIA shall be provided with two hand lead-lines, each at least 25 fathoms long, and each with a lead weighing at least 7 pounds.

(NOTE.—Attention is invited to regulation 97 in terms of which a ship may be exempted from the requirements of this regulation.)

82. ANCHORS AND CHAIN CABLES.

Every ship shall be provided with such anchors and chain cables as are sufficient in number, weight and strength, having regard to the size and intended service of the ship.

83. HAWSERS AND WARPS.

Every ship shall be provided with such hawsers and warps as are sufficient in number and strength, having regard to the size and intended service of the ship.

84. MEANS OF ESCAPE.

(1) Every ship, not being an open or partially-decked ship of Class VI, shall be provided with such doorways, stairways, ladderways and other means of escape as will provide readily accessible means of escape for all persons in the ship. The means of escape shall be so designed and constructed as to be capable of being easily used by the persons for whom they are intended. The number and width of such means of escape shall be sufficient, having regard to the number of persons by whom they may be used and shall not pass through any doorway which may be closed by a door required by this Part to be watertight.

(2) In every ship of Classes I, II and IIA, at least two of the means of escape shall be provided in each portion of a between decks above the bulkhead deck falling within a main vertical zone, and one of the means of escape provided in each such portion shall give access to a stairway leading upwards from the between decks: Provided that in ships of Class I the means of escape from the lifeboat embarkation deck shall not be required to give access to a stairway leading upwards from that deck.

(3) In elke skip van Klas I moet die nooduitgange lei na die reddingsbootinskepingsdek.

(4) In elke skip van Klasse II en IIA moet die nooduitgange na die reddingsbootinskepingsdek en na 'n oop dek met voldoende oppervlakte lei, met inagneming van die getal persone wat die skip mag vervoer.

(5) In elke skip van Klas VI wat nie 'n oop of gedeeltelik gedekte skip is nie, moet die nooduitgange lei na 'n oopdek waarvan die oppervlakte voldoende is, met inagneming van die getal persone wat die skip mag vervoer.

(6) Elke skip van Klas VI wat nie 'n oop of gedeeltelik gedekte skip is nie, moet voorsien wees van geredelik toeganklike nooduitgange vanaf alle ingeslote ruimtes in die skip. Sulke nooduitgange moet voldoende wees ten opsigte van getal en wydte met inagneming van die getal persone wat in genoemde ruimtes mag wees.

85. Relingwerk, stutte en verskansings.

(1) In elke skip moet verskansings of relingwerk voorsien word op elke dek waartoe enige persoon toegang mag hê. Sulke verskansings of relingwerk, tesame met stutte wat die relingwerk steun, moet sodanig geleë, ontwerp en gebou wees, en in besonder so hoog bokant die dek wees dat dit kan verhoed dat enige persoon wat toegang tot die dek mag hê per ongeluk daarvan kan afval. Enige waterafvoerpoorte wat in so 'n verskansing aangebring word moet moet deur 'n rooster of tralies bedek wees wat sal verhoed dat enige persoon deur die afvoerpoort val.

(2) In elke oop of gedeeltelik gedekte skip van Klas VI moet elke spoelgang, dekplank en luikhoof so geleë, ontwerp en gebou wees, en in besonder so hoog bokant die vloerplanke wees, dat dit verhoed dat enige persoon per ongeluk oorboord val.

HOOFSTUK VIII.—GELYKWAARDIGHEDE EN VRYSTELLINGS.

86. Gelykwaardighede.

Waar hierdie Deel vereis dat die romp of masjinerie van 'n skip op 'n bepaalde wyse gebou moet wees, of dat bepaalde uitrusting verskaf moet word, of bepaalde voorsiening gemaak moet word, kan die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) toelaat dat die romp of masjinerie van die skip op enige ander wyse gebou word, of enige ander uitrusting verskaf word of ander voorsiening gemaak word, indien hy tevrede is dat daardie ander konstruksie of uitrusting, of ander voorsiening, minstens net so doeltreffend is as die wat deur hierdie Deel vereis word.

87. Algemene vrystelling.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan vrystelling verleen aan enige skip wat gebou is voor die datum van inwerkingtreding van hierdie Deel, wat nie 'n skip is wat op of na daardie datum vir diens as 'n passasierskip omskep is nie, van die vereistes van hierdie Deel in die mate waartoe hy tevrede is dat voldoening daaraan onredelik of onprakties is onder die omstandighede.

88. Vrystelling ten opsigte van putte wat in dubbele bodems gebou is.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan 'n skip vrystel van die vereistes van paragraaf (4) van regulasie 9 ten opsigte van enige put wat hy tevrede is dat dit nie die beskerming sal verminder wat deur die dubbele bodem gebied word nie.

89. Vrystelling ten opsigte van die aanbring van dubbele bodems.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan enige skip van Klas II of IIA vrystel van die vereistes van regulasie 9 ten opsigte van 'n dubbele bodem in enige gedeelte van die skip wat ingedeel is deur die

(3) In every ship of Class I the means of escape shall lead to the lifeboat embarkation deck.

(4) In every ship of Classes II and IIA, the means of escape shall lead to the lifeboat embarkation deck and to an open deck of sufficient area, having regard to the number of persons whom the ship may carry.

(5) In every ship of Class VI, not being an open or partially-decked ship, the means of escape shall lead to an open deck of sufficient area, having regard to the number of persons whom the ship may carry.

(6) Every ship of Class VI, being an open or partially-decked ship, shall be provided with readily accessible means of escape from all enclosed spaces in the ship. Such means of escape shall be sufficient in number and width, having regard to the number of persons who may be in the said spaces.

85. Guard Rails, Stanchions and Bulwarks.

(1) In every ship, bulwarks or guard rails shall be provided on every deck to which any persons may have access. Such bulwarks or guard rails, together with stanchions supporting the guard rails, shall be so placed, designed and constructed, and in particular shall be of such a height above the deck, as to prevent any person who may have access to that deck from accidentally falling therefrom. Any freeing ports fitted in such a bulwark shall be covered by a grid or bars which will prevent any person from falling through the port.

(2) In every open or partially-decked ship of Class VI, every washstrake covering board and coaming shall be so placed, designed and constructed and in particular shall be of such a height above the floorboards as to prevent any person from accidentally falling overboard.

CHAPTER VIII.—EQUIVALENTS AND EXEMPTIONS.

86. Equivalents.

Where this Part requires that the hull or machinery of a ship shall be constructed in a particular manner, or that particular equipment shall be provided, or particular provision shall be made, the Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may allow the hull or machinery of the ship to be constructed in any other manner, or any other equipment to be provided or other provision made, if he is satisfied that that other construction or equipment, or other provision, is at least as effective as that required by this Part.

87. General Exemption.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt any ship which was constructed before the date of coming into operation of this Part, not being a ship converted on or after that date for service as a passenger ship, from the requirements of this Part to the extent to which he is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.

88. Exemptions in Respect of Wells Constructed in Double Bottoms.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt a ship from the requirements of paragraph (4) of regulation 9 in respect of any well which he is satisfied will not diminish the protection given by the double bottom.

89. Exemption in Respect of the Fitting of Double Bottoms.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt any ship of Class II or IIA from the requirements of regulation 9 in respect of a double bottom in any portion of the ship which is subdivided by application

toepassing van 'n indelingsfaktor van nie meer as 0·5 nie, indien hy tevrede is dat die aanbring van 'n dubbele bodem in daardie gedeelte van die skip bestaanbaar is met die ontwerp en behoorlike werking van die skip.

90. VRYSTELLING TEN OPSIGTE VAN OPENINGS IN DIE HUIDBEPLATING ONDERKANT DIE INDOMPELINGSGRENSLYN.

Die Sekretaris kan enige Hoofstuk II-skip van Klas VI van die vereistes van paragraaf (8) van regulasie 17 vrystel insoverre hy tevrede is dat voldoening daaraan onredelik of onprakties is onder die omstandighede.

91. VRYSTELLING VAN DIE VEREISTES VAN HOOFSTUK V VAN HIERDIE DEEL.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan enige skip—

(*a*) van Klas I, II of IIA wat nie meer as 36 passasiers vervoer nie, vrystel van die vereistes van regulasies 47 tot en met 54 en 56 tot en met 60, indien hy tevrede is dat die skip toegerus is met 'n doeltreffende brandopsporingstelsel wat in staat is om 'n sigbare en hoorbare alarmteken by een of meer plekke in die skip te gee sodat dit snel onder die aandag van die gesagvoerder en die bemanning van die skip gebring word, wat die teenwoordigheid en plek sal aandui van enige brand in enige verblyf- of diensruimte, behalwe 'n ruimte wat volgens die mening van die Minister of Sekretaris (wat ookal die geval is) geen wesenlike gevaar van brand inhou nie;

(*b*) van Klas II of IIA, van die vereistes van Hoofstuk V (regulasies 43 tot en met 60) vrystel in soverre hy tevrede is dat voldoening daaraan onredelik of onprakties is weens die voorgenome diens van die skip.

92. VRYSTELLING BETREFFENDE AFDELINGS VAN DIE „ A " EN „ B " KLAS.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan enige skip van die vereistes van regulasie 44 in verband met isolering vrystel in soverre hy tevrede is dat voldoening daaraan onnodig is met inagneming van die graad van brandgevaar wat bestaan.

93. VRYSTELLING TEN OPSIGTE VAN DIE BOU VAN DIE SKIP.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan—

(*a*) enige skip geheelenal of gedeeltelik vrystel van die vereistes van paragraaf (1) van regulasie 45, indien hy tevrede is dat die romp, bobou, boubeskotte, dek en dekhuise van die skip gebou is van materiaal wat ewe bestand is teen vuur;

(*b*) enige skip vrystel van die vereistes van paragrawe (2) en (3) van regulasie 45 in soverre hy tevrede is dat voldoening daaraan onverenigbaar is met die doel waarvoor die skip ontwerp is en dat ander ewe doeltreffende metodes van beskerming teen brand in die skip aangewend is.

94. VRYSTELLING TEN OPSIGTE VAN TRAPPE.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan enige skip waarin Metode II van beskerming teen brand binne die betekenis van regulasie 56 aangewend is, vrystel van die vereistes van paragraaf (1) van regulasie 48 met betrekking tot enige trap wat hy tevrede is 'n hulptrap is wat voldoende deur sproeiers beskerm word.

95. VRYSTELLING TEN OPSIGTE VAN OUTOMATIESE BRANDALARM-, BRANDOPSPORING- EN SPROEIERSTELSELS.

Die Minister (of Sekretaris in die geval van 'n skip wat nie boedel is om op internasionale reise gebruik te word nie) kan enige skip vrystel—

(*a*) van die vereistes van regulasie 85, in soverre hy tevrede is dat die verblyfruimtes en diensruimtes daarin geen wesenlike gevaar van brand bied nie;

of a factor of subdivision not exceeding 0·5, if he is satisfied that the fitting of a double bottom in that portion of the ship would not be compatible with the design and proper working of the ship.

90. EXEMPTION IN RESPECT OF OPENINGS IN THE SHELL PLATING BELOW THE MARGIN LINE.

The Secretary may exempt any Chapter II ship of Class VI from the requirements of paragraph (8) of regulation 17 to the extent to which he is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.

91. EXEMPTION FROM THE REQUIREMENTS OF CHAPTER V OF THIS PART.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt any ship—

(*a*) of Class I, II or IIA carrying not more than 36 passengers, from the requirements of regulations 47 to 54 inclusive and 56 to 60 inclusive, if he is satisfied that the ship is fitted with an efficient fire detection system capable of giving a visible and audible alarm signal at one or more points in the ship so as to come rapidly to the notice of the master and crew of the ship, which will indicate the presence and position of any fire in any accommodation space or service space, other than a space which in the opinion of the Minister or Secretary (as the case may be) affords no substantial fire risk;

(*b*) of Class II or IIA, from the requirements of Chapter V (regulations 43 to 60 inclusive) to the extent to which he is satisfied that compliance therewith is unreasonable or impracticable by reason of the intended service of the ship.

92. EXEMPTION CONCERNING " A " AND " B " CLASS DIVISIONS.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt any ship from the requirements of regulation 44 relating to insulation to the extent to which he is satisfied that compliances therewith is unnecessary having regard to the degree of fire hazard present.

93. EXEMPTION IN RESPECT OF STRUCTURE OF SHIP.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may—

(*a*) exempt any ship wholly or in part from the requirements of paragraph (1) of regulation 45, if he is satisfied that the hull, superstructure, structural bulkheads, deck and deckhouses of the ship are constructed of material equally resistant to fire;

(*b*) exempt any ship from the requirements of paragraphs (2) and (3) of regulation 45 to the extent to which he is satisfied that compliance therewith is incompatible with the purpose for which the ship is designed and that other equally effective methods of fire protection have been adopted in the ship.

94. EXEMPTION IN RESPECT OF STAIRWAYS.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt any ship in which Method II of fire protection within the meaning of regulation 56 has been adopted, from the requirements of paragraph (1) of regulation 48 in relation to any stairway which he is satisfied is an auxiliary stairway adequately protected by sprinklers.

95. EXEMPTION IN RESPECT OF AUTOMATIC FIRE ALARM, FIRE DETECTION AND SPRINKLER SYSTEMS.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt any ship—

(*a*) from the requirements of regulation 58, to the extent to which he is satisfied that the accommodation spaces and service spaces therein afford no substantial fire risk;

(*b*) van die vereistes van regulasie 59—

(i) in soverre hy tevrede is dat die verblyfruimtes en diensruimtes daarin geen wesenlike gevaar van brand bied nie;

(ii) ten opsigte van enige bagasiekamer of voorraadkamer wat hy tevrede is, voorsien is van voldoende inrigtings vir die opsporing van brand of vir die smoor van vuur deur middel van gas of stoom.

96. VRYSTELLING TEN OPSIGTE VAN KOMPASSE.

Die Sekretaris kan enige skip van Klas VI van die vereistes van paragraaf (3) van regulasie 80 vrystel indien hy tevrede is dat voldoening aan sodanige vereistes onredelik of onprakties sou wees weens die skip se bou of voorgenome diens.

97. VRYSTELLING TEN OPSIGTE VAN DIEPTELODINGSTOESTELLE.

Die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is om op internasionale reise gebruik te word nie) kan enige skip van die vereistes van regulasie 81 vrystel indien hy tevrede is dat voldoening daaraan onredelik of onnodig is in die omstandighede.

DEEL II.

(Vissersbote, robbevaarders en walvisvaarders met landbasis.)

HOOFSTUK I.—ALGEMEEN.

98. WOORDBETEKENIS.

In hierdie Deel beteken die uitdrukking „die Wet" die Handelskeepvaartwet, 1951 (Wet No. 57 van 1951) en, tensy uit die samehang anders blyk, het enige uitdrukking waaraan daar in die Wet 'n betekenis toegeken is, wanneer dit in hierdie Deel gebruik word, die aldus toegekende betekenis, en beteken—

„boot", 'n vissersboot, robbevaarder, of walvisvaarder met landbasis waarop hierdie Deel ingevolge regulasie 99 van toepassing is;

„gebou, voor of na enige datum", dat die kiel van die boot waarna verwys word, voor of na daardie datum gelê is, wat die geval ookal mag wees;

„bemanningsruimte", akkommodasie vir die bemanning;

„gelling", 'n Britse gellingmaat;

„lengte", geregistreerde lengte;

„ongeklassifiseerde boot", 'n boot wat nie gebou of gereeld volgens die vereistes van 'n erkende klassifikasievereniging ondersoek is nie.

[OPMERKING.—Artikel *twee* van die Wet sluit die volgende woordbepalings in:—

„Akkommodasie vir die bemanning", ook slaapkamers, pakkamers, skeepskombuise, eetkamers, sanitêre akkommodasie, hospitale en ruimtes vir ontspanning vir gebruik deur of tot voordeel van seelui of leerling-offisiere;

„vissersboot", 'n skip wat vir gewin ter see visvang, maar dit omvat geen robbevaarder of walvisvaarder nie;

*„bevoegde beampte", die beampte wat deur die Minister aangewys is as die bevoegde beampte by die plek en ten opsigte van die saak waarna verwys word in die bepaling in hierdie Wet waarin die uitdrukking voorkom;

„robbevaarder", 'n skip wat uitsluitend vir robbevangs gebruik word;

„Sekretaris", die Sekretaris van Vervoer;

„walvisvaarder met landbasis", 'n walvisvaarder wat sy gehele vangs vir verwerking in 'n fabriek wat aan wal in die Unie opgerig is, aflewer;

„opnemer", 'n skeepsopnemer, ingenieur-opnemer of radio- of ander opnemer (in aanmerking genome die sake wat ondersoek word of ondersoek moet word) wat kragtens paragraaf (*b*) van artikel *vier* erken of aangestel is;

(*b*) from the requirements of regulation 59—

(i) to the extent to which he is satisfied that the accommodation spaces and service spaces therein afford no substantial fire risk;

(ii) in respect of any baggage room or store room which he is satisfied is provided with adequate arrangements for the detection of fire or for the smothering of fire by gas or steam.

96. EXEMPTION IN RESPECT OF COMPASSES.

The Secretary may exempt any ship of Class VI from the requirements of paragraph (3) of regulation 80 if he is satisfied that by reason of the ship's construction or intended service, compliance with such requirements would be unreasonable or impracticable.

97. EXEMPTION IN RESPECT OF DEPTH-SOUNDING DEVICES.

The Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages) may exempt any ship from any of the requirements of regulation 81, if he is satisfied that compliance therewith is unreasonable or unnecessary in the circumstances.

PART II.

(Fishing, sealing and shore-based whaling boats.)

CHAPTER I.—GENERAL.

98. INTERPRETATION.

In this Part the expression "the Act" means the Merchant Shipping Act, 1951 (Act No. 57 of 1951), and unless the context otherwise indicates, any expression used in this Part to which a meaning has been assigned in the Act, bears the meaning so assigned, and—

"boat" means a fishing, sealing or shore-based whaling boat to which this Part applies in terms of regulation 99;

"constructed before or after any date" means that the keel of the boat under reference was laid before or after that date, as the case may be;

"crew space" means crew accommodation;

"gallon" means an imperial gallon;

"length" means registered length;

"unclassed boat" means a boat which it not constructed or surveyed regularly in accordance with the requirements of a recognised Classification Society.

[NOTE.—Section *two* of the Act includes the following definitions:—

"Crew accommodation" includes sleeping rooms, store rooms, galleys, mess rooms, sanitary accommodation, hospitals and recreation spaces provided for use by or for the benefit of seaman and apprentice-officers;

"fishing boat" means any ship engaged in sea fishing for profit, but does not include any sealing or whaling boat;

*"proper officer" means the officer designated by the Minister to be the proper officer at the place and in respect of the matter to which reference is made in the provision of this Act in which the expression occurs;

"sealing boat" means any ship exclusively employed in seal-catching;

"Secretary" means the Secretary for Transport;

"shore-based whaling boat" means a whaling boat which delivers the whole of its catch to be processed in a factory established ashore in the Union;

"surveyor" means a ship surveyor, engineer surveyor or radio or other surveyor (having regard to the matters surveyed or to be surveyed) recognized or appointed in terms of paragraph (*b*) of section *four:*

„walvisvaarder", 'n skip wat uitsluitend vir walvisvangs gebruik word, of waarop enige verwerking van die liggame of enige deel van die liggame van die walvisse wat deur ander walvisvaarders gevang word, plaasvind.

* Vir die toepassing van hierdie Deel het die Minister die volgende beamptes as „bevoegde beamptes" aangewys—

te Kaapstad en Durban: Die Eerstebeampte van die Marine-afdeling;

te Port Elizabeth, Oos-Londen, Mosselbaai, Port Nolloth, Lüderitz en Walvisbaai: Die Koopvaardymeester.]

99. TOEPASSING.

Hierdie Deel is van toepassing op elke ongeklassifiseerde boot van 25 bruto-registerton of meer wat in die Unie geregistreer is of as sodanig geregistreer geag word, en op elke ongeklassifiseerde boot van minder as 25 bruto-registerton wat by of vanaf 'n hawe in die Unie werk en wat vereis word om kragtens artikel *agt-en-sestig* van die Wet gelisensieer te wees.

HOOFSTUK II.—KONSTRUKSIE VAN BOTE EN ONDERSOEK TEN TYE DAARVAN.

100. VOORLEGGING VAN PLANNE.

Alvorens daar begin word met die bou van enige boot, moet die eienaar of bouer die volgende planne aan die bevoegde beampte voorlê:—

(1) *Romp.*

(*a*) 'n Uitvoerige spesifikasie van die boot.

(*b*) 'n Grootspantdeursnee wat al die vernaamste verbande, besonderhede van luikopenings, anker- en kettinguitrusting en rompbevestigingstukke aantoon.

(*c*) Lengtedeursnee en dekplanne wat besonderhede toon van alle beskotte en verstywings.

(*d*) Agterskip, agterstewe of skroefraam, roer en stok.

(*e*) Inrigtings vir die berging en tewaterlating van reddingsbote.

(*f*) Besonderhede van bemanningsruimtes.

(2) *Stoomketels, -enjins en -hulpenjins.*—Stoomketels, stoomketelmonterings, hoofstoompype, hoofvoedingspype, verdampers, voedingsverhitters, stoomketel-voedingstelsels, hoofasleiding, hoofenjins, oliebrandstofstelsels en skroef.

(3) *Binnebrandenjins.*

(*a*) Lughouers en ander drukhouers.

(*b*) Getal, beskrywing, inhoudsvermoë en diktes van brandstoftenks.

(*c*) Enjins, asleiding en skroewe.

(4) *Lenspompe en pypleiding.*

(*a*) Getal en inhoudsvermoë van alle lenspompe en besonderhede van aandrywingsmetode.

(*b*) Inrigting van suigings in elke ruimte in die boot.

(*c*) Inwendige deursnee, materiaal en maat van alle lenspypleiding.

(5) *Brandpompe en pypleiding.*

(*a*) Getal en inhoudsvermoë van alle brandpompe.

(*b*) Interne deursnee van brandkraanpypleiding.

(*c*) Posisie van alle afvoerpype.

(6) *Stuurinrigting.*

(*a*) Tipe-stoom, hidrolies of hand.

(*b*) Grootte van ketting, draad of stang.

(*c*) Deursnee van roerkoning.

(*d*) Volledige besonderhede van roer.

101. INSPEKSIES EN TOETSE GEDURENDE KONSTRUKSIE.

Inspeksies en toetse gedurende die konstruksie van 'n boot moet deur die opnemer waargeneem word nadat die Sekretaris die planne wat ooreenkomstig die bepalinge van regulasie 100 ingedien is, goedgekeur het.

"whaling boat" means any ship engaged exclusively in whale-catching, or on which any processing takes place of the bodies or any portion of the bodies of the whales caught by other whaling boats.

* For the purposes of this Part, the Minister has designated the following officers as "proper officers":—

At Cape Town and Durban: The Principal Officer of the Marine Division;

At Port Elizabeth, East London, Mossel Bay, Port Nolloth, Lüderitz and Walvis Bay: The Shipping Master.]

99. APPLICATION.

This part shall apply to every unclassed boat of 25 gross register tons or over registered in the Union or deemed to be so registered, and to every unclassed boat of less than 25 gross register tons operating at or from a port in the Union and which is required to be licenced under section *sixty-eight* of the Act.

CHAPTER II.—CONSTRUCTION OF BOATS AND SURVEYS AT THE TIME THEREOF.

100. SUBMISSION OF PLANS.

Before the construction of any boat is commenced, the owner or builder shall submit the following plans to the proper officer:—

(1) *Hull.*

(*a*) A detailed specification of the boat.

(*b*) A midship section showing all the principal scantlings, details of hatchways, particulars of anchor and chain equipment, and details of hull fastenings.

(*c*) Longitudinal section and deck plans showing details of all bulkheads and stiffeners.

(*d*) Stern, sternpost or sternframe, rudder and stock.

(*e*) Lifeboat stowage and launching arrangements.

(*f*) Details of crew spaces.

(2) *Boilers, Steam Engines and Steam Auxiliaries.*—Boilers, boiler mountings, main steam pipes, main feed pipes, evaporators, feed heaters, boiler feed systems, main shafting, main engines, oil fuel systems and propeller.

(3) *Internal Combustion Engines.*

(*a*) Air receivers and other pressure vessels.

(*b*) Number, description, capacity and thicknesses of fuel tanks.

(*c*) Engines, shafting and propellers.

(4) *Bilge Pump and Piping.*

(*a*) Number and capacity of all bilge pumps and details of method of drive.

(*b*) Arrangement of suctions in each space in the boat.

(*c*) Internal diameter, material and gauge of all bilge piping.

(5) *Fire Pump and Piping.*

(*a*) Number and capacity of all fire pumps.

(*b*) Internal diameter of hydrant piping.

(*c*) Position of all outlets.

(6) *Steering Gear.*

(*a*) Type—Steam, hydraulic or hand.

(*b*) Size of chain, wire or rod.

(*c*) Diameter of rudder stock.

(*d*) Full details of rudder.

101. INSPECTIONS AND TESTS DURING CONSTRUCTION.

Inspections and tests during the construction of a boat shall be conducted by the surveyor after the Secretary has approved of the plans submitted in accordance with the provisions of regulation 100.

102. ONDERSOEK VAN NUWE KONSTRUKSIE.

(1) Elke boot moet gedurende die konstruksie daarvan ondersoek word op sodanige tye as wat die opnemer nodig ag.

(2) Die eienaar of bouer van die boot moet die opnemer minstens 'n week vooruit in kennis stel van:—

(*a*) die aanvang met die raamwerk;

(*b*) die aanvang met beplating of beplanking;

(*c*) die tewaterlating; en

(*d*) die dok- en see-proewe.

103. HIDROLIESE TOETS VAN STOOMKETELS, ENS.

(1) Die opnemer moet deur sodanige ondersoek en berekening wat nodig mag wees, tevrede wees dat alle drukdele in staat is om die werkdruk waaraan hulle onderwerp mag word, te weerstaan, en hy moet verseker dat alle hidroliese toetse bevredigend uitgevoer word.

(2) Stoomketels moet hidrolies getoets word ooreenkomstig die volgende drukke:—

(*a*) Vir nuwe stoomketels—

toetsdruk = $1\frac{1}{2}$ × W.D. + 50 pond per vierkant duim vir W.D. meer as 100 pond per vierkant duim.

en = 2 × W.D. vir W.D. van 100 pond per vierkant duim en minder.

(*b*) Vir stoomketels wat nie nuut is nie:—

toetsdruk = $1\frac{1}{2}$ × W.D.

(3) Wanneer die ondersoek van 'n nuwe stoomketel voltooi is, moet dit op 'n plek wat te alle tye duidelik sigbaar is, as volg gestempel word:—

STEMPEL VAN TOETSGESAGHEBBENDE.

W.D.....
Getoets tot .....pond.
W.D.....pond.
Datum.....
Opnemer se voorletters.....

(4) Drukdele, behalwe stoomketels, moet ooreenkomstig die volgende drukke hidrolies getoets word wanneer dit nuut is:—

Stoomketelmonterings.

Voedingsterugslagkleppe	$2\frac{1}{2}$ × W.D.
Ander monterings	2 × W.D.
Stoompype	2 × W.D.
Voedingspype	$2\frac{1}{2}$ × W.D.
Voedingsverhitters ... ... (omhulsels, buise of klosse).	$2\frac{1}{2}$ × W.D.

Oliebrandstofpype, verhitters, klosse of buise: 400 pond per vierkant duim of twee keer die maksimum werkdruk waaraan hulle onderwerp word, wat ookal die grootste is.

Verdamperomhulsels: Twee keer die maksimum werkdruk van die verdamper.

Verdamperklosse of buise: Twee keer die maksimum werkdruk waaraan hulle onderwerp mag word.

Lughouers: Soos vir stoomketels.

(5) In hierdie regulasie beteken „ W.D. " die toegewysde werkdruk van die stoomketel.

104. VEILIGHEIDSKLEPPE.

(1) Elke stoomketel moet voorsien word van minstens twee veiligheidskleppe.

(2) Veiligheidskleppe van elke nuwe stoomketel moet, nadat dit op die toegewysde druk gestel is, soos volg aan 'n akkumulasietoets onderwerp word:—

Vir silindriese stoomketels.—Gedurende 'n toets van vyftien minute met die afsluitkleppe gesluit en onder volle ontstekingstoestande moet die ophoping van druk nie 10 persent van die werkdruk oorskrei nie, en gedurende die toets moet nie meer voedingswater voorsien word as wat nodig is om 'n veilige werkwaterpeil in stand te hou nie.

102. SURVEY OF NEW CONSTRUCTION.

(1) Every boat shall be surveyed during construction at such times as the surveyor considers necessary.

(2) The owner or builder of a boat shall notify the surveyor at least one week in advance of—

(*a*) the commencement of framing;

(*b*) the commencement of plating or planking;

(*c*) the launching; and

(*d*) the dock and sea trials.

103. HYDRAULIC TESTING OF BOILERS, ETC.

(1) The surveyor shall be satisfied by such examination and calculation as may be necessary that all pressure parts are capable of withstanding the working pressures to which they may be subjected, and he shall ensure that all hydraulic testing is satisfactorily carried out.

(2) Boilers shall be hydraulically tested in accordance with the following pressures:—

(*a*) For new boilers—

test pressure = $1\frac{1}{2}$ × W.P. + 50 pounds per square inch for W.Ps in excess of 100 pounds per square inch.

and = 2 × W.P. for W.Ps of 100 pounds square inch and less.

(*b*) for boilers which are not new:—

test pressure = $1\frac{1}{2}$ × W.P.

(3) When the survey of a new boiler is completed, it shall, in a position which will be clearly visible at all times, be stamped as follows:—

STAMP OF TESTING AUTHORITY.

W.P.....
Tested to.....pounds.
W.P.....pounds.
Date.....
Surveyor's initials.....

(4) Pressure parts, other than boilers, when new shall be hydraulically tested in accordance with the following pressures:—

Boiler mountings.

Feed Check valves	$2\frac{1}{2}$ × W.P.
Other mountings	2 × W.P.
Steam pipes	2 × W.P.
Feed pipes	$2\frac{1}{2}$ × W.P.
Feed heaters ... ... (Bodies, tubes or coils).	$2\frac{1}{2}$ × W.P.

Oil fuel pipes, heaters, coils or tubes: 400 pounds per square inch or twice the maximum working pressure to which they are subjected, whichever is greater.

Evaporator bodies: Twice the maximum working pressure of the avaporator.

Evaporator coils or tubes: Twice the maximum working pressure to which they may be subjected.

Air receivers: As for boilers.

(5) In this regulation " W.P. " means the assigned working pressure of the boiler.

104. SAFETY VALVES.

(1) Every boiler shall be provided with at least two safety valves.

(2) Safety valves of every new boiler shall, after it has been set to the assigned pressure, be subjected to an accumulation test as follows:—

For Cylindrical Boilers.—During a test of fifteen minutes with the stop valves closed and under full firing conditions the accumulation of pressure shall not exceed 10 per cent of the working pressure, and during the test no more feed water shall be supplied than is necessary to maintain a safe working water level.

Vir waterpypketels.—Gedurende 'n toets met die afsluitklep gesluit en onder volle ontstekingstoestande, vir so lank as wat die watervoorraad in die stoomketel toelaat, moet die ophoping van druk nie 10 persent van die werkdruk oorskrei nie, maar in geen geval hoef die toets langer as sewe minute te duur nie.

105. VOEDINGSPOMPE.

Elke boot wat deur stoom aangedryf word, moet van minstens twee heeltemal aparte meganiese voedingspompe voorsien word. Een van hierdie voedingspompe mag vanaf die hoofenjins bedien word en die ander een moet 'n onafhanklike meganiese pomp wees.

106. BINNEBRANDENJINS.

(1) In die geval van 'n boot wat deur 'n binnebrandenjin aangedryf word, moet die opnemer deur sodanige ondersoek en berekening as wat nodig mag wees, tevrede wees dat—

(*a*) lughouers en ander drukhouers in staat is om die druk wat aan hulle toegewys is, te weerstaan;

(*b*) die sterkte, krag en vermoë van die aandrywingsmasjinerie en asleiding in alle opsigte voldoende is sodat die boot met 'n behoorlike graad van veiligheid ter see gemanuvreer en gehanteer kan word; en

(*c*) die masjinerie en asleiding bevredigend geïnstalleer is.

(2) 'n Veiligheidsklep moet op elke lughouer of op die pypleiding tussen elke lugkompressor en elke houer voorsien word, maar waar die veiligheidsklep op die pypleiding aangebring word, moet 'n smeltbare prop op elke lughouer aangebring word. Veiligheidskleppe moet in die teenwoordigheid van die opnemer gestel word om by of onder die normale toegewysde druk af te blaas.

(3) Wanneer hoofenjins van saamgeperste lug afhanklik is om aan die gang gesit te word, moet die inhoudsvermoë van die houers, sonder dat dit nodig is om hulle weer vol te maak, voldoende wees om aan alle praktiese vereistes te voldoen. Een lugkompressor wat deur 'n kragbron aangedryf word wat sonder behulp van saamgeperste lug aan die gang gesit kan word, moet voorsien word.

(4) Wanneer hoofenjins van ander middels as saamgeperste lug afhanklik is om aan die gang gesit te word, moet die opnemer tevrede wees dat sulke middels voldoende is vir alle omstandighede en dat hulle te alle tye weer gelaai of gevul kan word.

(5) Uitlaatpype en knaldempers moet doeltreffend watergekoel, beklee of geïnstalleer wees, op so 'n wyse dat hulle geen gevaar van brand sal skep nie.

(6) Elke moontlike voorsorgmaatreël moet getref word om te voorkom dat brandstof en smeerolie in die kimme inloop. Bakke van metaal, of wat met lood uitgevoer is, sal gewoonlik noodsaaklik wees onder brandstoftenks en enjins en behoorlike dreineringsmiddels moet voorsien word.

107. LENSPOMPINRIGTINGS.

(1) Elke boot moet met lenspompe en -pypleiding ooreenkomstig die volgende tabel toegerus wees:—

For Water Tube Boilers.—During a test with the stop valve closed and under full firing conditions, for as long a time as the water supply in the boiler permits; the accumulation of pressure shall not exceed 10 per cent of the working pressure, but in no case need the test exceed seven minutes.

105. FEED PUMPS.

Every boat propelled by steam shall be provided with not less than two entirely separate power feed pumps. One of these feed pumps may be operated from the main engines, and the other shall be an independent power pump.

106. INTERNAL COMBUSTION ENGINES.

(1) In the case of a boat propelled by an internal combustion engine, the surveyor shall be satisfied by such examination and calculation as may be necessary that—

(*a*) air receivers and other pressure vessels are capable of withstanding the pressure assigned to them;

(*b*) that the propelling machinery and shafting are in all respects of sufficient strength, power and capacity to enable the boat to be manouevred and handled at sea with a proper degree of safety; and

(*c*) that the machinery and shafting have been satisfactorily installed.

(2) A safety valve shall be provided on every air receiver or on the piping between each air compressor and each receiver, but where the safety valve is fitted on the piping a fusible plug shall be fitted on each air receiver. Safety valves shall in the presence of a surveyor, be set to blow off at or below the working pressure assigned.

(3) Where main engines depend on compressed air for starting, the capacity of the receivers shall, without replenishment being necessary, be sufficient to meet all practical requirements. One air compressor driven by a prime mover which can be started without the use of compressed air, shall be provided.

(4) Where main engines depend upon means other than compressed air for starting, the surveyor shall be satisfied that such means are ample for all circumstances and that they will at all times be capable of being recharged or replenished.

(5) Exhaust pipes and silencers shall be efficiently water-cooled, lagged or installed in such a manner that they will create no fire hazard.

(6) Every possible precaution shall be taken to avoid fuel and lubricating oil running into the bilges. Metal or lead-lined trays under fuel tanks and engines will generally be essential, and proper means shall be provided for drainage.

107. BILGE PUMPING ARRANGEMENTS.

(1) Every boat shall be fitted with bilge pumps and piping in accordance with the following table:—

Lengte van boot in voet.		Minimum getal pompe.	Minimum inhoudsvermoë van pompe.	Minimum inwendige deursnee van pypleiding.
Bote ontwerp om pelsers, maasbankers of makriel te vang.	Ander bote.			
—	30 en minder.....	1 wat meganies of met hand beweeg word.....	15 G.P.M.....	2″
30 en minder.....	Oor 30 tot 65.....	2 (1 meganies, 1 handaangedrewe).....	15 G.P.M. elk.....	2″
Oor 30 tot 65.....	Oor 65 tot 80.....	2 (1 meganies, 1 handaangedrewe).....	30 G.P.M. elk.....	2″
Oor 65 tot 80.....	Oor 80 tot 100....	2 meganies (1 mag deur hoofenjin aangedryf word)	100 G.P.M. totaal..	2″
Oor 80 tot 100.....	150.....	2 meganies (1 mag deur hoofenjin aangedryf word)	170 G.P.M. totaal	2½″

(OPMERKING.—„ G.P.M. " beteken gelling per minuut.)

Length of Boat in Feet.		Minimum Number of Pumps.	Minimum Capacity of Pumps.	Minimum Internal Diameter of Piping.
Boats Designed for Catching Pilchards, Maasbankers or Mackerel.	Other Boats.			
—	30 and under.....	1 power driven or hand operated.....	15 G.P.M.....	2″
30 and under.....	Over 30 to 65....	2 (1 power driven, 1 hand operated).....	15 G.P.M. each.....	2″
Over 30 to 65.....	Over 65 to 80....	2 (1 power driven, 1 hand operated).....	30 G.P.M. each.....	2″
Over 65 to 80.....	Over 80 to 100...	2 power driven (1 may be driven by main engine)...	100 G.P.M. total....	2″
Over 80 to 100.....	150.....	2 power driven (1 may be driven by main engine)...	170 G.P.M. total....	2½″

(NOTE.—" G.P.M." means gallons per minute.)

Vir bote met 'n lengte van meer as 100 voet, interpoleer vir inhoudsvermoë waar nodig tot die volgende hoogste halfduim.

Handaangedrewe lenspompe moet vanaf 'n posisie bokant die laswaterlyn bedien kan word.

(2) Lenssuigings en dreineringsmiddels op 'n boot wat in waterdigte afdelings ingedeel is, moet so ingerig word dat enige water wat in enige hoofafdeling mag inloop deur minstens een lenssuiging in elke afdeling geleë, uitgepomp kan word, en alle afdelings in elke hoofafdeling moet ingerig wees om daardie lenssuiging te dreineer.

(3) Lenssuigings en dreineringsmiddels op 'n boot wat nie in waterdigte afdelings ingedeel is nie, moet sodanig ingerig word dat enige water wat in die boot inloop, na minstens een lenssuiging gedreineer kan word.

(4) Lenspypleiding-inrigtings moet sodanig wees dat elkeen van die pompe wat ooreenkomstig paragraaf (1) verskaf word, in staat is om water te trek van elkeen van die lenssuigings waarna in paragrawe (2) en (3) verwys word.

(5) Indien die volgende afdelings nie gebruik word om waterballas te bevat nie, mag hulle soos volg van lensdreineringsinrigtings voorsien word:—

(*a*) In die geval van afdelings wat voor die aanvaringsbeskot geleë is, van 'n handpomp;

(*b*) in die geval van afdelings wat voor die aanvaringsbeskot geleë is op 'n boot wat 'n waterdigte beskot het tussen die aanvarings- en masjinerieruimbeskotte, van 'n handpomp of 'n aftapkraan bevestig aan die aanvaringsbeskot van bokant die hoofdek bedien;

(*c*) in die geval van waterdigte afdelings wat oor die drukasnis steek, van 'n handpomp of 'n selfsluitende aftapkraan wat vanaf die enjinkamer bedien word;

(*d*) in die geval van afdelings wat agter die agterpiekbeskot geleë is, van 'n handpomp of van 'n selfsluitende aftapkraan wat vanaf die enjinkamer of bokant die hoofdek bedien word.

(6) Handpompe wat ooreenkomstig paragraaf (5) voorsien word, moet 'n inhoudsvermoë van minstens 15 gelling per minuut hê en toegerus wees met suigpypleiding met 'n inwendige deursnee van minstens 2 duim. Sulke handpompe moet vanaf 'n posisie bokant die laswaterlyn bedien kan word.

(7) Aftapkrane wat ooreenkomstig paragraaf (5) voorsien is, moet 'n inwendige deursnee van minstens 1½ duim hê en moet te alle tye toeganklik wees.

(8) Kragaangedrewe lenspompe moet self-laaiend wees, of op so 'n wyse geïnstalleer word dat hulle van die see gelaai kan word sonder dat die kimme oorstroom word.

(9) Elke lenssuiging-taklyn, behalwe handpompe met net een suiging, moet toegerus word met 'n afsluitklep wat te alle tye geredelik toeganklik is.

(10) Wanneer 'n lenspomp voorsien is van 'n verbinding met die see, moet 'n terugslagklep wat te alle tye geredelik toegangklik is, tussen die verbinding met die see en die hooflensleiding aangebring word op so 'n wyse dat seewater nie in die kimme kan inloop wanneer die verbinding met die see en die lenskleppe gelyktydig oop is nie.

For boats over 100 feet in length interpolate for capacity where required to the next highest half inch.

Hand bilge pumps shall be capable of being worked from a position above the load water line.

(2) Bilge suctions and means for drainage on a boat which is divided into watertight compartments shall be arranged in such a manner that any water which enters any main compartment can be pumped out through at least one bilge suction situated in each compartment, and all compartments within each main division shall be arranged to drain to that bilge suction.

(3) Bilge suctions and means for drainage on a boat which is not divided into watertight compartments shall be arranged in such a manner that any water which enters the boat is able to drain to at least one bilge suction.

(4) Bilge piping arrangements shall be such that each of the pumps provided in accordance with paragraph (1) shall be able to draw water from each of the bilge suctions referred to in paragraphs (2) and (3).

(5) The following compartments, if not used for carrying water ballast, may be provided with bilge drainage arrangements as follows:—

(*a*) In the case of compartments situated forward of the collision bulkhead, with a manual pump;

(*b*) in the case of compartments situated forward of the collision bulkhead on a boat which has a watertight bulkhead between the collision and machinery space bulkheads, with a manual pump or with a drain cock secured to the collision bulkhead operated from above the main deck;

(*c*) in the case of watertight compartments which overhang the thrust shaft recess, with a manual pump or with a self-closing drain cock operated from the engine-room;

(*d*) in the case of compartments situated aft of the after peak bulkhead, with a manual pump or with a self-closing drain cock operated from the engine-room or from above the main deck.

(6) Manual pumps provided in accordance with paragraph (5), shall have a capacity of at least 15 gallons per minute and shall be fitted with suction piping having an internal diameter of not less than 2 inches. Such manual pumps shall be capable of being operated from a position above the load water line.

(7) Drain cocks provided in accordance with paragraph (5) shall have an international diameter of not less than 1½ inches and shall be accessible at all times.

(8) Power-driven bilge pumps shall be selfpriming or installed in such a manner that they can be primed from the sea without flooding the bilges.

(9) Each bilge suction branch line, except hand pumps with only one suction, shall be fitted with a stop valve which is readily accessible at all times.

(10) Where a bilge pump is fitted with a connection to the sea, a non-return valve which is readily accessible at all times, shall be fitted between the connection to the sea and the bilge main in such a manner that sea water cannot flow into the bilges when the connection to the sea and the bilge valves are open at the same time.

(11) Lenssuigings moet oor die algemeen voorsien wees van siwwe, en die oppervlaktes van die openings deur sulke siwwe mag nie minder wees as twee keer die dwarsdeursnee-oppervlakte van die lenspyp nie.

(12) In 'n boot wat met steenkool gestook word, moet 'n stuk buigbare suigslang met geskikte skroefverbinding na die vullingslyn van die masjinerieruim verskaf word sodat die enjin- en stoomketelruim-vullings gepomp kan word indien die suigsif verstop sou raak. Die verbinding op die vullingslyn moet voorsien word van 'n gevoegde metaaldop.

108. BRANDSTOFTENKS.

(1) 'n Brandstoftenk wat van die romp geskei is, moet aan die volgende vereistes voldoen:—

(*a*) Dit moet van staal of 'n ander geskikte materiaal wees met 'n minimum dikte soos volg:—

Inhoudsvermoë van tenk in gellings.	Minimum dikte in duime.
300 en minder.....	$\frac{1}{8}$" [onderworpe aan die bepalings van subparagraaf (*b*)].
Oor 300 maar nie oor 1,000 nie	$\frac{3}{16}$"
Oor 1,000.....	$\frac{1}{4}$"

(*b*) Indien die inhoudsvermoë van die brandstoftenk nie meer as 25 gellings is nie, mag die materiaal minder as $\frac{1}{8}$ste duim dik wees: Met die voorbehoud dat indien sodanige tenk vir petrol gebruik gaan word en van materiaal is wat minder as $\frac{1}{8}$ste duim dik is en nie roesweerstanend is nie, dit na voltooiing binnekant en buitekant deur middel van die warmdompelstelsel gegalvaniseer moet word.

(*c*) Tenks met 'n inhoudsvermoë groter as 25 gelling moet soos volg van verstywings voorsien word:—

Dikte van tenkbepaling in duime.	Maksimum ongesteunde plat oppervlakte-gebied in vk. vt.
$\frac{1}{8}$".....	3
$\frac{3}{16}$".....	6
$\frac{1}{4}$".....	9
$\frac{5}{16}$".....	12

Vir ander diktes van beplating moet die toelaatbare ongesteunde plat oppervlakte deur interpolasie verkry word.

(*d*) Indien die opnemer dit nodig ag, moet brandplate aan die binnekant van tenks aangebring word.

(*e*) 'n Brandstoftenk met 'n inhoudsvermoë van meer as 300 gelling maar nie meer as 1,000 gelling nie, moet voorsien word van 'n doeltreffende deur vir skoonmaakdoeleindes. In tenks met 'n inhoudsvermoë van meer as 1,000 gelling moet 'n mangatdeksel aangebring word.

(*f*) Nate moet gesweis, hardgesoldeer of dubbelgeklink word.

(*g*) Alle brandstoftenks moet by voltooiing met hidroliese druk getoets word tot 'n drukhoogte nie minder as die maksimum drukhoogte waaraan die tenk onderwerp kan word nie, of 8 voet drukhoogte bo die bokant van die tenk, wat ookal die grootste is.

(2) Waar die inhoudsvermoë van 'n brandstoftenk meer as 25 gelling is, moet dit van die volgende voorsien word:—

(*a*) 'n Vulpyp met 'n inwendige deursnee van minstens $1\frac{1}{2}$ duim, wat na die dek wat aan wind en weer blootgestel is, lei en waarvan die verbinding deur die dek waterdig is. Die pyp moet voorsien word van 'n koperskroefprop of -dop en buigbaar genoeg wees;

(*b*) 'n lugpyp met minstens dieselfde deursnee as die vulpyp, wat van die bokant van die tenk na 'n veilige hoogte en ligging bokant die dek wat aan wind en weer blootgestel is en weg van alle openings in die romp of dekhuis lei, met die ent van die pyp bedek met draadgaas en afgedraai met 'n hoek van 180 grade, terwyl die dekverbinding waterdig is.

(11) Bilge suctions shall generally be fitted with strainers, and the areas of openings of such strainers shall not be less than twice the cross sectional area of the bilge pipe.

(12) In a coal-fired boat a length of flexible suction hose, with suitable screwed connection to the machinery space bilge line, shall be supplied, in order that the engine and boiler space bilges may be pumped in the event of the suction strainer becoming choked. The connection on the bilge line shall be fitted with a jointed metal cap.

108. FUEL TANKS.

(1) A fuel tank which is separate from the hull, shall comply with the following requirements:—

(*a*) It shall be constructed of steel or other suitable material having a minimum thickness as follows:—

Capacity of Tank in Gallons.	Minimum Thickness in Inches.
300 and under.....	$\frac{1}{8}$" [subject to the provisions of sub-paragraph (*b*)].
Over 300 but not over 1,000....	$\frac{3}{16}$"
Over 1,000.....	$\frac{1}{4}$"

(*b*) Where the capacity of the fuel tank is not over 25 gallons, the material may be less than $\frac{1}{8}$-inch in thickness: Provided that if such a tank is to be used for petrol and is of material less than $\frac{1}{8}$-inch in thickness and is not corrosion-resistant, it shall be galvanised inside and outside by the hot dipped process after construction is completed.

(*c*) Tanks of capacity in excess of 25 gallons shall be fitted with stiffeners as follows:—

Thickness of Tank Plating in Inches.	Maximum Unsupported Flat Surface Area in Square Feet.
$\frac{1}{8}$.....	3
$\frac{3}{16}$.....	6
$\frac{1}{4}$".....	9
$\frac{5}{16}$".....	12

For other thicknesses of plating the unsupported flat surface allowed shall be obtained by interpolation.

(*d*) If the surveyor considers it necessary, baffle plates shall be fitted inside tanks.

(*e*) A fuel tank having a capacity of more than 300 gallons but not more than 1,000 gallons shall be fitted with a suitable door for purposes of cleaning. For tanks having a capacity of more than 1,000 gallons, a manhole door shall be fitted.

(*f*) Seams shall be welded, brazed or double riveted.

(*g*) All fuel tanks shall on completion be tested by hydraulic pressure to a head not less than the maximum head to which the tank can be subjected, or 8 feet head above the top of the tank, whichever is the greater.

(2) Where the capacity of a fuel tank is more than 25 gallons, it shall be provided with the following:—

(*a*) a filling pipe of at least $1\frac{1}{2}$ inches internal diameter leading to the weather-deck, the connection through the deck being watertight. The pipe shall be fitted with a screwed brass plug or cap, and shall be suitably flexible;

(*b*) a vent pipe of at least the same diameter as the filling pipe leading from the top of the tank to a safe height and location above the weatherdeck and clear of all openings into the hull or deck house, the end of the pipe being covered with wire gauze and turned down through an angle of 180 degrees, the deck connection being watertight.

(3) Elke brandstoftenk moet voorsien word van doeltreffende middels om die stand van die brandstof te bepaal. Ronde glas buisvormige oliestandmeters moet nie in brandstoftenks aangebring word nie.

(4) Elke brandstoftenk moet in 'n posisie aangebring word wat ver verwyder is van verhitte oppervlaktes.

(5) Brandstoftenks wat nie apart is van die romp nie word as 'n deel van die romp geag, met inagneming van die sterkte-vereistes van die boot en die moontlikheid van besmetting van oliebrandstof met water, maar die konstruksie- en toetsstandaarde moet nie minder wees as dié wat vereis word vir tenks wat apart van die romp is nie.

109. ONDERWATERTOERUSTING.

(1) Kleppe of krane moet aan alle suig- en afvoerpype wat onderkant die dek wat aan wind en weer blootgestel is deur die romp gaan, aangebring word. Sulke kleppe en krane moet so na aan die romp as moontlik aangebring word.

(2) Suig- en afvoerkleppe en -krane aan 'n staalboot moet aan die romp of aan die beplating van gefabriseerde waterkaste geheg word deur middel van—

(*a*) boute, met versonke koppe, wat deur die beplatings geklop word; of

(*b*) tapboute wat in swaar staalblokke geskroef word wat aan die beplating gesweis of geklink word, maar nie deur die beplating dring nie;

en sulke kleppe of krane moet van tappe voorsien word wat deur die beplating gaan.

(3) Suig- en afvoerkleppe en krane aan 'n houtboot moet deur enige middel wat deur die opnemer goekgekeur word, aan die romp geheg word.

(4) Uitblaaskleppe of -krane aan die kant van die boot moet in 'n toeganklike posisie aangebring word en moet op so 'n wyse gerangskik word dat daar geredelik gesien kan word of hulle oop of toe is; die handvatsels mag nie verwyderbaar wees nie tensy die kleppe of krane gesluit is.

KONSTRUKSIE VAN ROMPE.

110. BESKOTTE.

(1) Die spasiëring van waterdigte beskotte moet tot bevrediging van die opnemer wees, met inagneming van die grootte, tipe en konstruksie van die boot en die dienste waarvoor dit bedoel is.

(2) Openings in waterdigte beskotte moet geskikte waterdigte deure of ander sluitmiddels bevat wat te alle tye geredelik en vinnig aangewend kan word. Sodanige sluitmiddels moet sterk genoeg en nousluitend wees tot bevrediging van die opnemer.

(3) Alle waterdigte beskotte moet so verstyf word dat die opnemer dit goedkeur. Besondere aandag moet bestee word aan beskotte van visruime in 'n boot wat van hout gebou is, in welke geval 'n stelsel van horisontale en vertikale verstywings gewoonlik wenslik is.

(4) Waterdigte beskotte moet met die brandslang getoets word na voltooiing van die konstruksie van die beskotte.

111. LUIKE.

(1) Die afmetings van luiklaaihoofde, -skilde en -laaihoofluike moet nie minder as die volgende wees nie:—

(*a*) *Gewone laaihoofluike.*

Ongesteunde lengte.	Dikte.	Landing op laaihoofde.
3′ 0″	1½″	1½″
3′ 6″	1¾″	1½″
4′ 0″	2″	2″
4′ 6″	2¼″	2″
5′ 0″	2½″	2″
5′ 6″	2⅝″	2½″
6′ 0″	2¾″	2½″

(3) Each fuel tank shall be provided with suitable means for ascertaining the level of the fuel. Round glass tubular oil level gauges shall not be fitted to fuel tanks.

(4) Every fuel tank shall be fitted in a position remote from heated surfaces.

(5) Fuel tanks which are not separate from the hull shall be considered as part of the hull, taking into consideration the strength requirements of the boat and the possibility of contamination of oil fuel with water, but the standards of construction and testing shall not be less than those required for tanks which are separate from the hull.

109. UNDERWATER FITTINGS.

(1) Valves or cocks shall be fitted to all suction and discharge pipes which pass through the hull below the weatherdeck. Such valves or cocks shall be fitted as close to the hull as possible.

(2) Suction and discharge valves and cocks on a steel boat shall be attached to the hull or to the plating of fabricated water boxes by—

(*a*) bolts, with countersunk heads, tapped through the platings, or

(*b*) studs which are screwed into heavy steel pads welded or riveted to the plating, but not penetrating the plating,

and such valves or cocks shall be fitted with spigots passing through the plating.

(3) Suction and discharge valves and cocks on a wooden boat shall be attached to the hull by any means approved by the surveyor.

(4) Blow-down valves or cocks on the boat's side shall be fitted in an accessible position and shall be arranged in such a manner that it can be readily seen whether they are open or shut; the handles shall not be capable of being removed unless the valves or cocks are shut.

CONSTRUCTION OF HULLS.

110. BULKHEADS.

(1) The spacing of watertight bulkheads shall be to the satisfaction of the surveyor, having regard to the size, type and construction of the boat and to the duties for which it is intended.

(2) Openings in watertight bulkheads shall have suitable watertight doors or other means of closing which can at all times be readily and quickly applied. Such closing appliances shall be of ample strength and shall be close-fitting to the satisfaction of the surveyor.

(3) All watertight bulkheads shall be suitably stiffened to the satisfaction of the surveyor. Particular attention shall be paid to bulkheads of fish holds in a boat of wooden construction, in which case a system of horizontal and vertical stiffening is generally desirable.

(4) Watertight bulkheads shall be hose-tested after completion of the construction of the bulkheads.

111. HATCHES.

(1) Scantlings of hatch coamings, beams, and covers shall not be less than the following:—

(*a*) *Normal Hatch Covers.*

Unsupported Length.	Thickness.	Landing on Coamings.
3′ 0″	1½″	1½″
3′ 6″	1¾″	1½″
4′ 0″	2″	2″
4′ 6″	2¼″	2″
5′ 0″	2½″	2″
5′ 6″	2⅝″	2½″
6′ 0″	2¾″	2½″

(*b*) Die afmetings van reghoekige dwarsdeursnee-luikskilde of langsmerkels met uitsondering van tong (indien aangebring) moet gelykstaande wees aan die volgende vir luikopenings tot 10 vt. × 12 dm.

Grootte van luikopening.	Grootte van skild of langsmerkel in die middel.
6′ 6″ × 7′ 0″	5″ × 7″ Vertikaal.
7′ 0″ × 7′ 0″	5½″ × 7″ Vertikaal.
7′ 0″ × 8′ 0″	5½″ × 8″ Vertikaal.
7′ 0″ × 9′ 0″	6″ × 8½″ Vertikaal.
8′ 0″ × 9′ 0″	6″ × 9″ Vertikaal.
8′ 0″ × 10′ 0″	7″ × 9½″ Vertikaal.
9′ 0″ × 9′ 0″	7″ × 9″ Vertikaal.
9′ 0″ × 10′ 0″	7″ × 10″ Vertikaal.
10′ 0″ × 10′ 0″	7″ × 10½″ Vertikaal.
10′ 0″ × 11′ 0″	7½″ × 11″ Vertikaal.
10′ 0″ × 12′ 0″	7½″ × 12″ Vertikaal.

Die minimumdraagvlak wat aan die ente van luikskilde of langsmerkels vereis word, is 3 duim.

(*c*) *Luiklaaihoofde.*

Maksimum lengte van eind- en syhoofplate.	Hoogte van laaihoof bo dek.	Dikte van laaihoof by dek.	
		Hout.	Staal.
3′ 0″	12″ 15″ 18″	3″ 3″ 3″	¼″ ¼″ ¼″
4′ 0″	12″ 15″ 18″	3″ 3″ 3″	¼″ ¼″ ¼″
5′ 0″	12″ 15″ 18″	3″ 3¼″ 3½″	¼″ ¼″ ¼″
6′ 0″	12″ 15″ 18″ 21″ 24″	3″ 3¼″ 3½″ 3¾″ 4″	¼″ ¼″ ¼″ ¼″ ¼″
7′ 0″	12″ 15″ 18″ 21″ 24″	3″ 3¼″ 3½″ 3¾″ 4″	¼″ ¼″ 5/16″ 5/16″ 5/16″
8′ 0″	12″ 15″ 18″ 21″ 24″	3″ 3¼″ 3½″ 3¾″ 4″	5/16″ 5/16″ 5/16″ 5/16″ 5/16″
9′ 0″	12″ 15″ 18″ 21″ 24″	4″ 4¼″ 4½″ 4¾″ 5″	5/16″ 5/16″ 5/16″ ⅜″ ⅜″
10′ 0″	12″ 15″ 18″ 21″ 24″	5¼″ 5½″ 6″ 6¼″ 6½″	⅜″ ⅜″ ⅜″ ⅜″ ⅜″

Halfskilde by luike, luikeindskilde, klamaaie, opgesette knieë, liggende knieë en stutte, moet sterk genoeg en behoorlik gerangskik wees.

(2) Luike moet voorsien word van doeltreffende middels om hulle vas te keg.

(3) Spoeldek-poortdeksels moet stewig van staal of brons met skroef- of bajonetverbindings gebou en deur middel van 'n permanente ketting bevestig of vasgekeg word.

112. DEURE, DREMPELS, PATRYSPOORTE EN NOODLUIKE.

(1) Die drempels van deure wat toegang verleen na die hoofromp moet 'n minimum hoogte van 12 duim hê, maar deure wat bo-op enige bobou-dekhuis of verhoogde bak geleë is, mag drempels hê van nie minder as 6 duim hoog nie.

(*b*) The scantlings of rectangular cross section hatch beams or fore-and-afters exclusive of tongue (if fitted) shall be equivalent to the following for hatch openings up to 10 feet by 12 inches.

Size of Hatch Opening.	Size of Beam or Fore-and-after at Centre.
6′ 6″ × 7′ 0″	5″ × 7″ Vertical.
7′ 0″ × 7′ 0″	5½″ × 7″ Vertical.
7′ 0″ × 8′ 0″	5½″ × 8″ Vertical.
7′ 0″ × 9′ 0″	6″ × 8½″ Vertical.
8′ 0″ × 9′ 0″	6″ × 9″ Vertical.
8′ 0″ × 10′ 0″	7″ × 9½″ Vertical.
9′ 0″ × 9′ 0″	7″ × 9″ Vertical.
9′ 0″ × 10′ 0″	7″ × 10″ Vertical.
10′ 0″ × 10′ 0″	7″ × 10½″ Vertical.
10′ 0″ × 11′ 0″	7½″ × 11″ Vertical.
10′ 0″ × 12′ 0″	7½″ × 12″ Vertical.

The minimum bearing required at the ends of hatch beams of fore-and-afters is 3 inches.

(*c*) *Hatch Coamings.*

Maximum Length of Coaming Side or End.	Height of Coaming above Deck.	Thickness of Coaming at Deck.	
		Wood.	Steel.
3′ 0″	12″ 15″ 18″	3″ 3″ 3″	¼″ ¼″ ¼″
4′ 0″	12″ 15″ 18″	3″ 3″ 3″	¼″ ¼″ ¼″
5′ 0″	12″ 15″ 18″	3″ 3¼″ 3½″	¼″ ¼″ ¼″
6′ 0″	12″ 15″ 18″ 21″ 24″	3″ 3¼″ 3½″ 3¾″ 4″	¼″ ¼″ ¼″ ¼″ ¼″
7′ 0″	12″ 15″ 18″ 21″ 24″	3″ 3¼″ 3½″ 3¾″ 4″	¼″ ¼″ 5/16″ 5/16″ 5/16″
8′ 0″	12″ 15″ 18″ 21″ 24″	3″ 3¼″ 3½″ 3¾″ 4″	5/16″ 5/16″ 5/16″ 5/16″ 5/16″
9′ 0″	12″ 15″ 18″ 21″ 24″	4″ 4¼″ 4½″ 4¾″ 5″	5/16″ 5/16″ 5/16″ ⅜″ ⅜″
10′ 0″	12″ 15″ 18″ 21″ 24″	5¼″ 5½″ 6″ 6¼″ 6½″	⅜″ ⅜″ ⅜″ ⅜″ ⅜″

Half beams in way of hatches, hatch end beams, carlings, hanging knees, lodging knees, and pillars, shall be of ample strength and suitably arranged.

(2) Hatchways shall be provided with efficient means of battening down.

(3) Flush deck scuttles shall be of substantial steel or bronze construction with screw or bayonet joints and shall be secured or attached by a permanent chain.

112. DOORS, SILLS, SIDE SCUTTLES AND ESCAPE HATCHES.

(1) The sills of doors giving access to the main hull shall have a minimum height of 12 inches, but doors situated on top of any superstructure deck house, or raised forecastle, may have sills of not less than 6 inches in height.

(2) Onderhewig aan die bepalings van paragraaf (3), moet patryspoorte wat onderkant die dek wat aan wind en weer blootgestel is, geleë is, toegerus word met doeltreffende blinde ligte.

(3) Die bepalings van paragraaf (2) is nie van toepassing op patryspoorte of vensters waarvan die vensterbanke meer as 8 voet 6 duim. bokant die dek wat aan wind en weer blootgestel is, is nie, ook nie op enige patryspoort of venster indien die opnemer, weens die aard van die reis van die boot, sodanige bepalings onnodig ag nie.

(4) Deure wat toegang verleen na die hoofromp moet sterk gebou en aan stewige skarniere gehang word, en sluitinrigtings moet sodanig wees dat 'n deur van albei kante oopgemaak kan word.

(5) Waar die toegang na die bemanningsruim deur die enjinkamer gaan, moet 'n noodluik van sodanige ruim na die oop dek aangebring word.

113. VERSKANSINGS.

(1) Onderhewig aan die bepalings van paragrawe (2) en (3), moet verskansings, relings, kettings, draadtoue of enige kombinasie daarvan, rondom die dek wat aan wind en weer blootgestel is, minstens 30 duim bokant daardie dek, aangebring word.

(2) Indien die opnemer van mening is dat die verskansings, relings, kettings en draadtoue in paragraaf (1) genoem, die visvangbedrywighede van die boot sal benadele, mag hy toelaat dat daarmee weggedoen word.

(3) Die verskansings, relings, kettings en draadtoue in paragraaf (1) genoem, mag minder as 30 duim hoog wees by dekhuise indien doeltreffende handrelings aan die kante van sulke dekhuise aangebring word.

(4) Waterafvoerpoorte moet voldoende wees vir die doeltreffende dreinering van water op die dek en moet doeltreffend geleë wees. Met verskansings van hout moet die oppervlakte van waterafvoerpoorte nie minder wees as die ekwivalent van 'n deurlopende 1½ duim gaping aan elke kant van die boot nie. In staalverskansings moet die oppervlakte van waterafvoerpoorte nie minder wees as die ekwivalent van 'n appervlakte van 1 vierkant voet per 6 voet lengte verskansing nie. Voornoemde oppervlaktes is in verhouding met 'n verskansingshoogte van 30 duim en moet paslik vermeerder word vir groter hoogtes.

114. VENTILASIE.

(1) Ventileerders moet voldoende in getal en grootte wees om genoegsame ventilasie te verskaf vir alle ruimtes wat volgens die opnemer se mening ventilasie nodig het.

(2) Bemanningslaapruimtes op 'n boot moet van inlaat- en uitlaatventileerders voorsien word wat voldoende is om 3 vierkante duim inlaatoppervlakte en 3 vierkante duim uitlaatoppervlakte vir elke bemanningslid wat daardie ruimtes vir slaapdoeleindes gebruik, te verskaf.

(3) Om die gevaar van brand te vermy, moet spesiale aandag geskenk word aan die posisie en ventilasie van batterye.

115. SKROEFASKUSSINGBLOKKE.

Skroefaskussingblokinrigtings moet bestaan uit—

(*a*) 'n skroefaskussingblok van minstens drie en 'n halwe asdeursnee in die lengte;

(*b*) 'n drukstuk wat binne die boot geleë is; en

(*c*) 'n waterdigte buis wat tussen die kussingblok en die drukstuk aangebring is.

116. TOETS VAN WATERDIGTE AFDELINGS.

(1) Die beskotte van 'n boot wat van hout gebou is, moet voordat die skip te water gelaat word, tot bevrediging van die opnemer getoets word deur slangdruk of ander geskikte middels: Met die voorbehoud dat hierdie vereiste slegs van toepassing is op beskotte wat bedoel is om waterdig te wees.

(2) Subject to the provisions of paragraph (3), side scuttles fitted below the weatherdeck shall be fitted with efficient deadlights.

(3) The provisions of paragraph (2) shall not apply to side scuttles or windows, the sills of which are more than 8 feet 6 inches above the weatherdeck, nor to any side scuttle or window when due to the nature of the voyage of the boat, the surveyor considers such provisions unnecessary.

(4) Doors giving access to the main hull shall be strongly constructed and hung on substantial hinges, and locking arrangements shall be such that a door can be opened from either side.

(5) Where entrance to the crew space is by way of the engine room, an escape hatch shall be fitted from such space to the open deck.

113. BULWARKS.

(1) Subject to the provisions of paragraphs (2) and (3), bulwarks, rails, chains, wire ropes, or any combination thereof, shall be fitted around the weather deck, at least 30 inches in height above that deck.

(2) If the surveyor considers that the bulwarks, rails, chains and wire ropes mentioned in paragraph (1) would interfere with the fishing operations of the boat, he may allow them to be dispensed with.

(3) The bulwarks, rails, chains and wire ropes mentioned in paragraph (1), may be less than 30 inches in height in way of deckhouses if suitable handrails are fitted on the sides of such deckhouses.

(4) Freeing ports shall be sufficient for the purpose of efficient drainage of water on deck, and shall be suitably situated. With bulwarks of wood construction the area of freeing ports shall not be less than the equivalent of a continuous 1½ inch gap on each side of the boat. In steel bulwarks the area of freeing ports shall not be less than the equivalent of an area of 1 square foot per 6 feet length of bulwark. The aforesaid areas are in association with a bulwark height of 30 inches, and shall be suitably increased for greater heights.

114. VENTILATION.

(1) Ventilators shall be sufficient in number and size to provide adequate ventilation for all spaces which, in the opinion of the surveyor, require ventilation.

(2) Crew sleeping spaces on a boat shall be provided with inlet and exhaust ventilators sufficient to provide 3 square inches inlet area and 3 square inches outlet area for each member of the crew using those spaces for sleeping purposes.

(3) To avoid risk of fire, special attention shall be paid to the position and ventilation of batteries.

115. STERN BEARINGS.

Stern bearing assemblies shall consist of—

(*a*) a stern bearing of not less than three and one half shaft diameters in length;

(*b*) a gland situated inside the boat; and

(*c*) a watertight tube fitted between the bearing and the gland.

116. TESTING OF WATERTIGHT COMPARTMENTS.

(1) The bulkheads of a wooden boat shall before the boat is launched, be tested to the satisfaction of the surveyor, by hose pressure or other suitable means: Provided that this requirement shall apply only to bulkheads which are intended to be watertight.

(2) Voordat 'n boot van staal te water gelaat word, moet die afdelings in die hoofromp, voordat daar met enige binding begin word, soos volg aan slang- of druktoetse onderwerp word:—

(*a*) Dubbele bodems wat nie vir die vervoer van olie gebruik word nie moet getoets word tot by 'n waterdrukhoogte gelykstaande aan die maksimum drukhoogte wat in diens verwag kan word;

(*b*) diep tenks en piektenks gebruik vir die vervoer van water, en diep tenks en dubbele-bodemtenks ingerig vir die vervoer van oliebrandstof, moet getoets word tot by 'n waterdrukhoogte gelykstaande aan die maksimum drukhoogte waaraan die tenks in gebruik onderwerp kan word, maar nie minder as agt voet bokant die toppunte van die tenks waar die holte ooreenkomstig die mal tot die sterktedek meer as 16 voet is, en drie voet waar die holte ooreenkomstig die mal hoogstens 10 voet is, intermediêre drukhoogtes kan deur interpolasie verkry word;

(*c*) piekbeskotte wat nie die grense van tenks vorm nie moet getoets word deur die pieke met water te vul;

(*d*) waterdigte beskotte, met inbegrip van nisse en waterdigte vlakke, waterdigte tonnels, dekke beskut teen wind en weer en waterlope, moet met 'n slang getoets word; die druk van die water in die slang mag nie minder as 30 pond per vierkant duim wees nie; en

(*e*) waterdigte deure moet onder werkstoestande op die proef gestel word en met 'n slang getoets word; die druk in die slang mag nie minder as 30 pond per vierkant duim wees nie.

117. Ankers en kabels.

(1) Elke boot van 25 bruto-registerton of meer moet minstens twee ankers hê, een met 'n gewig van nie minder as dié wat van die volgende tabel verkry word nie, en een met 'n gewig van minstens twee-derdes van dié wat van daardie tabel verkry word:—

Lengte van boot in voet.	Gewig van anker in ponde.	Minimum grootte van ketting, in duim.	Getal 15 vademlengtes.
10 tot 20.....	50	5/16	1
Oor 20 tot 40.....	110	3/8	2
Oor 40 tot 60.....	150	7/16	4
Oor 60 tot 80.....	180	1/2	6

(2) Elke boot van minder as 25 bruto-registerton moet een anker hê met 'n gewig van nie minder as dié wat van die tabel wat in paragraaf (1) verskyn, verkry word nie.

(3) Elke boot moet ankerkabels ooreenkomstig die tabel wat in paragraaf (1) verskyn, hê: Met dien verstande dat bote van 10 tot 20 voet in lengte manillatou of draadtou van gelyke sterkte kan hê in plaas van ankerkettings.

118. Alternatiewe stuurinrigtings.

Alle bote moet voorsien word van alternatiewe stuurmiddels geskik vir hulle grootte en die tipe inrigting wat gebruik word. In die geval van klein bote kan die alternatiewe stuurinrigtings bestaan uit 'n verlenging na die roerkoning met 'n vierkantige endpunt, in verbinding met 'n spaar roerpen. Die dekverbinding moet waterdig gemaak word.

HOOFSTUK III.—PERIODIEKE ONDERSOEKE.

119. Algemeen.

Die romp, stoomketel, masjinerie en toerusting van 'n boot moet ondersoek word met die tussenposes en op die wyse wat in regulasies 120 tot en met 134 uiteengesit word.

(2) Before a steel boat is launched, the compartments within the main hull shall, before any cementing is commenced, be subjected to hose or pressure tests as follows:—

(*a*) Double bottoms which are not to be used for the carrying of oil, shall be tested to a head of water equal to the maximum head which can be expected in service;

(*b*) deep tanks and peak tanks used for carrying water, and deep tanks and double bottom tanks arranged for carrying oil fuel, shall be tested to a head of water equal to the maximum head to which the tanks can be subjected in service, but not less than 8 feet above the crowns of the tanks where the moulded depth to the strength deck exceeds 16 feet, and 3 feet where the moulded depth does not exceed 10 feet, intermediate heads may be obtained by interpolation;

(*c*) peak bulkheads which do not form the boundaries of tanks, shall be tested by filling the peaks with water;

(*d*) watertight bulkheads, including recesses and watertight flats, watertight tunnels, weather decks and waterways, shall be hose tested; the pressure of water in the hose shall not be less than 30 pounds per square inch; and

(*e*) watertight doors shall be tried under working conditions and hose tested; the pressure in the hose shall be not less than 30 pounds per square inch.

117. Anchors and Cables.

(1) Every boat of 25 gross register tons or over shall carry at least two anchors, one of a weight not less than that derived from the following table, and one of a weight not less than two-thirds of that derived from that table.

Length of Boat in Feet.	Weight of Anchor in Pounds.	Minimum Size of Chain in Inches.	Number of 15 Fathom Lengths.
10 to 20.....	50	5/16	1
Over 20 to 40....	110	3/8	2
Over 40 to 60....	150	7/16	4
Over 60 to 80....	180	1/2	6

(2) Every boat of less than 25 gross register tons shall carry one anchor of a weight not less than that derived from the table appearing in paragraph (1).

(3) Every boat shall carry anchor cable in accordance with the table appearing in paragraph (1): Provided that boats of 10 to 20 feet in length may carry manila rope or wire rope of equivalent strength in lieu of chain cable.

118. Alternative Steering Arrangements.

All boats shall be provided with alternative means of steering suitable to their size and the type of gear used. In the case of small boats, the alternative steering arrangements may consist of an extension to the rudder stock with a square end, in combination with a spare tiller. The deck connection shall be made watertight.

CHAPTER III.—PERIODIC SURVEYS.

119. General.

The hull, boiler, machinery and equipment of a boat shall be surveyed at the intervals and in the manner set forth in regulations 120 to 134 inclusive.

120. STOOMKETELS WAT VOLLEDIG INWENDIG ONDERSOEK KAN WORD.

(1) 'n Stoomketel wat volledig inwending ondersoek kan word, moet voordat die ondersoek begin, heeltemal daarvoor geopen word en alle dele moet deeglik skoongemaak word tot bevrediging van die opnemer. Stoomketelmonterings moet oopgemaak en skoongemaak word en alle kleppe moet geslyp word, soos nodig mag wees. Enige deel wat verhoed dat die stoomketel behoorlik ondersoek word, moet verwyder word en die stoomketel moet gelig word indien die opnemer 'n verdere ondersoek van die bodem daarvan nodig ag. Bekleding moet verwyder word indien die opnemer dit nodig ag.

(2) Die stoomketel moet hidrolies getoets word tot $1\frac{1}{2}\times$ werkdruk met tussenpose van nie meer as vier jaar nie; met dien verstande dat indien groot herstellings aan die stoomketel uitgevoer word, dit so getoets moet word onmiddellik nadat sodanige reparasies voltooi is.

(3) Waar stoom in 'n ketel ontwikkel word na 'n ondersoek, moet die veiligheidskleppe in die teenwoordigheid van die opnemer tot by die toegewysde druk gestel word en die opnemer moet verseker dat middels aangebring word om te verhoed dat daar later bemoeiing met die verstelling plaasvind. Die toegewysde druk moet deur die opnemer bepaal word wat die ontwerpdruk en die algemene toestand van die stoomketel in aanmerking moet neem. Indien die opnemer dit verlang, moet enige reparasies voltooi word voordat die druk toegewys word.

121. STOOMKETELS WAT NIE VOLLEDIG INWENDIG ONDERSOEK KAN WORD NIE.

Stoomketels wat nie volledig inwendig ondersoek kan word nie moet behandel word ooreenkomstig die bepalings van regulasie 120: Met dien verstande dat sulke stoomketels by elke jaarlikse ondersoek in die teenwoordigheid van die opnemer, hidrolies getoets moet word tot $1\frac{1}{2}\times$ werkdruk.

122. STOOMPYPE.

(1) Onderhewig aan die bepalings van paragrawe (2) en (3), moet hoofstoompype en hulpstoompype met 'n inwendige deursnee van meer as 3 duim met die volgende tussenposes in die teenwoordigheid van die opnemer met hidroliese druk getoets word tot twee keer die werkspanning:—

(*a*) Pype van yster, staal of soliedgetrokke koper—elke ses jaar.

(*b*) koperpype met hardgesoldeerde langsnate—elke vier jaar.

(2) Ten tye van die toetse voorgeskryf in paragraaf (1) of te eniger ander tyd indien dit nodig geag word, moet die opnemer die pype noukeurig ondersoek, en enige pyp moet te eniger tyd verwyder word en hidrolies getoets word indien daar rede is om te meen dat sy toestand nie bevredigend is nie.

(3) Indien die opnemer dit nodig ag, moet koperpype uitgegloei word, en dit moet gewoonlik ten tye van die hilroliese toets gedoen word.

123. STOOMAANGEDREWE ENJINS EN HULPENJINS.

(1) Stoomaangedrewe enjins en hulpenjins moet elke twee jaar heeltemal oopgemaak word vir ondersoek: Met dien verstande dat in die geval van 'n boot met 'n dubbele skroef, een enjin elke jaar oopgemaak kan word. Alle suiers, silinders, skuifkleppe, kussingblokke en aste, moet vir ondersoek beskikbaar wees, en indien die opnemer dit nodig ag, moet die bedekkings van pompe, klepkaste, kondensators, verdampers, voedingsverhitters, suiweraars, brandstoftenks en ander kleppe verwyder word.

(2) Met elke jaarlikse ondersoek moet alle hoof- en hulpmasjinerie noodsaaklik vir die veilige werking van die boot, waar moontlik aan 'n proefwerking onderwerp word wat deur die opnemer bygewoon moet word en moet hy besluit of die masjinerie en stoomketels in 'n bevredigende toestand is.

120. BOILERS WHICH PERMIT OF A FULL INTERNAL EXAMINATION.

(1) A boiler which permits of a full internal examination shall before survey commences, be completely opened out for survey, and all parts shall be thoroughly cleaned to the satisfaction of the surveyor. Boiler mountings shall be opened out and cleaned and all valves ground in, as may be necessary. Any part which prevents proper examination of the boiler, shall be removed, and the boiler shall be lifted if the surveyor considers a further examination of the underside thereof necessary. Lagging shall be removed if the surveyor considers it necessary.

(2) The boiler shall be hydraulically tested to $1\frac{1}{2}\times$ working pressure at intervals not exceeding four years: Provided that if major repairs are effected to the boiler, it shall be so tested immediately upon completion of such repairs.

(3) When steam is raised in a boiler after survey, the safety valves shall in the presence of the surveyor, be set to the assigned pressure, and the surveyor shall ensure that means are provided to prevent subsequent tampering with the adjustment of the valves. The assigned pressure shall be decided by the surveyor who shall bear the designed pressure and the general condition of the boiler in mind. If the surveyor requires it, any repairs shall be completed before the pressure is assigned.

121. BOILERS WHICH DO NOT PERMIT OF A FULL INTERNAL EXAMINATION.

Boilers which do not permit of a full internal examination, shall be dealt with in accordance with the provisions of regulation 120: Provided that such boilers shall, in the presence of the surveyor, be hydraulically tested to $1\frac{1}{2}\times$ working pressure at every annual survey.

122. STEAM PIPES.

(1) Subject to the provisions of paragraphs (2) and (3), main steam pipes and auxiliary steam pipes with an internal diameter of over 3 inches, shall in the presence of the surveyor, be tested by hydraulic pressure to twice the working pressure at the following intervals:—

(*a*) Pipes of iron, steel, or solid drawn copper—every six years;

(*b*) copper pipes having brazed longitudinal seams—every four years.

(2) At the time of the tests prescribed in paragraph (1) or at any other time if it is deemed necessary, the surveyor shall examine the pipes thoroughly, and any pipe shall be removed and hydraulically tested at any time if there is reason to believe that is condition is unsatisfactory.

(3) If the surveyor considers it necessary, copper pipes shall be annealed, and this shall generally be done at the time of the hydraulic test.

123. STEAM PROPULSION ENGINES AND AUXILIARIES.

(1) Steam propulsion engines and auxiliaries shall every two years be completely opened up for survey: Provided that in the case of a twin-screw boat, one engine may be opened up each year. All pistons, cylinders, slide valves, bearings and shafts, shall be available for examination, and if considered necessary by the surveyor, the covers of pumps, valve chests, condensers, evaporators, feed heaters, filters, fuel tanks, and other valves, shall be removed.

(2) At each annual survey, a running trial shall when possible, be held on all main and auxiliary machinery essential to the safe operation of the boat, and shall be witnessed by the surveyor, who shall decide whether the machinery and boilers are in a satisfactory condition.

124. HOOF- EN HULPMASJINERIE VAN 'N BOOT MET 'N LENGTE VAN HOOGSTENS 70 VOET.

(1) Die hoof- en hulpmasjinerie van 'n boot hoogstens 70 voet in lengte en aangedrewe deur binnebrandmasjinerie, word nie normaalweg vereis om vir ondersoek geopen te word nie, behalwe vir die periodieke hidroliese toets van lughouers soos in regulasie 126 voorgeskryf.

(2) Met elke jaarlikse ondersoek moet 'n proefwerking van die masjinerie deur die opnemer bygewoon word en moet hy besluit of enige reparasies nodig is, en kan hy vereis dat enige deel vir ondersoek oopgemaak word.

125. HOOF- EN HULPMASJINERIE VAN 'N BOOT MET 'N LENGTE VAN MEER AS 70 VOET.

(1) Die hoof- en hulpmasjinerie van 'n boot van meer as 70 voet in lengte en wat deur binnebrandmasjinerie aangedryf word, moet elke twee jaar vir ondersoek heeltemal oopgemaak word, volgens die goeddunke van die opnemer.

(2) 'n Proefwerking van die masjinerie moet met elke jaarlikse ondersoek deur die opnemer bygewoon word, en enige reparasies wat hy nodig ag, moet aangebring word.

126. LUGHOUERS.

Alle lughouers op elke boot moet hidrolies getoets word tot by 'n druk van $1\frac{1}{2}$ × werkdruk met tussenpose van hoogstens 4 jaar.

127. ELEKTRIESE MASJINERIE.

Die elektriese masjinerie en bedrading van elke boot wat so toegerus is, moet met elke jaarlikse ondersoek deur die opnemer ondersoek word. 'n Isolasietoets moet uitgevoer word indien die opnemer dit nodig ag. Die isolasieweerstand van afsonderlike stroombane mag oor die algemeen nie minder as 100,000 ohms wees nie.

128. STAALROMPE: DROOGDOK.

(1) 'n Boot met 'n staalromp moet met tussenpose van hoogstens een jaar in droogdok of op 'n sleephelling geplaas word sodat die opnemer die buitekant van die romp kan ondersoek.

(2) Die romp moet deeglik binnekant en buitekant skoongemaak word maar nie geverf word nie, en sulke boortoetse van die rompbeplating as wat die opnemer mag vereis, moet uitgevoer word.

(3) Die opnemer moet alle dele van die romp binnekant en buitekant ondersoek, en indien hy dit nodig ag, moet plafonisolering, steenkool, ens. verwyder word sodat 'n deeglike ondersoek gedoen kan word. Alle sluitingsapparaat vir dekopenings en alle luikhoofde, ventileerders en dekhuise moet noukeurig deur die opnemer ondersoek word.

129. HOUTROMPE: DROOGDOK.

(1) 'n Boot met 'n houtromp moet met tussenpose van hoogstens een jaar in droogdok of op 'n sleephelling geplaas word of doeltreffend op blokke gesteun word, sodat die opnemer die buitekant van die romp kan ondersoek. Die romp moet deeglik skoongemaak word, binne sowel as buite, maar nie geverf word nie, en sulke toetse van die beplanking as wat die opnemer nodig ag om die dikte daarvan te bepaal moet gedoen word.

(2) Die opnemer moet besondere aandag wy aan die toestand van bevestigingsmiddels, veral aan die ente, en enige planke waaroor daar twyfel bestaan, moet verwyder word vir verdere ondersoek en vervanging, indien nodig.

(3) Waterdigte beskotte, tesame met alle verstywings en bevestigingsmiddels moet in 'n goeie toestand gehou word. Die opnemer moet hierdie en alle ander dele van die romp inwendig sowel as uitwendig ondersoek met elke jaarlikse ondersoek, en indien hy dit nodig ag, moet plafonisolering, steenkool, ens. verwyder word sodat 'n deeglike ondersoek gedoen kan word. Alle sluitingsapparaat vir dekopenings, en alle luikhoofde, ventileerders en dekhuise moet deeglik deur die opnemer ondersoek word.

124. MAIN AND AUXILIARY MACHINERY OF A BOAT NOT EXCEEDING 70 FEET IN LENGTH.

(1) The main and auxiliary machinery of a boat not exceeding 70 feet in length and propelled by internal combustion machinery, shall not normally be required to be opened up for survey except for the periodic hydraulic testing of air receivers prescribed in regulation 126.

(2) At each annual survey, a running trial of the machinery shall be witnessed by the surveyor, who shall decide if any repairs are necessary and who may require any part to be opened up for survey.

125. MAIN AND AUXILIARY MACHINERY OF A BOAT EXCEEDING 70 FEET IN LENGTH.

(1) The main and auxiliary machinery of a boat exceeding 70 feet in length and propelled by internal combustion machinery, shall be completely opened up for survey every two years at the discretion of the surveyor.

(2) A running trial of the machinery shall at every annual survey, be witnessed by the surveyor and any repairs which he may consider necessary shall be effected.

126. AIR RECEIVERS.

All air receivers on any boat shall be hydraulically tested to a pressure of $1\frac{1}{2}$ × working pressure at intervals not exceeding 4 years.

127. ELECTRICAL MACHINERY.

The electrical machinery and wiring of every boat so equipped, shall be examined by the surveyor at every annual survey. An insulation test shall be conducted if the surveyor considers it necessary. The insulation resistance of individual circuits should not generally be less than 100,000 ohms.

128. STEEL HULLS: DRY DOCKING.

(1) A boat with a steel hull shall at intervals not exceeding one year, be placed in dry dock or on a slipway for examination of the outside of the hull by the surveyor.

(2) The hull shall be thoroughly cleaned down, inside and outside, but not painted, and such drill tests of the hull plating as may be required by the surveyor shall be carried out.

(3) The surveyor shall examine all parts of the hull internally and externally, and if he considers it necessary ceiling insulation, coal, etc., shall be removed to enable a thorough examination to be made. All closing appliances for deck openings, and all coamings, ventilators and deck houses, shall be thoroughly examined by the surveyor.

129. WOODEN HULLS: DRY DOCKING.

(1) A boat with a wooden hull shall at intervals not exceeding one year, be placed in dry dock or on a slipway, or suitably supported on blocks, for examination of the outside of the hull by the surveyor. The hull shall be thoroughly cleaned down, inside and outside, but not painted, and such tests of the planking shall be made as the surveyor considers necessary to determine the thickness.

(2) Special attention shall be paid by the surveyor to the condition of fastenings, particularly at the ends, and any doubtful planks shall be removed for further examination and renewal, if necessary.

(3) Watertight bulkheads, together with all stiffeners and fastenings, shall be maintained in good condition. The surveyor shall examine these and all other parts of the hull internally and externally at every annual survey, and if he considers it necessary, ceiling insulation, coal, etc., shall be removed to enable a thorough examination to be made. All closing appliances for deck openings, and all coamings, ventilators and deck houses shall be thoroughly examined by the surveyor.

130. Skroefasse.

Die skroefasse of asse van elke boot moet met tussenpose van hoogstens twee jaar vir ondersoek uitgetrek word: Met die voorbehoud dat die opnemer 'n verlenging na drie jaar kan toestaan vir 'n boot wat met spesiale inrigtings vir assmering toegerus is.

131. Seeverbindingskleppe.

Alle seeverbindingskleppe en -krane moet ten tye van die jaarlikse uitwendige ondersoek van die romp geopen word. Indien die opnemer dit nodig ag, moet enige klep of kraan hernu of herstel word, en enige verbinding aan die kant van die boot moet ooreenkomstig sy vereistes bevestig word.

132. Roers.

Die roers van elke boot moet ten tye van die jaarlikse uitwendige ondersoek van die romp gelig word indien die opnemer dit nodig ag, en enige herstelwerk of hernuwings wat nodig is, moet uitgevoer word.

133. Ankers, kabels en stuurkettings.

Die ankers van elke boot moet met elke jaarlikse ondersoek deur die opnemer ondersoek word en die kabels moet ten tye van die jaarlikse droogdokondersoek vir sy inspeksie opgestel word. Waar die ketting so deurgeslyt is dat die gemiddelde deursnee van enige deel verminder is tot die minimumgrootte wat in die volgende tabel aangetoon word, moet daardie deel hernu word. Hierdie tabel is ook van toepassing op die hernuwing van stuurkettings:—

Stuurkettings en ankerkettings.

Tabel wat oorspronklike gemiddelde deursnee en verminderde gemiddelde deursnee wat hernuwing vereis aandui.

Oorspronklike vereiste gemiddelde deursnee, duime.	Verminderde gemiddelde deursnee wat hernuwing vereis.
5/16"	9/32"
3/8"	11/32"
7/16"	13/32"
1/2"	7/16"
9/16"	1/2"
5/8"	9/16"
11/16"	5/8"
3/4"	21/32"
13/16"	23/32"
7/8"	25/32"
15/16"	27/32"
1"	29/32"
1 1/16"	15/16"
1 1/8"	1"
1 3/16"	1 1/16"
1 1/4"	1 1/8"
1 5/16"	1 3/16"
1 3/8"	1 7/32"
1 7/16"	1 9/32"
1 1/2"	1 11/32"
1 9/16"	1 13/32"
1 5/8"	1 15/32"

Die oorspronklike vereiste gemiddelde deursnee moet van die roerskets bereken word wanneer dit vir goedkeuring voorgelê word, en moet op die plan aangeteken word. Die opnemer moet 'n geskikte grootte bepaal vir 'n boot waarvan die stuurketting en ankerkettings hernu moet word, wanneer sodanige grootte nie op hierdie wyse bepaal is nie.

134. Stuurinrigting en Noodinrigtings.

Die stuurinrigting en noodinrigtings moet elke jaarlikse ondersoek noukeurig deur die opnemer ondersoek word, en enige dele moet oopgemaak word indien hy dit nodig ag. Die hoof- en hulpstuurinrigtings moet met elke sodanige ondersoek op die proef gestel word.

135. Veranderings aan romp.

Geen verandering wat die tonnemaat beïnvloed mag aan die romp van enige boot aangebring word nie behalwe ten tye van ondersoek, en enige sodanige verandering is onderworpe aan die goedkeuring van die opnemer wat vooraf verkry moet word.

130. Tail Shafts.

The tail shaft or shafts of every boat shall be drawn for examination at intervals not exceeding two years: Provided that the surveyor may permit an extension to three years for a boat which is fitted with special arrangements for shaft lubrication.

131. Sea Connection Valves.

All sea connection valves and cocks shall be opened up at the time of the annual survey of the hull externally. If the surveyor considers it necessary, any valve or cock shall be renewed or repaired, and any connection to the boat's side shall be fastened in accordance with his requirements.

132. Rudders.

The rudder of every boat shall be lifted at the time of the annual survey of the hull externally, if the surveyor considers it necessary, and any necessary repairs or renewals shall be effected.

133. Anchors, Cables and Steering Chains.

The anchors of every boat shall be examined by the surveyor at every annual survey, and the cables shall be ranged for his examination at the time of the annual dry dock survey. Where the chain is worn to such an extent that the mean diameter of any part is reduced to the minimum size shown in the following table as requiring renewal, that part shall be renewed. This table shall also apply for the renewal of steering chains:—

Steering Chains and Anchor Chains.

Table showing original mean diameter and reduced mean diameter requiring renewal:—

Original Required Mean Diameter, Inches.	Reduced Mean Diameter Requiring Renewal.
5/16"	9/32"
3/8"	11/32"
7/16"	13/32"
1/2"	7/16"
9/16"	1/2"
5/8"	9/16"
11/16"	5/8"
3/4"	21/32"
13/16"	23/32"
7/8"	25/32"
15/16"	27/32"
1"	29/32"
1 1/16"	15/16"
1 1/8"	1"
1 3/16"	1 1/16"
1 1/4"	1 1/8"
1 5/16"	1 3/16"
1 3/8"	1 7/32"
1 7/16"	1 9/32"
1 1/2"	1 11/32"
1 9/16"	1 13/32"
1 5/8"	1 15/32"

The original required mean diameter shall be calculated from the rudder plan when submitted for approval, and shall be noted on the plan. The surveyor shall determine a suitable size for a boat which requires renewal of its steering chain and anchor chains when such size has not been determined in this manner.

134. Steering Gear and Emergency Arrangements.

The steering gear and emergency arrangements shall be thoroughly examined by the surveyor at every annual survey, and any parts shall be opened up if he considers it necessary. The main and emergency steering arrangements shall be tried at every such survey.

135. Alterations to Hull.

No alteration affecting the tonnage shall be made to the hull of any boat except at the time of survey, and any such alteration shall be subject to the prior approval of the surveyor.

136. BYKOMSTIGE ONDERSOEKE.

Nieteenstaande die vereistes van hierdie Hoofstuk, kan daar te enige tyd deur die Sekretaris, bevoegde beampte of opnemer op enige boot 'n beroep gedoen word om sulke bykomstige ondersoeke wat om enige rede nodig geag mag word, te ondergaan. Daarbenewens kan die opnemer ten tye van die jaarlikse ondersoek of ten tye van enige bykomstige ondersoek deur hierdie regulasie bepaal, volgens sy goeddunke vereis dat enige deel oopgemaak word en kan hy die hernuwing van dele of uitrusting vereis, of die toerus van enige bykomstige deel of dele wat nodig geag word vir die veiligheid en seewaardigheid van die boot. Die opnemer kan te enige tyd aan boord enige boot gaan en moet deur die eienaar of gesagvoerder toegelaat word om enige ondersoek wat hy nodig ag, uit te voer.

HOOFSTUK IV.—VRYSTELLINGS EN GELYKWAARDIGHEDE.

137. VRYSTELLING VAN BOTE WAT VOOR 'N BEPAALDE DATUM GEBOU IS.

Die Sekretaris kan enige boot wat voor die datum van inwerkingtreding van hierdie Deel gebou is en nie 'n skip is wat op of na daardie datum in 'n boot omskep is nie, van die vereistes van hierdie Deel vrygestel in soverre hy tevrede is dat voldoening daaraan in die omstandighede onredelik of onprakties is.

138. ALGEMENE VRYSTELLING.

Die Sekretaris kan enige boot van enige van die vereistes van hierdie Deel vrystel indien hy van mening is dat sulke vereistes in die omstandighede onredelik of onprakties is

139. GELYKWAARDIGHEDE.

Waar hierdie Deel vereis dat enige bepaalde uitrusting verskaf moet word of dat enige besondere voorsiening gemaak moet word, kan die Sekretaris toelaat dat enige ander uitrusting verskaf word of voorsiening gemaak word, indien hy tevrede is met die doeltreffendheid van sodanige uitrusting of voorsiening.

(*Regulasie* 7.)

EERSTE BYLAE.

BEREKENING VAN MAKSIMUM LENGTE VAN WATERDIGTE AFDELINGS.

DEEL I.

1. ALGEMEEN.

In hierdie Bylae, behalwe waar anders gespesifiseer—

(*a*) moet alle lineêre afmetings in voet wees;

(*b*) moet alle volumes in kubieke voet wees en moet volgens afmetings tot buitekant die spante gemeet word;

(*c*) dui die simbool „ L " die lengte van die skip aan;

(*d*) omvat die uitdrukking „ passasiersruimtes " kombuise, wasserye en ander soortgelyke ruimtes wat vir die bediening van passasiers voorsien is, bo en behalwe die ruimte wat vir die gebruik deur passasiers voorsien is;

(*e*) beteken die „ Minister " die Minister of die Sekretaris, na gelang van die geval.

(LET WEL.—Sien artikels *honderd twee-en-neëntig, honderd drie-en-neëntig* en *honderd vier-en-neëntig* van die Wet).

2. TOELAATBARE LENGTE.

Behoudens die bepalings van paragraaf 6, mag die lengte van 'n afdeling sy toelaatbare lengte nie oorskry nie. Die toelaatbare lengte van 'n afdeling met sy middelpunt op enige punt is die produk van die vulbare lengte op daardie punt en die indelingsfaktor van die skip.

136. ADDITIONAL SURVEYS.

Notwithstanding the requirements of this Chapter, any boat may be called upon at any time by the Secretary, proper officer or surveyor to undergo such additional surveys as are deemed necessary for any reason. Further, at the time of the annual survey, or at the time of any additional surveys required by this regulation, the surveyor may require any part to be opened up at his discretion, and may require any renewals of parts or fittings, or the fitting of any additional part or parts considered necessary for the safety and seaworthiness of the boat. The surveyor may board any boat at any time, and shall be allowed by the owner or master to carry out any examination he considers necessary.

CHAPTER IV.—EXEMPTIONS AND EQUIVALENTS.

137. EXEMPTION OF BOATS CONSTRUCTED BEFORE A CERTAIN DATE.

The Secretary may exempt any boat which was constructed before the date of coming into force of this Part, not being a ship converted on or after that date as a boat, from the requirements of this Part to the extent to which he is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.

138. GENERAL EXEMPTION.

The Secretary may exempt any boat from any of the requirements of this Part, if he considers such requirements to be unreasonable or impracticable in the circumstances.

139. EQUIVALENTS.

Where this Part requires that any particular equipment shall be provided or any particular provision made, the Secretary may allow any other equipment to be provided or provision made, if he is satisfied with the effectiveness of such equipment or provision.

(*Regulation* 7.)

FIRST SCHEDULE.

CALCULATION OF MAXIMUM LENGTH OF WATERTIGHT COMPARTMENTS.

PART I.

1. GENERAL.

In this Schedule, except where otherwise specified—

(*a*) all linear measurements shall be in feet;

(*b*) all volumes shall be in cubic feet and shall be calculated from measurements taken to moulded lines;

(*c*) the symbol " L " denotes the length of the ship;

(*d*) the expression " passenger spaces " includes galleys, laundries and other similar spaces provided for the service of passengers, in addition to space provided for the use of passengers;

(*e*) the " Minister " means the Minister or the Secretary, as the case may be.

(NOTE.—See sections *one hundred and ninety-two, one hundred and ninety-three* and *one hundred and ninety-four* of the Act).

2. PERMISSIBLE LENGTH.

Subject to the provisions of paragraph 6, the length of a compartment shall not exceed its permissible length. The permissible length of a compartment having its centre at any point shall be the product of the floodable length at that point and the factor of sub-division of the ship.

DEEL II.

SKEPE VAN KLASSE I, II EN IIA, BEHALWE SKEPE WAAROP DEEL III VAN HIERDIE BYLAE VAN TOEPASSING IS.

3. VERONDERSTELLINGS VAN DEURDRINGBAARHEID.

Die veronderstellings van deurdringbaarheid wat by die bepaling van die vulbare lengte op enige punt in skepe, waarop hierdie Deel van toepassing is, in aanmerking geneem moet word is as volg:—

(*a*) Masjinerie:—

(i) In die geval van skepe wat nie deur middel van binnebrandenjins aangedryf word nie, moet die veronderstelde gemiddelde deurdringbaarheid van die masjinerieruim oral volgens onderstaande formule bereken word:—

$$80 + 12{\cdot}5\,\frac{(a - c)}{v}$$ waarin

a = die volume van die passasiersruimtes en bemanningsruimtes wat binne die grense van die masjinerieruim onderkant die indompelingsgrenslyn geleë is;
c = die volume van die tussendekruimtes wat binne die grense van die masjinerieruim onderkant die indompelingsgrenslyn geleë is, en aangewend word vir die opberging van vrag, steenkool of voorrade; en
v = die volume van die masjinerieruim onderkant die indompelingsgrenslyn.

(ii) In die geval van skepe wat deur middel van binnebrandenjins aangedryf word, moet die gemiddelde deurdringbaarheid van die masjinerieruim oral 5 groter geneem word as dié wat deur bostaande formule aangegee word.

iii) In die geval waarin die gemiddelde deurdringbaarheid oral in die masjinerieruim, soos deur regstreekse berekening bepaal, kleiner is as dié wat deur die formule aangegee word, kan die berekende waarde gebruik word. Vir die doel van sodanige berekening moet die deurdringbaarheid van die passasiersruimtes en bemanningsruimtes gestel word op 95, dié van alle ruimtes aangewend vir vrag, steenkool en voorraade op 60, en dié van dubbelbodem-, oliebrandstof en ander tenks wat deel uitmaak van die skeepsbou, gestel word op 95 of so 'n kleiner syfer as wat die Minister, in die geval van daardie skip, mag goedkeur.

(*b*) Gedeeltes voor en agter die masjinerieruim:—

(i) die veronderstelde gemiddelde deurdringbaarheid oor alle gedeeltes van die skip voor en agter die masjinerieruim, moet bereken word—

(*a*) volgens onderstaande formule:—

$$63 + 35\,\frac{a}{v}$$ waarin

a = die volume van die passasiersruimtes en bemanningsruimtes wat onder die indompelingsgrenslyn voor of agter die masjinerieruim, na gelang van die geval, geleë is; en
v = die volume van die gedeelte van die skip wat onder die indompelingsgrenslyn voor of agter die masjinerieruim, na gelang van die geval, geleë is; of

(*b*) indien die Minister so bepaal in die geval van enige skip te eniger tyd nie later as 40 dae nie nadat 'n opnemer 'n plan ontvang het van die skip wat die waterdigte indeling daarvan, aantoon, deur regstreekse berekening vir die doel waarvan die deurdringbaarheid van ruimtes aangeneem moet word as volg te wees:—

passasiersruimtes.....	95
bemanningsruimtes.....	95
ruimtes aangewend vir masjinerie.....	80
ruimtes aangewend vir vrag, steenkool, voorraad- of bagasiekamers.....	60
tenks wat deel uitmaak van die skeepsbou en dubbelhodems.....	95, of sodanige kleiner syfer as wat die Minister in die geval van enige skip mag toelaat.

(ii) Vir die doel van hierdie paragraaf, word 'n ruimte binne 'n passasiers- of bemanningsruimte, tensy dit vir ander doeleindes aangewend word en deur blywende staalbeskotte ingesluit is, beskou as 'n deel daarvan.

4. INDELINGSFAKTOR.

(1) Behoudens die bepalings van subparagraaf (4), in die geval van skepe waarvan die lengte 430 voet of groter is, word die indelingsfaktor F deur onderstaande formule bepaal:—

$$F = A - \frac{(A - B)(C_s - 23)}{100}$$

waar A en B onderskeidelik bepaal word ooreenkomstig die bepalings van subparagraaf (5) en C_s die kriteriumgetal is wat bepaal word ooreenkomstig die bepalings van paragraaf 5. Met dien verstande

PART II.

SHIPS OF CLASSES I, II AND IIA, OTHER THAN SHIPS TO WHICH PART III OF THIS SCHEDULE APPLIES.

3. ASSUMPTIONS OF PERMEABILITY.

The assumptions of permeability which shall be taken into account in determining the floodable length at any point in ships to which this Part applies, shall be as follows:—

(*a*) Machinery space:—

(i) In the case of ships not propelled by internal combustion engines, the assumed average permeability throughout the machinery space shall be determined by the following formula:—

$$80 + 12{\cdot}5\,\frac{(a - c)}{v}$$ where

a = volume of the passenger spaces and crew spaces below the margin line within the limits of the machinery space;
c = volume of the between deck spaces below the margin line within the limits of the machinery space which are appropriated to cargo, coal or stores; and
v = volume of the machinery space below the margin line.

(ii) In the case of ships propelled by internal combustion engines, the average permeability throughout the machinery space shall be taken as 5 greater than that given by the aforesaid formula.

iii) In any case in which the average permeability throughout the machinery space, as determined by detailed calculation, is less than that given by the aforesaid formula, the calculated value may be substituted. For the purposes of such calculation, the permeability of passenger spaces and crew spaces shall be taken to be 95, that of all spaces appropriated for cargo, coal or stores shall be taken to be 60, and that of double bottom, oil fuel and other tanks forming part of the structure of the ship shall be taken to be 95 or such lesser figure as the Minister may approve in the case of that ship.

(*b*) Portions before and abaft the machinery space:—

(i) the assumed average permeability throughout the portions of the ship before and abaft the machinery space shall be determined—

(*a*) by the following formula:—

$$63 + 35\,\frac{a}{v}$$ where

a = volume of the passenger spaces and crew spaces which are situated below the margin line before or abaft the machinery space, as the case may be, and
v = volume of the portion of the ship below the margin line before or abaft the machinery space, as the case may be; or

(*b*) if the Minister so determines in the case of any ship at any time not later than 40 days after a surveyor has received a plan of the ship showing the watertight subdivision thereof, by detailed calculation for the purpose of which the permeability of spaces shall be assumed to be as follows:—

passenger spaces.....	95
crew spaces.....	95
spaces appropriated to machinery.....	80
spaces appropriated to cargo, coal, stores or baggage rooms.....	60
tanks forming part of the structure of the ship and double bottoms.....	95, or such lesser figure as the Minister may permit in the case of any ship.

(ii) For the purposes of this paragraph, a space within a passenger space or crew space, shall be deemed to be a part thereof unless it is appropriated for other purposes and is enclosed by permanent steel bulkheads.

4. FACTOR OF SUBDIVISION.

(1) Subject to the provisions of sub-paragraph (4), in the case of ships the length of which is 430 feet or more, the factor of subdivision F shall be determined by the following formula:—

$$F = A - \frac{(A - B)(C_s - 23)}{100}$$

where A and B are respectively determined in accordance with the provisions of sub-paragraph (5) and C_s is the criterion numeral determined in accordance with the provisions of paragraph 5. Provided

dat waar in die geval van enige skip die faktor F kleiner as ·4 is en die Minister oortuig is dat die toepassing van die faktor F by die bepaling van die toelaatbare lengte van 'n afdeling wat vir masjinerie aangewend word, onprakties is, hy 'n groter faktor van hoogstens ·4 vir toepassing op daardie afdeling kan goedkeur.

(2) Behoudens die bepalings van subparagraaf (4), in die geval van skepe waarvan die lengte minder as 430 voet is maar nie minder as 260 voet nie met 'n kriteriumgetal van minstens

$$\frac{4691 - 10L}{17}$$

(waarna hierna in hierdie paragraaf as S verwys word), word die indelingsfaktor F deur onderstaande formule bepaal:—

$$F = 1 - \frac{(1 - B)(C_s - S)}{123 - S}$$

waarin B die faktor is wat bepaal word ooreenkomstig die bepalings van subparagraaf (5) en C_s die kriteriumgetal is wat bepaal word ooreenkomstig die bepalings van paragraaf 5.

(3) In die geval van skepe waarvan die lengte minder as 430 voet is maar nie minder as 260 voet nie en met 'n kriteriumgetal minder as S of in die geval van skepe waarvan die lengte minder as 260 voet is, is die indelingsfaktor een.

(4) In die geval van 'n skip van enige lengte wat bedoel is vir die vervoer van meer as 12 passasiers, maar hoogstens

$$\frac{L^2}{7000} \text{ of } 50$$

wat ook al die kleinste is, word die indelingsfaktor bepaal soos voorgeskryf in subparagraaf (3).

(5) Vir die doel van hierdie paragraaf word die faktore A en B deur onderstaande formules bepaal:—

$$A = \frac{190}{L - 198} + 0{\cdot}18 \text{ (waar L = 430 en groter)}$$

$$B = \frac{100}{L - 138} + 0{\cdot}18 \text{ (waar L = 260 en groter).}$$

5. Kriterium van diens.

Die kriteriumgetal vir skepe waarop hierdie Deel van toepassing is, word deur onderstaande formules bepaal:—

wanneer P_1 groter is as P

$$C_s = 72\,\frac{M + 2P_1}{V + P_1 - P}$$

en in alle ander gevalle

$$C_s = 72\,\frac{M + 2P}{V}$$

waarin

C_s = die kriteriumgetal;

M = die volume van die masjinerieruim, met toevoeging daaraan van die volume van alle blywende oliebrandstofbunkers wat bokant die binnebodem en voor of agter die masjinerieruim geleë mag wees;

P = die volume van die passasiers- en bemanningsruimtes onder die indompelingsgrenslyn;

V = die volume van die skip onder die indompelingsgrenslyn;

N = die aantal passasiers wat die skip bedoel is om te vervoer; en

P_1 = 0·6LN:

Met dien verstande dat:—

(*a*) waar die waarde van 0·6LN groter is as die som van P en die gehele volume van die passasiersruimtes bokant die indompelingsgrenslyn, die syfer wat vir P_1 geneem moet word daardie som is of 0·4LN, watter ook al die grootste is;

(*b*) waardes van C_s minder as 23, geneem word as 23; en

(*c*) waardes van C_s groter as 123, geneem word as 123.

6. Besondere voorskrifte betreffende inleiding.

(1) Afdelings wat die toelaatbare lengte oorskry:—

(*a*) 'n Afdeling mag sy toelaatbare lengte oorskry mits die gesamentlike lengte van elke paar aangrensende afdelings waarvan die betrokke afdeling 'n deel uitmaak, nie groter as die vulbare lengte is nie of twee maal die toelaatbare lengte, watter ook al die kleinste is.

(*b*) Indien een afdeling van een van sodanige pare van aangrensende afdelings binne die masjinerieruim en die tweede afdeling buite die masjinerieruim geleë is, moet die gesamentlike lengte van die twee afdelings aangepas word by die gemiddelde deurdringbaarheid van die twee gedeeltes van die skip waarin die afdelings geleë is.

(*c*) Waar die lengte van twee aangrensende afdelings deur verskillende indelingsfaktore beheer word, moet die gesamentlike lengte van die twee afdelings na eweredigheid bepaal word.

that where in the case of any ship the factor F is less than 0·4 and the Minister is satisfied that it is impracticable to apply the factor F in determining the permissible length of a compartment appropriated for machinery, he may allow an increased factor not exceeding 0·4 to be applied to that compartment.

(2) Subject to the provisions of sub-paragraph (4), in the case of ships the length of which is less than 430 feet but not less than 260 feet having a criterion numeral of not less than

$$\frac{4691 - 10L}{17}$$

(hereinafter in this paragraph referred to as S), the factor of subdivision F shall be determined by the following formula:—

$$F = 1 - \frac{(1 - B)(C_s - S)}{123 - S}$$

where B is the factor determined in accordance with the provisions of sub-paragraph (5) and C_s is the criterion numeral determined in accordance with the provisions of paragraph 5.

(3) In the case of ships the length of which is less than 430 feet but not less than 260 feet and having a criterion numeral less than S or in the case of ships the length of which is less than 260 feet, the factor of subdivision shall be unity.

(4) In the case of a ship of any length which is intended to carry a number of passengers exceeding 12 but not exceeding

$$\frac{L^2}{7000} \text{ or } 50$$

whichever is the lower, the factor of subdivision shall be determined in the manner provided in sub-paragraph (3).

(5) For the purposes of this paragraph, the factors A and B shall be determined by the following formulae:—

$$A = \frac{190}{L - 198} + 0{\cdot}18 \text{ (where L = 430 and upwards)}$$

$$B = \frac{100}{L - 138} + 0{\cdot}18 \text{ (where L = 260 and upwards).}$$

5. Criterion of Service.

The criterion numeral for ships to which this Part applies, shall be determined by the following formulae:—

when P_1 is greater than P

$$C_s = 72\,\frac{M + 2P_1}{V + P_1 - P}$$

and in all other cases

$$C_s = 72\,\frac{M + 2P}{V}$$

where:—

C_s = the criterion numeral;

M = the volume of the machinery space, with the addition thereto of the volume of any permanent oil fuel bunkers which may be situated above the inner bottom and before or abaft the machinery space;

P = the volume of the passenger spaces and crew spaces below the margin line;

V = the volume of the ship below the margin line;

N = number of passengers which the ship is intended to carry; and

P_1 = 0·6LN

Provided that:

(*a*) where the value of 0·6LN is greater than the sum of P and the whole volume of the passenger spaces above the margin line, the figure to be taken as P_1 shall be that sum or 0·4LN whichever is the greater;

(*b*) values of C_s less than 23 shall be taken as 23; and

(*c*) values of C_s greater than 123 shall be taken as 123.

6. Special Rules for Subdivision.

(1) Compartments exceeding the permissible length:—

(*a*) A compartment may exceed its permissible length provided that the combined length of each pair of adjacent compartments to which the compartment in question is common does not exceed either the floodable length or twice the permissible length, whichever is the less.

(*b*) If one compartment of either of such pairs of adjacent compartments is situated inside the machinery space, and the other compartment thereof is situated outside the machinery space, the combined length of the two compartments shall be adjusted in accordance with the mean average permeability of the two portions of the ship in which the compartments are situated.

(*c*) Where the lengths of two adjacent compartments are governed by different factors of subdivision, the combined length of the two compartments shall be determined proportionately.

(*d*) Wanneer daar in enige gedeelte van 'n skip beskotte is wat ingevolge Deel I van hierdie regulasies waterdig moet wees, tot 'n hoër dek uitstrek as die orige gedeelte van die skip, kan afsonderlike indompelingsgrenslyne gebruik word vir die berekening van die vulbare lengte van daardie gedeelte van die skip, indien—

(i) die twee afdelings wat grens aan die verspringing in die beskotdek albei die toelaatbare lengte wat met hul onderskeie indompelingsgrenslyne ooreenkom, nie oorskry nie, en daarbenewens hul gesamentlike lengte nie groter is nie as twee keer die toelaatbare lengte, bereken volgens die laer indompelingsgrenslyn van sodanige afdelings;

(ii) die skeepsboorde dwarsdeur die hele lengte van die skip uitstrek tot by die dek wat met die boonste indompelingsgrenslyn ooreenkom en al die openings in die huidbeplating onderkant daardie dek dwarsdeur die hele lengte van die skip aan die vereistes van regulasie 17 voldoen asof hulle openings onder die indompelingsgrenslyn is.

(2) Addisionele indeling by die voorent:—

In skepe van 'n lengte van 430 voet en groter moet die waterdigte beskot langsaan agter die aanvaringskot aangebring word op 'n afstand vanaf die voorloodlyn wat nie groter is as die toelaatbare lengte wat toepaslik is op 'n afdeling wat deur die voorloodlyn en sodanige beskot begrens word.

(3) Verspringings in beskotte:—

Indien 'n beskot wat ingevolge die vereistes van Deel I van hierdie regulasies waterdig moet wees, verspringend is, moet dit aan een van onderstaande voorwaardes voldoen:—

(i) In skepe met 'n indelingsfaktor van nie groter as ·9 nie, mag die gesamentlike lengte van die twee afdelings wat deur sodanige beskot geskei word, 90 persent van die vulbare lengte of twee keer die toelaatbare lengte wat ookal die kleinste is, nie oorskry nie. In skepe met 'n indelingsfaktor groter as ·9, mag die gesamentlike lengte van die twee afdelings die toelaatbare lengte nie oorskry nie;

(ii) voorsiening gemaak is vir addisionele indeling by wyse van 'n verspringing ter handhawing van dieselfde mate van veiligheid as dié wat deur middel van 'n vlak beskot verkry word; of

(iii) die afdeling waaroor die verspringing hom uitstrek die toelaatbare lengte wat ooreenkom met 'n indompelingsgrenslyn, geneem 3 duim onderkant die verspringing, nie oorskry nie.

(4) Nisse in beskotte:—

Indien enige gedeelte van 'n nis buite die vertikale oppervlaktes aan albei kante van die skip op 'n afstand van die huidbeplating wat gelyk is aan een-vyfde van die breedte van die skip en reghoekig gemeet met die middellyn op die vlak van die boonste indelingslaswaterlyn geleë is, word die hele sodanige nis, vir die doeleindes van subparagraaf (3), as 'n verspringing in 'n beskot beskou.

(5) Gelykwaardige vlakbeskotte:—

Wanneer 'n beskot wat ingevolge Deel I van hierdie regulasies waterdig moet wees, van 'n nis voorsien of trapsgewyse verspring is, word by die bepaling van die indeling 'n gelykwaardige vlakbeskot veronderstel.

(6) Minimum afstand van beskotte:—

Indien die afstand tussen twee aangrensende beskotte ingevolge Deel I van hierdie regulasies waterdig moet wees, of hulle gelykwaardige vlakbeskotte, of die afstand tussen die dwarsvlakke wat deur verspringende gedeeltes van die beskotte loop wat die naaste aan mekaar lê, minder is as ·03L + 10 voet, of 35 voet, of ·1L, watter ook al die kleinste is, moet dit beskou word dat slegs een van daardie beskotte 'n deel uitmaak van die indeling van die skip.

(7) Toelating vir plaaslike indeling:—

Wanneer in enige skip 'n hoofdwarsskeepse waterdigte afdeling plaaslik ingedeel is en die Minister oortuig is dat by enige veronderstelde beskadiging van die boord oor 'n lengte van ·03L + 10 voet, of 35 voet, of ·1L, watter ook al die kleinste is, die hele volume van die hoofafdeling nie sal volloop nie, kan daar na verhouding 'n vergroting van die toelaatbare lengte wat anders vir so 'n afdeling vereis word, toegestaan word. In so 'n geval mag die volume van die effektiewe dryfvermoë wat aan die onbeskadigde kant veronderstel word, nie groter wees as dié wat aan die beskadigde kant veronderstel word nie.

DEEL III.

SKEPE VAN KLAS II EN IIA WAT DEUR DIE MINISTER GOEDGEKEUR WORD OM 'N GROTER AANTAL PERSONE AAN BOORD TE VERVOER AS WAT DIE BESKIKBARE RUIMTE IN DIE REDDINGSBOTE TOELAAT.

7. Algemene reëls vir indeling.

Behoudens die modifikasies soos in hierdie Deel uiteengesit, moet die maksimum lengte van afdelings in skepe waarop hierdie Deel van toepassing is, bepaal word asof hulle skepe is waarop Deel II van toepassing is.

(*d*) Where in any portion of a ship bulkheads required by Part I of these regulations to be watertight, are carried to a higher deck than in the remainder of the ship, separate margin lines may be used for calculating the floodable length of that portion of the ship, if—

(i) the two compartments adjacent to the resulting step in the bulkhead deck are each within the permissible length corresponding to their respective margin lines and, in addition, their combined length does not exceed twice the permissible length determined by reference to the lower margin line of such compartments;

(ii) the sides of the ship are extended throughout the ship's length to the deck corresponding to the uppermost margin line and all openings in the shell plating below that deck throughout the length of the ship comply with the requirements of regulation 17 as if they were openings below the margin line.

(2) Additional subdivision at forward end:—

In ships 430 feet in length and upwards, the watertight bulkhead next abaft the collision bulkhead shall be fitted at a distance from the forward perpendicular which is not greater than the permissible length appropriate to a compartment bounded by the forward perpendicular and such bulkhead.

(3) Steps in bulkheads:—

If a bulkhead required by Part I of these regulations to be watertight is stepped, it shall comply with one of the following conditions:—

(i) in ships having a factor of subdivision not greater than 0·9, the combined length of the two compartments separated by such bulkhead shall not exceed 90 per cent of the floodable length or twice the permissible length whichever is the less. In ships having a factor of subdivision greater than 0·9, the combined length of the two compartments shall not exceed the permissible length;

(ii) additional subdivision is provided in way of the step to maintain the same measure of safety as that secured by a plane bulkhead; or

(iii) the compartment over which the step extends does not exceed the permissible length corresponding to a margin line taken 3 inches below the step.

(4) Recesses in bulkheads:—

If any part of a recess lies outside vertical surfaces on both sides of the ship situated at a distance from the shell plating equal to one-fifth of the breadth of the ship and measured at right angles to the centre line at the level of the deepest subdivision load water line, the whole of such recess shall be deemed to be a step in a bulkhead for the purposes of sub-paragraph (3).

(5) Equivalent plane bulkheads:—

Where a bulkhead required by Part I of these regulations to be watertight, is recessed or stepped an equivalent plane bulkhead shall be assumed in determining the subdivision.

(6) Minimum spacing of bulkheads:—

If the distance between two adjacent bulkheads required by Part I of these regulations to be watertight, or their equivalent plane bulkheads, or the distance between transverse planes passing through the nearest stepped portions of the bulkheads, is less than 0·03L + 10 feet, or 35 feet, 0·1L, whichever is the least, only one of those bulkheads shall be regarded as forming part of the subdivision of the ship.

(7) Allowance for local subdivision:—

Where in any ship a main transverse watertight compartment contains local subdivision and the Minister is satisfied that, after any assumed side damage extending over a length of 0·03L + 10 feet, or 35 feet, or 0·1L, whichever is the least, the whole volume of the main compartment will not be flooded, a proportionate allowance may be made in the permissible length otherwise required for such compartment. In such a case the volume of effective bouyancy assumed on the undamaged side shall not be greater than that assumed on the damaged side.

PART III.

SHIPS OF CLASSES II AND IIA WHICH ARE PERMITTED BY THE MINISTER TO CARRY PERSONS IN EXCESS OF THE LIFEBOAT CAPACITY PROVIDED ON BOARD.

7. General Rules for Subdivision.

Subject to the modifications set forth in this Part, the maximum length of compartments in ships to which this Part applies, shall be determined as if they were ships to which Part II applies.

8. VERONDERSTELLING VAN DEURDRINGBAARHEID IN GEDEELTES VOOR EN AGTER DIE MASJINERIERUIM.

In skepe waarop hierdie Deel van toepassing is, word die veronderstelde gemiddelde deurdringbaarheid dwarsdeur die gedeeltes van die skip voor en agter die masjinerieruim bepaal:

(*a*) Deur onderstaande formule:—

$95 - 35\frac{b}{v}$ waarin

b = die volume van die ruimte wat onderkant die indompelingsgrenslyn voor of agter die masjinerieruim geleë is, na gelang van die geval, en bo die boonste vlak van vloere, binnebodems of piektenks, en bedoel is vir gebruik as steenkool- of oliebrandstofbunkers, voorraadruime, bagasie- en posruime, kettingbakke of varswatertenks en ruime bedoel vir vrag, mits die Minister oortuig is dat die grootste gedeelte van die volume van die ruimte deur vrag in beslag geneem sal word; en

v = die volume van die gedeelte van die skip onderkant die indompelingsgrenslyn voor of agter die masjinerieruim, na gelang van die geval; of

(*b*) indien die Minister so bepaal in die geval van enige skip te eniger tyd nie later as 40 dae nie nadat 'n opnemer 'n plan ontvang het van die skip wat die waterdigte indeling daarvan aantoon, deur regstreekse berekening vir die doel waarvan daar geag word dat die deurdringbaarheid van die ruimtes as volg is:—

passasiersruimtes	95
bemanningsruimtes	95
ruimtes aangewend vir masjinerie	80
ruimtes aangewend vir bunkersteenkool, voorraad- of bagasiekamers	60
ruimtes wat aangewend word vir vrag, tenks wat deel uitmaak van die skipsbou en dubbelbodems	95, of so 'n kleiner syfer as wat die Minister in die geval van enige skip mag goedkeur.

9. INDELINGSFAKTOR.

(1) Behoudens die bepalings van hierdie paragraaf moet die faktor van indeling van skepe waarop hierdie Deel van toepassing is, bepaal word op die wyse soos in paragraaf 4 aangegee, of ·5, wat ook al die kleinste is: Met dien verstande dat as die Minister oortuig is dat in die geval van enige skip waarvan die lengte minder as 300 voet is, dit onprakties is om daardie faktor op enige afdeling toe te pas, hy vir daardie afdeling 'n hoër faktor mag goedkeur.

(2) Indien in die geval van enige skip waarop hierdie Deel van toepassing is, die Minister oortuig is dat die hoeveelheid vrag wat in die skip vervoer gaan word sodanig sal wees dat dit onprakties is om agter die aanvaringskot 'n indelingsfaktor van hoogstens ·5 toe te pas, moet die indelingsfaktor van die skip as volg bepaal word:—

(*a*) In die geval van skepe waarvan die lengte 430 voet en groter is, deur die formule—

$$F = A - \frac{(A - BB)(C_s - 23)}{100}$$

(*b*) in die geval van skepe waarvan die lengte minder as 430 voet is maar nie minder as 180 voet nie, met 'n kriteriumgetal nie kleiner nie as S_1, deur die formule:—

$$F = 1 - \frac{(1 - BB)(C_s - S_1)}{123 - S_1}$$

Vir die doeleindes van bostaande formules:—

$$A = \frac{190}{L - 198} + 0{\cdot}18 \text{ (waar L = 430 en groter)}$$

$$BB = \frac{57{\cdot}6}{L - 108} + 0{\cdot}20 \text{ (waar L = 180 en groter)}$$

$$S_1 = \frac{1950 - 4L}{10}$$

C_s = die kriteriumgetal bepaal ooreenkomstig paragraaf 5 waarin P_1 onderstaande waardes het:—

(*a*) 0·6LN of 125N watter ook al die grootste is, vir passasiers met slaapgeriewe;

(*b*) 125N vir passasiers sonder slaapgeriewe;

(*c*) in die geval van skepe waarvan die lengte minder as 430 voet is maar nie minder as 180 voet nie en met 'n kriteriumgetal kleiner as S_1, en alle skepe waarvan die lengte minder as 180 voet is, moet die indelingsfaktor een wees.

DEEL IV.

SKEPE VAN KLAS VI.

10. ALGEMENE VOORSKRIFTE BETREFFENDE INDELING.

Behoudens die modifikasies soos in hierdie Deel uiteengesit, moet die maksimum lengte van afdelings in skepe waarop hierdie Deel van toepassing is, bepaal word asof hulle skepe is waarop Deel II van toepassing is.

8. ASSUMPTION OF PERMEABILITY IN PORTIONS BEFORE AND ABAFT THE MACHINERY SPACE.

In ships to which this Part applies, the assumed average permeability throughout the portions of the ship before and abaft the machinery space shall be determined—

(*a*) by the following formula:—

$95 - 35\frac{b}{v}$ where

b = the volume of the spaces which are situated below the margin line before or abaft the machinery space, as the case may be, and above the tops of floors, inner bottom, or peak tanks, and which are appropriated for use as coal or oil fuel bunkers, store rooms, baggage rooms, mail rooms, chain lockers or fresh water tanks and of spaces apropriated for cargo if the Minister is satisfied that the greater part of the volume of the space is intended to be occupied by cargo; and

v = the volume of the portion of the ship below the margin line before or abaft the machinery space, as the case may be; or

(*b*) if the Minister so determines in the case of any ship at any time not later than 40 days after a surveyor has received a plan of the ship showing the watertight subdivision thereof, by detailed calculation for the purpose of which the permeability of spaces shall be assumed to be as follows:—

passenger spaces	95
crew spaces	95
spaces appropriated to machinery	80
spaces appropriated to bunker coal, stores or baggage rooms	60
spaces appropriated to cargo, tanks forming part of the structure of the ship and double bottoms	95, or such lesser figure as the Minister may permit in the case of any ship.

9. FACTOR OF SUBDIVISION.

(1) Subject to the provisions of this paragraph, the factor of subdivision of ships to which this Part applies, shall be the factor determined in the manner provided in paragraph 4, or 0·5 whichever is the less. Provided that if the Minister is satisfied in the case of any ship the length of which is less than 300 feet that it is impracticable to apply that factor to any compartment, he may allow a higher factor to be applied to that compartment.

(2) If in the case of any ship to which this Part applies, the Minister is satisfied that the quantity of cargo to be carried in the ship will be such as to render impracticable the application abaft the collision bulkhead of a factor of subdivision not exceeding 0·5, the factor of subdivision of the ship shall be determined as follows:—

(*a*) in the case of ships the length of which is 430 feet and upwards, by the formula:—

$$F = A - \frac{(A - BB)(C_s - 23)}{100}$$

(*b*) in the case of ships the length of which is less than 430 feet but not less than 180 feet, and having a criterion numeral not less than S_1, by the formula:—

$$F = 1 - \frac{(1 - BB)(C_s - S_1)}{123 - S_1}$$

For the purposes of the above formulae:—

$$A = \frac{190}{L - 198} + 0{\cdot}18 \text{ (where L = 430 and upwards)}$$

$$BB = \frac{57{\cdot}6}{L - 108} + 0{\cdot}20 \text{ (where L = 180 and upwards)}$$

$$S_1 = \frac{1950 - 4L}{10}$$

C_s = the criterion numeral determined in accordance with paragraph 5 where P_1 has the following values:—

(*a*) 0·6LN or 125N whichever is the greater for berthed passengers.

(*b*) 125N for unberthed passengers.

(*c*) in the case of ships the length of which is less than 430 feet but not less than 180 feet and having a criterion numeral less than S_1 and of all ships the length of which is less than 180 feet, the factor of subdivision shall be unity.

PART IV.

SHIPS OF CLASS VI.

10. GENERAL RULES FOR SUBDIVISION.

Subject to the modifications set forth in this Part, the maximum length of compartments in ships to which this Part applies, shall be determined as if they were ships to which Part II applies.

11. VERONDERSTELLINGS VAN DEURDRINGBAARHEID.

In skepe waarop hierdie Deel van toepassing is, moet die veronderstelde gemiddelde deurdringbaarheid as volg wees:—

(*a*) van die masjinerieruim—

(i) in skepe wat deur binnebrandenjins aangedryf word 85

(ii) in alle ander skepe..... 80

(*b*) van ruimtes uitgesonderd die masjinerieruim..... 95

12. INDELINGSFAKTOR.

Die indelingsfaktor van skepe waarop hierdie Deel van toepassing is, moet as volg wees:—

Lengte van skip in voet.	*Indelingsfaktor.*
Oor 350.....	0·5.
Oor 300 maar nie oor 350 nie	0·5 vir afdelings in masjinerieruime en daar voor. Een vir alle ander afdelings.
Oor 250 maar nie oor 300 nie	0·5 vir afdelings voor masjinerieruime. Een vir alle ander afdelings.
Oor 200 maar nie oor 250 nie	Een vir gesamentlike voorpiek en aangrensende afdeling, en vir elke ander afdeling.
200 en onder.....	Een.

(*Regulasie* 10.)

TWEEDE BYLAE.

STABILITEIT IN BESKADIGDE TOESTAND.

1. BEREKENINGS VAN STABILITEIT IN BESKADIGDE TOESTAND.

Die voldoende stabiliteit van elke intakte skip waarop Hoofstuk II van Deel I van hierdie regulasies van toepassing is, moet bepaal word deur berekening waarby die ontwerp en bou van die skip en die beskadigde afdelings in aanmerking geneem word, en wat in ooreenstemming is met onderstaande veronderstellings:—

(*a*) Dit word veronderstel dat die skip in die slegste toestand betreffende stabiliteit verkeer wat waarskynlik ondervind sal word, met inagneming van die diens waarvoor die skip bestem is;

(*b*) die volume deurdringbaarheid en dié van die oppervlakte moet as volg veronderstel word:—

Ruimtes.	*Deurdringbaarheid.*
Aangewend vir vrag, steenkool of voorrade.....	60
Aangewend vir akkommodasie van passasiers en bemanning.....	95
Aangewend vir masjinerie....	85
Aangewend vir vloeistowwe..	0 of 95, watter ook al die strengste vereistes tot gevolg het.

(*c*) Die minimum aangenome mate van skade moet as volg wees:—

(i) In die lengte—10 voet plus 3 persent van die lengte van skip, of 35 voet, of 10 persent van die lengte van die skip, watter ook al die kleinste is.

(ii) In die dwarste—20 persent van die breedte van die skip (binneboords gemeet vanaf die skeepsboord reghoekig met die middellyn op die hoogte van die diepste indelingslaswaterlyn).

(iii) Vertikaal—vanaf die bodeel van die dubbelbodem tot by die indompelingsgrenslyn.

(iv) Indien geringer skade as dié wat in bostaande subparagrawe (i), (ii) en (iii) aangegee is, 'n ernstiger toestand wat betref helling of verlies van metasentriese hoogte tot gevolg sou hê, moet sodanige skade by die berekening veronderstel word.

(*d*) Wanneer die skip voorsien is van dekke, binnehuide of langskeepse beskotte van voldoende digtheid ten einde die vloei van water te beperk, moet daar by die berekening aan sulke beperkings aandag geskenk word.

2. VOLDOENDE STABILITEIT IN BESKADIGDE TOESTAND.

Dit word beskou dat die intakte stabiliteit van die skip voldoende is indien die voorgaande berekening, nadat die aangenome skade en nadat maatreëls getref is om die ewewig te herstel, aantoon dat die finale toestand van die skip as volg is:—

(i) In die geval van simmetriese oorstroming die metasentriese hoogte positief is;

(ii) in die geval van onsimmetriese oorstroming die helling sewe grade nie oorskry nie;

(iii) in die geval van onsimmetriese oorstroming die indompelingsgrenslyn nie onder water is nie.

11. ASSUMPTIONS OF PERMEABILITY.

In ships to which this Part applies, the assumed average permeability shall be as follows:—

(*a*) of the machinery space—

(i) in ships propelled by internal combustion engines.. 85

(ii) in all other ships..... 80

(*b*) of spaces other than the machinery space..... 95

12. FACTOR OF SUBDIVISION.

The factor of subdivision of ships to which this Part applies shall be as follows:—

Length of Ship in Feet.	*Factor of Subdivision.*
Over 350.....	0·5.
Over 300 but not over 350...	0·5 for compartments in machinery space and forward thereof. Unity for all other compartments.
Over 250 but not over 300...	0·5 for compartments forward of machinery space. Unity for all other compartments.
Over 200 but not over 250...	Unity for combined forepeak and adjacent compartment, and for each other compartment.
200 and under.....	Unity.

(*Regulation* 10.)

SECOND SCHEDULE.

STABILITY IN DAMAGED CONDITION.

1. CALCULATIONS OF STABILITY IN DAMAGED CONDITION.

The sufficiency of intact stability of every ship to which Chapter II of Part I of these regulations applies, shall be determined by calculation which has regard to the design and construction of the ship and the damaged compartments, and which is in accordance with the following assumptions:—

(*a*) the ship shall be assumed to be in the worst condition as regards stability which is likely to be experienced having regard to the intended service of the ship;

(*b*) the volume permeabilities and surface permeabilities shall be assumed to be as follows:—

Spaces.	*Permeability.*
Appropriated to cargo, coal or stores.....	60
Appropriated to accommodation for passengers and crew	95
Appropriated to machinery..	85
Appropriated to liquids.....	0 or 95, whichever results in the more onerous requirements.

(*c*) The minimum extent of damage shall be assumed to be as follows:—

(i) Longitudinal extent—10 feet plus 3 per cent of the length of the ship, or 35 feet, or 10 per cent of the length of the ship, whichever is the least.

(ii) Transverse extent—20 per cent of the breadth of the ship (measured inboard from the ship's side at right angles to the centre line at the level of the deepest subdivision load water line).

(iii) Vertical extent—from the top of the double bottom up to the margin line.

(iv) If any damage of lesser extent than that indicated in the foregoing sub-paragraphs (i), (ii) and (iii) would result in a more severe condition regarding heel or loss of metacentric height, such damage shall be assumed for the purposes of the calculation.

(*d*) Where the ship is fitted with decks, inner skins or longitudinal bulkheads of sufficient tightness to restrict the flow of water, regard shall be had to such restrictions in the calculation.

2. SUFFICIENCY OF STABILITY IN DAMAGED CONDITION.

The intact stability of the ship shall be deemed to be sufficient if the aforesaid calculation shows that, after the assumed damage and after equalisation measures have been taken, the final condition of the ship is as follows:—

(i) In the event of symmetrical flooding the metacentric height is positive;

(ii) in the event of unsymmetrical flooding the heel does not exceed seven degrees;

(iii) in the event of unsymmetrical flooding the margin line is not submerged.

(*Regulasies* 8 *en* 11.)

DERDE BYLAE.

KONSTRUKSIE VAN WATERDIGTE BESKOTTE, ENS.

DEEL I.

SKEPE VAN KLAS I.

1. STERKTE EN KONSTRUKSIE.

(1) Elke beskot en ander gedeelte van die binnekonstruksie wat deel uitmaak van die waterdigte afdeling van die skip moet van so 'n sterkte en op so 'n wyse gebou word dat dit voldoende weerstandvermoë sal hê om die druk te weerstaan wat ooreenkom met dié van 'n kolom water tot op die indompelingsgrenslyn.

(2) Elke sodanige beskot en gedeelte moet van sagtestaal wees en, indien dit van 'n klinkkonstruksie is, moet dit aan die vereistes van paragrawe 2 tot 6 voldoen, en indien van gesweiste konstruksie, moet dit minstens van net soveel sterkte, stewigheid of doeltreffendheid wees as wanneer dit geklink sou gewees het en aan sodanige vereistes voldoen het.

2. BESKOTTE.

(1) Elke beskot wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet gemaak word met beplating met diktes van minstens dié soos in Tabel I van Deel IV aangegee. As 'n beskot aan die ent van 'n stookruimte in 'n met koolbrandstof aangedrewe skip is, moet die onderste gedeelte van die beskotbeplating tot 'n hoogte van minstens 24 duim bokant die stookruimvloer minstens 0·1 duim dikker wees as wat ingevolge genoemde Tabel vereis word. As die beskot aan die ent van 'n koolbunkerruim is, moet die laagste plaatgang daarvan minstens 36 duim hoog wees en 0·1 duim dikker wees as wat ingevolge genoemde Tabel vereis word. In alle ander beskotte moet die laagste plaatgang minstens 0·04 duim dikker wees as wat ingevolge genoemde Tabel vereis word en enige vullingsplate moet minstens 0·1 duim dikker wees.

(2) Elke grenshoek moet minstens 0·1 duim dikker wees as die dikte wat ingevolge genoemde Tabel vir die beskotbeplating, waaraan dit bevestig is, vereis word.

(3) (*a*) Behoudens soos in Tabel 3 van Deel IV bepaal, moet elke sodanige beskot voorsien word van verstywings met knieplate of met hoeksterentverbindings. Indien die verstywings op afstande van 30 duim vanmekaar af is, moet hulle voldoen aan sodanige van die spesifikasies in Tabelle 2 en 3 van genoemde Deel as wat onder die omstandighede op hulle van toepassing is: Met dien verstande dat ander vorms van verstywings gebruik mag word as hulle minstens net soveel sterkte en stewigheid sal verleen soos in genoemde Tabelle aangegee is. Indien enige verstywings anders as op afstande van 30 duim in sodanige beskot vanmekaar af is, moet hulle sterkte en stewigheid in regstreekse verhouding van hulle afstand van mekaar, na gelang van die geval, vermeerder of verminder word. Verstywings op 'n aanvaringskot mag nie op afstande van meer as 24 duim vanmekaar af wees nie, of meer as 36 duim vanmekaar af in enige ander beskot.

(*b*) Die onderste ent van elke verstywing moet aan die huidbeplating, aan die binne bodembeplating of aan die horisontale beplating, wat dit behoorlik sal steun, bevestig wees.

(*c*) By elke dekvlak wat die bopunt uitmaak van 'n stelsel van verstywings, moet beplating so aangebring word dat dit in die beskot horisontale styfheid sal verseker.

(*d*) In die geval van verstywings met knieplate moet die onderste knieplaat of sy verbindingshoek oor die vloer grensende aan die beskot uitstrek, en die boonste knieplaat moet aan 'n hoek wat oor die balkruim uitstrek, verbind word, of ander ewe doeltreffende middels moet aangewend word om die bouvastheid te verseker.

(*e*) Waar verstywings by waterdigte deure in die onderste gedeelte van 'n beskot afgekort word, moet die opening behoorlik van spante en knieplate voorsien word, en 'n tapse webplaat of stut, wat aan die kante verstewig is, moet aan elke kant van die deur, vanaf die voet van die beskot tot bokant die deuropening, aangebring word.

(*f*) Al die knieplate, boeksters en ander entverbindings vir verstywings moet aan die vereistes van Tabel 4 van Deel IV voldoen.

(4) (*a*) Die klinknaels in rande en plaatverbindings en grensstawe van alle beskotte wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet hoogstens 4½ diameters hart op hart vanmekaar af wees, behalwe in die geval van die flens van 'n grenshoek, wat die flens is wat aan die binnebodembeplating verbind is, huidbeplating of dekbeplating, in watter geval hulle 5 diameters hart op hart vanmekaar af moet wees.

(*b*) Grenshoeke wat meer as 35 voet onder die beskotdek aangebring is moet in albei flense dubbel geklink word, behalwe op dele van 'n beskot binne 'n dubbeldodem, en die vertikale verbinding van plate wat so aangebring is moet dubbel geklink word.

(*c*) Die klinknaels wat verstywings verbind, met knieplaatentverbindings aan beskotbeplating, moet hoogstens 7 diameters hart op hart vanmekaar af wees. Alle ander verstywings moet aan die beskotbeplating met klinknaels op hoogstens 4 diameters hart op hart vir 15 persent van die lengte van die verstywings by elke ent daarvan, vanmekaar af wees, en elders hoogstens 7 diameters hart op hart vanmekaar af.

(*d*) Waar spante of balke deur 'n beskot loop wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet die beskot sonder aanwending van hout of sement waterdig gemaak word.

(*Regulations* 8 *and* 11.)

THIRD SCHEDULE.

CONSTRUCTION OF WATERTIGHT BULKHEADS, ETC.

PART I.

SHIPS OF CLASS I.

1. STRENGTH AND CONSTRUCTION.

(1) Every bulkhead and other portion of the internal structure forming part of the watertight subdivision of the ship shall be of such strength and so constructed as to be capable of supporting, with an adequate margin of resistance, the pressure due to a head of water up to the margin line.

(2) Every such bulkhead and portion shall be constructed of mild steel and, if of riveted construction, shall comply with the requirements of paragraphs 2 to 6, and if of welded construction shall not be of less strength, stiffness or efficiency than if it had been riveted and had complied with such requirements.

2. BULKHEADS.

(1) Every bulkhead required by Part I of these regulations to be watertight, shall be constructed with plating of thicknesses not less than those indicated in Table I of Part IV. If a bulkhead is at the end of a stokehold space in a coal burning ship, the lower part of the bulkhead plating to a height of at least 24 inches above the stokehold floor shall be at least 0·1 inch thicker than is required by the said Table. If a bulkhead is at the end of a coal bunker space, the lowest strake thereof shall be at least 36 inches high and 0·1 inch thicker than is required by the said Table. In all other bulkheads the lowest strake shall be at least 0·04 inch thicker than is required by the said Table and any limber plates shall be at least 0·1 inch thicker.

(2) Every boundary angle shall be at least 0·1 inch thicker than the thickness required by the said Table for the bulkhead plating to which it is attached.

(3) (*a*) Save as provided in Table 3 of Part IV, every such bulkhead shall be fitted with stiffeners which shall have brackets or lug end connections. If the stiffeners are spaced 30 inches apart, they shall comply with such of the specifications in Tables 2 and 3 of the said Part as apply to them in the circumstances. Provided that other forms of stiffeners may be used if they afford not less strength and stiffness than the stiffeners indicated in the said Tables. If any stiffeners are spaced otherwise than 30 inches apart on such a bulkhead, their strength and stiffness shall be increased or decreased, as the case may be, in direct proportion to their distance apart. Stiffeners shall not be spaced more than 24 inches apart on a collission bulkhead, or more than 36 inches apart on any other bulkhead.

(*b*) The lower end of each stiffener shall be attached to the shell plating, to the inner bottom plating or to horizontal plating which will support it properly.

(*c*) At each deck level which forms the top of a system of stiffeners plating shall be so provided as to ensure horizontal rigidity in the bulkhead.

(*d*) In the case of bracketed hold stiffeners the lower bracket or its connecting angle shall extend over the floor adjacent to the bulkhead and the upper bracket shall be connected to an angle which extends over the beam space, or other equally effective means shall be adopted for securing structural rigidity.

(*e*) Where stiffeners are cut in way of watertight doors in the lower part of a bulkhead, the opening shall be properly framed and bracketed, and a tapered web plate or buttress, stiffened on its edge, shall be fitted at each side of the door from the base of the bulkhead to above the door opening.

(*f*) All brackets, lugs and other end connections for stiffeners shall comply with the requirements of Table 4 of Part IV.

(4) (*a*) The rivets in seams and connections of plating and boundary bars of all bulkheads required by Part I of these regulations to be watertight shall be spaced not more than 4½ diameters apart centre to centre, except in the case of the flange of a boundary angle, being the flange connected to the inner bottom plating, shell plating or deck plating, in which case they shall be spaced 5 diameters apart centre to centre.

(*b*) Boundary angles fitted more than 35 feet below the bulkhead deck shall be double riveted in both flanges except on parts of a bulkhead within a double bottom, and the vertical connection of plates so fitted shall be double riveted.

(*c*) The rivets connecting stiffeners, having bracket end connections, to bulkhead plating shall be spaced not more than 7 diameters apart centre to centre. All other stiffeners shall be connected to the bulkhead plating by rivets spaced not more than 4 diameters apart centre to centre for 15 per cent of the length of the stiffeners at each end thereof and not more than 7 diameters apart centre to centre elsewhere.

(*d*) Where frames or beams pass through a bulkhead required by Part I of these regulations to be watertight, the bulkhead shall be made watertight without the use of wood or cement.

3. WATERDIGTE DEKKE, VERSPRINGINGS EN VLAKKE.

(1) Die horisontale beplating van dekke, verspringings en vlakke wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet minstens 0·04 duim dikker wees as dié wat vir waterdigte beskotte op ooreenkomende hoogtes vereis word.

(2) Die balke van sulke dekke, verspringings en vlakke moet van die groottes wees wat vir verstywings aangegee is wat 30 duim van mekaar af is, soos in Tabel 3 van Deel IV: Met dien verstande dat balke wat in gedeeltes verdeel is en van knieplate by elke ent voorsien is, van die groottes mag wees wat vir sulke verstywings in Tabel 2 van Deel IV aangegee is. Indien balke anders as op afstande van 30 duim vanmekaar af is, moet hulle sterkte en stewigheid in regstreekse verhouding van hulle afstand vanmekaar af, na gelang van die geval, vermeerder of verminder word.

Vir die doeleindes van genoemde Tabelle, moet die grootste afstand tussen die steunpunte, as die lengte van die balk beskou word: Met dien verstande dat as die balk van knieplate voorsien is, die lengte daarvan, vir die doeleindes van genoemde Tabel 3, met die breedte van die knieplate verminder moet word. Die afstand vanaf die beskotdek tot by die betrokke dek, verspringing of vlak, min die halwe lengte van die balk moet, vir die doeleindes van genoemde Tabelle, as die hoogte beskou word.

(3) Voldoende steun vir sulke balke moet deur beskotte of deur gestutte balke, waar nodig, voorsien word, en die klinkverbindings van die stutte moet voldoende wees om die belasting, as gevolg van waterdruk te weerstaan.

(4) Waar spante deur 'n dek, verspringing of vlak loop, wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet so 'n dek, verspringing of vlak sonder aanwending van hout of sement waterdig gemaak word.

4. WATERDIGTE NISSE EN VERKEERSGANGE.

Elke nis en verkeersgang wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet so gemaak word dat dit minstens net soveel sterkte en stewigheid by alle dele sal verleen as wat vir waterdigte beskotte op 'n ooreenkomstige hoogte vereis word.

5. WATERDIGTE TONNELS.

(1) Elke tonnel wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet met beplating gemaak word van 'n dikte van minstens dié wat in Tabel I van Deel IV aangegee is.

(2) Elke sodanige tonnel moet van verstywings voorsien word wat, as hulle op afstande van 36 duim vanmekaar af is, aan sodanige van die spesifikasies in Tabel 5 van Deel IV moet voldoen as wat onder die omstandighede op hulle van toepassing is: Met dien verstande dat ander vorms van verstywings gebruik mag word as hulle minstens net soveel sterkte en stewigheid verleen as die verstywings wat in genoemde Tabel aangegee is. Indien verstywings in sodanige tonnel anders as op afstande van 36 duim van mekaar af gespasieer is, moet hulle sterkte en stewigheid in regstreekse verhouding van hulle afstand vanmekaar af, na gelang van die geval, vermeerder of verminder word. Die voet van alle verstywings, op watter afstande ookal vanmekaar, moet met 'n oorslag oor die oethoek van die tonnel aangebring en daaraan bevestig word.
v

6. WATERDIGTE BINNEHUIDE.

Elke binnehuid wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet van so 'n sterkte gemaak word dat dit 'n waterdruk tot by die indompelingsgrenslyn kan weerstaan.

DEEL II.

SKEPE VAN KLAS II EN KLAS IIA.

7. ALGEMEEN.

Behoudens die modifikasies in hierdie Deel uiteengesit, is Deel I van toepassing met betrekking tot skepe van Klas II en Klas IIA soos dit van toepassing is met betrekking tot skepe van Klas I.

8. BESKOTTE, ENS.

(1) Elke geklinkte gedeelte van die binnebou van 'n skip wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet as volg gebou word:—

(*a*) In skepe van hoogstens 150 voet lank, ooreenkomstig Tabelle 1A, 2A, 3A, 4 en 5A van Deel IV.

(*b*) In skepe van 250 voet in lengte en meer, ooreenkomstig Tabelle 1, 2, 3, 4 en 5 van Deel IV.

(*c*) In skepe tussen 150 voet en 250 voet lank, op 'n wyse soos deur interpolasie tussen die twee voorgaande standaarde bepaal word: Met dien verstande dat in skepe van enige lengte die indeling waarvan bepaal is ooreenkomstig subparagraaf (1) van paragraaf 9 van die Eerste Bylae, elke geklinkte gedeelte van sodanige binnebou gebou mag word ooreenkomstig Tabelle 1A, 2A, 3A, 4 en 5A van Deel IV van hierdie Bylae.

(2) Enige beskotte wat ingevolge Deel I van hierdie regulasies in skepe van hoogstens 150 voet lank waterdig moet wees en in skepe waarvan die indeling bepaal is ooreenkomstig subparagraaf (1) van paragraaf 9 van die Eerste Bylae, kan van verstywings sonder knieplaat of hoekysterentverbindings voorsien word indien die verstywings voldoen aan die spesifikasies in Tabel 3B van Deel IV van hierdie Bylae.

3. WATERTIGHT DECKS, STEPS AND FLATS.

(1) The horizontal plating of decks, steps and flats required by Part I of these regulations to be watertight, shall be at least 0·04 inch thicker than that required for watertight bulkheads at corresponding levels.

(2) The beams of such decks, steps and flats shall be of sizes indicated for stiffeners spaced 30 inches apart in Table 3 of Part IV. Provided that beams divided into portions which are bracketed at each end may be of the sizes indicated for such stiffeners in Table 2 of Part IV. If any beams are spaced otherwise than 30 inches apart, their strength and stiffness shall be increased or decreased, as the case may be, in direct proportion to their distance apart.

For the purposes of the said Tables, the greatest distance between the points of support, shall be deemed to be the length of the beam. Provided that, if a beam is bracketed, the length thereof for the purposes of the said Table 3 shall be reduced by the width of the brackets. The distance from the bulkhead deck to the deck, step or flat concerned, minus half the length of the beam, shall be deemed to be the height for the purposes of the said Tables.

(3) Adequate supports for such beams shall be provided by bulkheads, or by girders pillared where necessary, and the rivet connections of the pillars shall be sufficient to withstand the load due to water pressure.

(4) Where frames pass through a deck, step or flat required by Part I of these regulations to be watertight, such deck, step or flat shall be made watertight without the use of wood or cement.

4. WATERTIGHT RECESSES AND TRUNKWAYS.

Every recess and trunkway required by Part I of these regulations to be watertight, shall be so constructed as to provide strength and stiffness at all parts not less than that required for watertight bulkheads at a corresponding level.

5. WATERTIGHT TUNNELS.

(1) Every tunnel required by Part I of these regulations to be watertight, shall be constructed with plating of thicknesses not less than those indicated in Table 1 of Part IV.

(2) Every such tunnel shall be fitted with stiffeners which, if spaced 36 inches apart, shall comply with such of the specifications in Table 5 of Part IV as apply to them in the circumstances. Provided that other forms of stiffeners may be used if they afford not less strength and stiffness than the stiffeners indicated in the said Table. If any stiffeners are spaced otherwise than 36 inches apart on such a tunnel, their strength and stiffness shall be increased or decreased as the case may be in direct proportion to their distance apart. The feet of all stiffeners, however spaced, shall overlap the tunnel base angle, and shall be attached thereto.

6. WATERTIGHT INNER SKINS.

Every inner skin required by Part I of these regulations to be watertight, shall be of such strength and construction as will enable it to withstand a head of water up to the margin line.

PART II.

SHIPS OF CLASSES II AND IIA.

7. GENERAL.

Subject to the modifications set forth in this Part, Part I shall apply in relation to ships of Classes II and IIA as it applies in relation to ships of Class I.

8. BULKHEADS, ETC.

(1) Every riveted portion of the ship's internal structure required by Part I of these regulations to be watertight, shall be constructed as follows:—

(*a*) In ships not exceeding 150 feet in length, in accordance with Tables 1A, 2A, 3A, 4 and 5A of Part IV.

(*b*) In ships 250 feet in length and upwards, in accordance with Tables 1, 2, 3, 4 and 5 of Part IV.

(*c*) In ships between 150 feet and 250 feet in length, in a manner determined by interpolation between the two foregoing standards, Provided that in ships of any length the subdivision of which is determined in accordance with sub-paragraph (1) of paragraph 9 of the First Schedule, every riveted portion of such internal structure may be constructed in accordance with Tables 1A, 2A, 3A, 4 and 5A of Part IV of this Schedule.

(2) Any bulkheads required by Part I of these regulations to be watertight in ships not exceeding 150 feet in length and in ships the subdivision of which is determined in accordance with sub-paragraph (1) of paragraph 9 of the First Schedule, may, if the stiffeners comply with the specifications in Table 3B of Part IV of this Schedule, be fitted with stiffeners not having bracket or lug end connections.

DEEL III.

SKEPE VAN KLAS VI.

9. ALGEMEEN.

Behoudens die modifikasies soos in hierdie Deel uiteengesit, is Deel I van toepassing met betrekking tot skepe van Klas VI, soos dit van toepassing is met betrekking tot skepe van Klas I.

10. BESKOTTE, ENS.

(1) Enige beskotte wat ingevolge Deel I van hierdie regulasies waterdig moet wees, mag aangebring word met verstywings sonder knieplaat- of hoeksterentverbindings.

(2) Elke geklinkte gedeelte van die binnebou van 'n skip wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet gebou word ooreenkomstig sodanige van die bepalings van Tabelle 1A, 2A, 3A, 3B, 4 en 5A van Deel IV as wat onder die omstandighede van toepassing is.

DEEL IV.

TABEL 1.

(Paragrawe 2, 5 en 8 van hierdie Bylae.)

DIKTES VAN BESKOT- EN TONNELBEPLATING.

Beplating van aanvaringsbeskot: Verstywings 24 duim vanmekaar. Beplating van beskotte (behalwe die aanvaringsbeskot) en platbeplating van tonnels: Verstywings 30 duim vanmekaar. Geboë beplating van tonnels: Verstywings 36 duim vanmekaar.			Beplating van beskotte (behalwe die aanvaringsbeskot) en platbeplating van tonnels: Verstywings 36 duim vanmekaar.		
Hoogte by middellyn vanaf beskotdek tot by onderste rand van plaat, in voet.		Dikte in duim.	Hoogte by middellyn vanaf beskotdek tot by onderste rand van plaat, in voet.		Dikte in duim.
Bo. —	*Nie bo nie.* 8	·26	*Bo.* —	*Nie bo nie.* 7	·28
8	12	·28	7	10·5	·30
12	16	·30	10·5	14	·32
16	20	·32	14	17·5	·34
20	24	·34	17·5	21	·36
24	28	·36	21	24·5	·38
28	32	·38	24·5	28	·40
32	36	·40	28	31·5	·42
36	40	·42	31·5	35	·44
40	44	·44	35	38·5	·46
44	48	·46	38·5	42	·48
48	52	·48	42	45·5	·50
52	56	·50	45·5	49	·52
56	60	·52	49	52·5	·54
			52·5	56	·56
			56	59·5	·58

As die verstywings anders as soos hierbo gespesifiseer, vanmekaar af is, moet die diktes van die beplating sodanig wees dat dit 'n sterkte teweeg bring wat gelykstaande is aan dié wat teweeg gebring word deur die diktes en spasiërings soos hierbo gespesifiseer.

PART III.

SHIPS OF CLASS VI.

9. GENERAL.

Subject to the modifications set forth in this Part, Part I shall apply in relation to ships of Class VI, as it applies in relation to ships of Class I.

10. BULKHEADS, ETC.

(1) Any bulkheads required by Part I of these regulations to be watertight, may be fitted with stiffeners not having bracket or lug end connections.

(2) Every riveted portion of the ship's internal structure required by Part I of these regulations to be watertight, shall be constructed in accordance with such of the provisions of Tables 1A, 2A, 3A, 3B, 4 and 5A of Part IV as apply to it in the circumstances.

PART IV.

TABLE 1.

(Paragraphs 2, 5 and 8 of this Schedule.)

THICKNESSES OF BULKHEAD AND TUNNEL PLATING.

Plating of Collision Bulkhead: Stiffeners spaced 24 inches apart. Plating of Bulkheads (other than the Collision Bulkhead) and Flat Plating of Tunnels: Stiffeners spaced 30 inches apart Curved Plating of Tunnels: Stiffeners spaced 36 inches apart.			Plating of Bulkheads (other than the Collision Bulkhead) and Flat Plating of Tunnels: Stiffeners spaced 36 inches apart.		
Depth at Middle Line from Bulkhead Deck to Lower Edge of Plate in feet.		Thickness in inches.	Depth at Middle Line from Bulkhead Deck to Lower Edge of Plate in feet.		Thickness in inches.
Above. —	*Not above.* 8	·26	*Above.* —	*Not above.* 7	·28
8	12	·28	7	10·5	·30
12	16	·30	10·5	14	·32
16	20	·32	14	17·5	·34
20	24	·34	17·5	21	·36
24	28	·36	21	24·5	·38
28	32	·38	24·5	28	·40
32	36	·40	28	31·5	·42
36	40	·42	31·5	35	·44
40	44	·44	35	38·5	·46
44	48	·46	38·5	42	·48
48	52	·48	42	45·5	·50
52	56	·50	45·5	49	·52
56	60	·52	49	52·5	·54
			52·5	56	·56
			56	59·5	·58

If the stiffeners are spaced otherwise than is specified above, the thicknesses of the plating shall be such as will result in a strength equivalent to that resulting from the thicknesses and spacings specified above.

TABLE 2.

(Paragraphs 2, 3 and 8 of this Schedule.)

SIZES OF BULKHEAD STIFFENERS SPACED 30 INCHES APART AND FITTED WITH BRACKET END CONNECTIONS AT TOP AND BOTTOM IN ACCORDANCE WITH TABLE 4.

Overall Length of Stiffener, including End Connections, in feet.	Height of Bulkhead Deck above Top of Stiffener, in feet.										
	0	2	4	6	8	10	12	14	16	18	20
8	4×3×·30	4½×3×·30	4½×3×·34	5×3×·32	6×3×·32	6×3×·32	6×3×·34	6×3×·36	5½×3×·32	5½×3×·32	5½×3×·37
9	4½×3×·32	5×3×·32	5×3×·36	6×3×·32	6×3×·36	6×3×·38	5½×3×·32	5½×3×·37	6×3×·34	6×3×·35	7×3×·33
10	5×3×·34	6×3×·32	6×3×·34	6×3×·38	5½×3×·32	6×3×·34	6×3×·35	6×3½×·35	7×3×·33	7×3×·33	7×3×·36
11	6×3×·32	6×3×·34	5½×3×·32	5½×3×·38	6×3×·34	7×3×·33	7×3×·33	7×3×·34	7×3×·38	8×3×·35	8×3×·35
12	6×3×·38	5½×3×·34	6×3×·34	6×3½×·35	7×3×·33	7×3×·36	7×3×·38	8×3×·35	8×3×·35	8×3×·37	8×3×·40
13	5½×3×·37	6×3×·35	7×3×·33	7×3×·33	7×3×·38	8×3×·35	8×3×·35	8×3×·37	8×3×·42	8×3½×·46	9×3½×·38
14	6×3×·35	7×3×·33	7×3×·36	7×3×·40	8×3×·35	8×3×·37	8×3×·42	8×3½×·46	9×3½×·38	9×3½×·38	9×3½×·51
15	7×3×·33	7×3×·36	8×3×·35	8×3×·35	8×3×·40	8×3½×·46	9×3½×·38	9×3½×·38	9×3½×·45	9×3½×·51	10×3½×·40
16	7×3×·36	8×3×·35	8×3×·37	8×3×·42	9×3½×·38	9×3½×·38	9×3½×·44	9×3½×·51	10×3½×·40	10×3½×·50	11×3½×·43
17	8×3×·35	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·40	9×3½×·51	10×3½×·40	10×3½×·42	11×3½×·43	11×3½×·43	11×3½×·52
18	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·44	9×3½×·51	10×3½×·40	10×3½×·50	11×3½×·43	11×3½×·44	11×3½×·52	12×3½×3½×$\frac{·50}{·38}$
19	8×3½×·46	9×3½×·38	9×3½×·45	10×3½×·40	10×3½×·42	11×3½×·43	11×3½×·43	11×3½×·52	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·60}{·44}$
20	9×3½×·38	9×3½×·51	10×3½×·40	11×3½×·43	11×3½×·43	11×3½×·43	11×3½×·52	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·42}$	12×3½×3½×$\frac{·60}{·44}$	12×4×4×$\frac{·60}{·40}$
21	9×3½×·51	10×3½×·40	10×3½×·50	11×3½×·43	11×3½×·44	11×3½×·54	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·60}{·44}$	12×3½×3½×$\frac{·60}{·46}$	12×4×4×$\frac{·60}{·48}$	12×4×4×$\frac{·60}{·50}$
22	10×3½×·40	10×3½×·50	11×3½×·43	11×3½×·50	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·39}$	12×3½×3½×$\frac{·60}{·44}$	12×4×4×$\frac{·60}{·40}$	12×4×4×$\frac{·60}{·48}$	12×4×4×$\frac{·60}{·67}$	12×4×4×$\frac{·60}{·70}$
23	10×3½×·50	11×3½×·43	11×3½×·50	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·42}$	12×3½×3½×$\frac{·60}{·44}$	12×4×4×$\frac{·60}{·40}$	12×4×4×$\frac{·60}{·50}$	12×4×4×$\frac{·60}{·67}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·41}$
24	11×3½×·43	11×3½×·50	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·60}{·44}$	12×3½×3½×$\frac{·60}{·44}$	12×4×4×$\frac{·60}{·48}$	12×4×4×$\frac{·60}{·54}$	12×4×4×$\frac{·60}{·70}$	15×4×4×$\frac{·60}{·41}$	15×4×4×$\frac{·62}{·46}$	15×4×4×$\frac{·62}{·48}$

Angles (8–12) / Bulb Angles (13–24) — Channels

(1) The sizes of stiffeners are specified in inches.
(2) Sizes for intermediate lengths of stiffeners and heights of bulkhead deck shall be determined by interpolation.
(3) In the case of Channel Sections the lower thickness is that of the web and the upper thickness that of the flange.
(4) The above stiffeners shall comply with the specifications set forth in British Standard Specifications Numbers 4A–1934, 6–1924 and 4–1932 applicable to stiffeners of the scantlings and type indicated.

TABLE 2—(*continued*).

SIZES OF BULKHEAD STIFFENERS SPACED 30 INCHES APART AND FITTED WITH BRACKET END CONNECTIONS AT TOP AND BOTTOM IN ACCORDANCE WITH TABLE 4.

Overall Length of Stiffener, including End Connections, in feet.		Height of Bulkhead Deck above Top of Stiffener, in feet.									
		22	24	26	28	30	32	34	36	38	40
8	Bulb Angles	6×3×·34	6×3×·35	6×3×·39	7×3×·33	7×3×·33	7×3×·33	7×3×·36	7×3×·36	7×3×·40	8×3×·35
9		7×3×·33	7×3×·33	7×3×·36	7×3×·40	8×3×·35	8×3×·35	8×3×·35	8×3×·37	8×3×·37	8×3×·40
10		7×3×·40	8×3×·35	8×3×·35	8×3×·35	8×3×·37	8×3×·40	8×3½×·44	8×3½×·46	9×3½×·38	9×3½×·38
11		8×3×·37	8×3×·37	8×3×·42	8×3½×·46	9×3½×·38	9×3½×·38	9×3½×·38	9×3½×·44	9×3½×·45	9×3½×·51
12		8×3½×·46	9×3½×·38	9×3½×·38	9×3½×·38	9×3½×·45	9×3½×·51	9×3½×·51	10×3½×·40	10×3½×·40	10×3½×·50
13		9×3½×·38	9×3½×·44	9×3½×·51	10×3½×·40	10×3½×·40	10×3½×·42	10×3½×·50	11×3½×·43	11×3½×·43	11×3½×·43
14		9×3½×·51	10×3½×·40	10×3½×·42	10×3½×·50	11×3½×·43	11×3½×·43	11×3½×·44	11×3½×·50	11×3½×·54	12×3½×3½×$\frac{\cdot50}{\cdot38}$
15		10×3½×·50	11×3½×·43	11×3½×·43	11×3½×·44	11×3½×·50	11×3½×·54	12×3½×3½×$\frac{\cdot50}{\cdot38}$	12×3½×3½×$\frac{\cdot50}{\cdot38}$	12×3½×3½×$\frac{\cdot50}{\cdot39}$	12×3½×3½×$\frac{\cdot60}{\cdot44}$
16		11×3½×·43	11×3½×·44	11×3½×·52	12×3½×3½×$\frac{\cdot50}{\cdot38}$	12×3½×3½×$\frac{\cdot50}{\cdot38}$	12×3½×3½×$\frac{\cdot50}{\cdot39}$	12×3½×3½×$\frac{\cdot60}{\cdot44}$	12×3½×3½×$\frac{\cdot60}{\cdot44}$	12×4×4×$\frac{\cdot60}{\cdot40}$	12×4×4×$\frac{\cdot60}{\cdot48}$
17		11×3½×·52	12×3½×3½×$\frac{\cdot50}{\cdot38}$	12×3½×3½×$\frac{\cdot50}{\cdot38}$	12×3½×3½×$\frac{\cdot60}{\cdot44}$	12×3½×3½×$\frac{\cdot60}{\cdot44}$	12×3½×3½×$\frac{\cdot60}{\cdot46}$	12×4×4×$\frac{\cdot60}{\cdot48}$	12×4×4×$\frac{\cdot60}{\cdot48}$	12×4×4×$\frac{\cdot60}{\cdot52}$	12×4×4×$\frac{\cdot60}{\cdot67}$
18	Channels	12×3½×3½×$\frac{\cdot50}{\cdot38}$	12×3½×3½×$\frac{\cdot60}{\cdot44}$	12×3½×3½×$\frac{\cdot60}{\cdot44}$	12×4×4×$\frac{\cdot60}{\cdot40}$	12×4×4×$\frac{\cdot60}{\cdot48}$	12×4×4×$\frac{\cdot60}{\cdot50}$	12×4×4×$\frac{\cdot60}{\cdot67}$	12×4×4×$\frac{\cdot60}{\cdot67}$	12×4×4×$\frac{\cdot60}{\cdot70}$	15×4×4×$\frac{\cdot62}{\cdot41}$
19		12×3½×3½×$\frac{\cdot60}{\cdot44}$	12×4×4×$\frac{\cdot60}{\cdot40}$	12×4×4×$\frac{\cdot60}{\cdot48}$	12×4×4×$\frac{\cdot60}{\cdot52}$	12×4×4×$\frac{\cdot60}{\cdot67}$	12×4×4×$\frac{\cdot60}{\cdot70}$	15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot46}$	15×4×4×$\frac{\cdot62}{\cdot46}$
20		12×4×4×$\frac{\cdot60}{\cdot48}$	12×4×4×$\frac{\cdot60}{\cdot52}$	12×4×4×$\frac{\cdot60}{\cdot67}$	12×4×4×$\frac{\cdot60}{\cdot70}$	15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot46}$	15×4×4×$\frac{\cdot62}{\cdot48}$		
21		12×4×4×$\frac{\cdot60}{\cdot67}$	12×4×4×$\frac{\cdot60}{\cdot70}$	15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot46}$	15×4×4×$\frac{\cdot62}{\cdot50}$				
22		15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot41}$	15×4×4×$\frac{\cdot62}{\cdot46}$	15×4×4×$\frac{\cdot62}{\cdot50}$						
23		15×4×4×$\frac{\cdot62}{\cdot46}$	15×4×4×$\frac{\cdot62}{\cdot50}$								
24											

(1) The sizes of stiffeners are specified in inches.

(2) Sizes for intermediate lengths of stiffeners and heights of bulkhead deck shall be determined by interpolation.

(3) In the case of Channel Sections the lower thickness is that of the web and the upper thickness that of the flange.

(4) The above stiffeners shall comply with the specifications set forth in British Standard Specifications Numbers 6–1924 and 4–1932 applicable to stiffeners of the scantlings and type indicated.

TABLE 3.

(Paragraphs 2, 3 and 8 of this Schedule.)

SIZES OF BULKHEAD STIFFENERS SPACED 30 INCHES APART AND FITTED WITH LUG END CONNECTIONS AT TOP AND BOTTOM IN ACCORDANCE WITH TABLE 4.

Overall Length of Stiffener, including End Connections, in feet.		Height of Bulkhead Deck above Top of Stiffener, in feet.										
		0	2	4	6	8	10	12	14	16	18	20
8	Angles	*4½×3×·34	5×3×·36	6×3×·32	6×3×·38	5½×3×·34	5½×3×·38	6×3×·34	6×3×·40	7×3×·33	7×3×·33	7×3×·36
9		*6×3×·32	6×3×·32	5½×3×·34	5½×3×·38	6×3×·34	6×3×·39	7×3×·33	7×3×·36	7×3×·36	7×3×·46	8×3×·35
10		*6×3×·38	5½×3×·37	6×3×·34	7×3×·33	7×3×·33	7×3×·36	7×3×·40	8×3×·35	8×3×·35	8×3×·40	8×3½×·46
11	Bulb Angles	5½×3×·38	6×3½×·35	7×3×·33	7×3×·36	7×3×·40	8×3×·35	8×3×·37	8×3×·42	8×3½×·46	9×3½×·38	9×3½×·40
12		6×3×·39	7×3×·33	7×3×·38	8×3×·35	8×3×·35	8×3×·42	9×3½×·38	9×3½×·38	9×3½×·40	9×3½×·51	10×3½×·40
13		7×3×·33	7×3×·40	8×3×·35	8×3×·40	8×3½×·46	9×3½×·38	9×3½×·44	9×3½×·51	10×3½×·40	10×3½×·45	11×3½×·43
14		7×3×·41	8×3×·35	8×3½×·46	9×3½×·38	9×3½×·40	9×3½×·51	10×3½×·40	10×3½×·45	11×3½×·43	11×3½×·43	11×3½×·45
15		8×3×·35	8×3×·47	9×3½×·38	9×3½×·45	10×3½×·40	10×3½×·42	10×3½×·50	11×3½×·43	11×3½×·45	11×3½×·56	12×3½×3½×·50/·38
16		8×3½×·46	9×3½×·38	9×3½×·51	10×3½×·40	10×3½×·48	11×3½×·43	11×3½×·44	11×3½×·45	12×3½×3½×·50/·38	12×3½×3½×·50/·42	12×3½×3½×·60/·44
17		9×3½×·40	9×3½×·51	10×3½×·42	11×3½×·43	11×3½×·43	11×3½×·48	11×3½×·56	12×3½×3½×·50/·39	12×3½×3½×·60/·44	12×4×4×·60/·40	12×4×4×·60/·48
18		9×3½×·51	10×3½×·45	11×3½×·43	11×3½×·44	11×3½×·56	12×3½×3½×·50/·38	12×3½×3½×·60/·44	12×4×4×·60/·40	12×4×4×·60/·48	12×4×4×·60/·67	12×4×4×·60/·70
19		10×3½×·42	11×3½×·43	11×3½×·45	12×3½×3½×·50/·38	12×3½×3½×·50/·39	12×3½×3½×·60/·44	12×4×4×·60/·48	12×4×4×·60/·52	12×4×4×·60/·67	15×4×4×·62/·41	15×4×4×·62/·41
20		11×3½×·43	11×3½×·48	12×3½×3½×·50/·38	12×3½×3½×·60/·44	12×3½×3½×·60/·46	12×4×4×·60/·48	12×4×4×·60/·67	12×4×4×·60/·70	15×4×4×·62/·41	15×4×4×·62/·46	15×4×4×·62/·53
21		11×3½×·48	12×3½×3½×·50/·38	12×3½×3½×·60/·44	12×4×4×·60/·40	12×4×4×·60/·48	12×4×4×·60/·67	15×4×4×·62/·41	15×4×4×·62/·41	15×4×4×·62/·50		
22	Channels	12×3½×3½×·50/·38	12×3½×3½×·60/·44	12×4×4×·60/·40	12×4×4×·60/·52	12×4×4×·60/·67	15×4×4×·62/·41	15×4×4×·62/·46				
23		12×3½×3½×·60/·44	12×4×4×·60/·40	12×4×4×·60/·54	12×4×4×·60/·70	15×4×4×·62/·41	15×4×4×·62/·46					
24		12×4×4×·60/·40	12×4×4×·60/·56	12×4×4×·60/·74	15×4×4×·62/·41	15×4×4×·62/·48						

(1) The sizes of stiffeners are specified in inches.
(2) Sizes for intermediate lengths of stiffeners and heights of bulkhead deck shall be determined by interpolation.
(3) In the case of Channel Sections the lower thickness is that of the web and the upper thickness that of the flange.
(4) The above stiffeners shall comply with the specifications set forth in British Standard Specifications Numbers 4A–1934, 6–1924 and 4–1932 applicable to stiffeners of the scantlings and type indicated.
(5) The ends of upper between deck stiffeners marked * may be revited to boundary bars only without lug end connections.

TABLE 3—*(continued)*.

SIZES OF BULKHEAD STIFFENERS SPACED 30 INCHES APART AND FITTED WITH LUG END CONNECTIONS AT TOP AND BOTTOM IN ACCORDANCE WITH TABLE 4.

Overall Length of Stiffener, including End Connections, in feet.		Height of Bulkhead Deck above Top of Stiffener, in feet.									
		22	24	26	28	30	32	34	36	38	40
8	Bulb Angles	7×3×·38	7×3×·41	8×3×·35	8×3×·35	8×3×·37	8×3×·40	8×3×·44	9×3½×·38	9×3½×·38	9×3½×·38
9		8×3×·37	8×3×·40	8×3½×·46	9×3½×·38	9×3½×·38	9×3½×·38	9×3½×·40	9×3½×·45	9×3½×·51	10×3½×·40
10		9×3½×·38	9×3½×·38	9×3½×·40	9×3½×·45	9×3½×·51	10×3½×·40	10×3½×·40	10×3½×·42	10×3½×·50	11×3½×·43
11		9×3½×·45	9×3½×·51	10×3½×·40	10×3½×·42	10×3½×·50	11×3½×·43	11×3½×·43	11×3½×·43	11×3½×·45	11×3½×·52
12		10×3½×·42	10×3½×·46	10×3½×·50	11×3½×·43	11×3½×·45	11×3½×·52	11×3½×·55	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·39}$	12×3½×3½×$\frac{·60}{·44}$
13		11×3½×·43	11×3½×·44	11×3½×·52	11×3½×·55	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·42}$	12×3½×3½×$\frac{·60}{·44}$	12×3½×3½×$\frac{·60}{·44}$	12×3½×3½×$\frac{·60}{·46}$	12×4×4×$\frac{·60}{·48}$
14		11×3½×·55	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·42}$	12×3½×3½×$\frac{·60}{·44}$	12×3½×3½×$\frac{·60}{·44}$	12×4×4×$\frac{·60}{·40}$	12×4×4×$\frac{·60}{·48}$	12×4×4×$\frac{·60}{·50}$	12×4×4×$\frac{·60}{·67}$	12×4×4×$\frac{·60}{·67}$
15	Channels	12×3½×3½×$\frac{·60}{·44}$	12×3½×3½×$\frac{·60}{·44}$	12×4×4×$\frac{·60}{·40}$	12×4×4×$\frac{·60}{·48}$	12×4×4×$\frac{·60}{·52}$	12×4×4×$\frac{·60}{·67}$	12×4×4×$\frac{·60}{·67}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·46}$
16		12×4×4×$\frac{·60}{·40}$	12×4×4×$\frac{·60}{·48}$	12×4×4×$\frac{·60}{·67}$	12×4×4×$\frac{·60}{·67}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·46}$	15×4×4×$\frac{·62}{·46}$	15×4×4×$\frac{·62}{·50}$	
17		12×4×4×$\frac{·60}{·67}$	12×4×4×$\frac{·60}{·70}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·46}$	15×4×4×$\frac{·62}{·50}$				
18		15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·41}$	15×4×4×$\frac{·62}{·46}$	15×4×4×$\frac{·62}{·53}$						
19		15×4×4×$\frac{·62}{·46}$									
20											
21											
22											
23											
24											

(1) The sizes of stiffeners are specified in inches.
(2) Sizes for intermediate lengths of stiffeners and heights of bulkhead deck shall be determined by interpolation.
(3) In the case of Channel Sections the lower thickness is that of the web and the upper thickness that of the flange.
(4) The above stiffeners shall comply with the specifications set forth in British Standard Specifications Numbers 6–1924 and 4–1932 applicable to stiffeners of the scantlings and type indicated.

TABLE 4.

(Paragraphs 2, 8 and 10 of this Schedule.)

END CONNECTIONS FOR STIFFENERS.

Type and Depth of Stiffener.	Bracket End Connections.			Lug End Connections.
	Thickness of Bracket in inches.	Width of Flange in inches.	Number and Size of Rivets in each Arm of Bracket.	Number and Size of Rivets in Lugs.
Angles 6″ and under	·34		3 @ ¾″ diameter	2 @ ¾″ diameter
Bulb Angles 6″ and under	·36		3 @ ¾″ „	2 @ ¾″ „
Bulb Angles 7″	·40		4 @ ¾″ „	3 @ ¾″ „
„ „ 8″	·42		5 @ ¾″ „	3 @ ¾″ „
„ „ 9″	·34	2¼	6 @ ¾″ „	4 @ ¾″ „
„ „ 10″	·36	2½	7 @ ¾″ „	4 @ ¾″ „
„ „ 11″	·38	2¾	7 @ ⅞″ „	4 @ ⅞″ „
„ „ 12″	·4	3	8 @ ⅞″ „	5 @ ⅞″ „
Channels 12″ × 3½″ × 3½″	·4	3	9 @ ⅞″ „	6 @ ⅞″ „
„ 12″ × 4″ × 4″	·4	3	10 @ ⅞″ „	7 @ ⅞″ „
„ 15″ × 4″ × 4″	·44	3½	13 @ 1″ „	8 @ ⅞″ „

Flanged

(1) The distance from the heel of the boundary bar to the extremities of the arms of the bracket shall not be less than two and one-half times the depth of the stiffener to which the bracket is connected.

(2) The overlap of stiffeners on brackets shall not be less than 0·12 of the span.

TABLE 5.

(Paragraphs 5 and 8 of this Schedule.)

SIZES OF TUNNEL STIFFENERS SPACED 36 INCHES APART.

Mean Height from Base of Tunnel to Bulkhead Deck, in feet.	Height from Base of Tunnel to the Top of Flat Side in feet.					
	3	4	5	6	7	8
12	3×2½×·24	4×2½×·26	4½×3×·30	5×3×·34	6×3×·32	5½×3×·32
16	3½×2½×·25	4×3×·30	5×3×·32	6×3×·32	5½×3×·32	6×3×·34
20	3½×2½×·26	4½×3×·30	6×3×·32	6×3×·38	6×3×·34	7×3×·33
24	4×2½×·28	5×3×·32	6×3×·32	5½×3×·37	6×3½×·35	7×3×·36
28	4×3×·30	5×3×·36	6×3×·40	6×3×·34	7×3×·33	8×3×·35
32	4½×3×·30	6×3×·32	5½×3×·37	7×3×·33	7×3×·38	8×3×·37
36	4½×3×·32	6×3×·32	6×3×·34	7×3×·33	7×3×·45	8×3×·42
40	4½×3×·34	6×3×·38	6×3×·35	7×3×·36	8×3×·37	9×3½×·38
44	5×3×·32	6×3×·40	7×3×·33	8×3×·35	8×3×·42	9×3½×·38
48	5×3×·36	5½×3×·32	7×3×·33	8×3×·35	8×3½×·46	9×3½×·45
52	6×3×·32	5½×3×·37	7×3×·36	8×3×·37	9×3½×·38	10×3½×·40
56	6×3×·32	6×3×·34	7×3×·36	8×3×·42	9×3½×·38	10×3½×·40
60	6×3×·32	6×3×·35	8×3×·35	8×3½×·46	9×3½×·51	10×3½×·50

Angles

←——Angles——→ ←——Bulb Angles——→

(1) The sizes of the stiffeners are specified in inches.

(2) Sizes for intermediate heights shall be determined by interpolation.

(3) Angle stiffeners of 6 inches in depth and all bulb angle stiffeners shall be connected to the inner bottom plating by a lug.

(4) The above stiffeners shall comply with the specifications set forth in British Standard Specifications 4A–1934 and 6–1924 applicable to stiffeners of the scantlings and type indicated.

TABLE 1A.

(Paragraphs 8 and 10 of this Schedule.)

THICKNESSES OF BULKHEAD AND TUNNEL PLATING.

Plating of Collision Bulkhead: Stiffeners spaced 24 inches apart. Plating of Bulkheads (other than the Collision Bulkhead) and Flat Plating of Tunnels: Stiffeners spaced 30 inches apart Curved Plating of Tunnels: Stiffeners spaced 36 inches apart.			Plating of Bulkheads (other than the Collision Bulkhead) and Flat Plating of Tunnels: Stiffeners spaced 36 inches apart		
Depth at Middle Line from Bulkhead Deck to Lower Edge of Plate in feet.		Thickness in inches.	Depth at Middle Line from Bulkhead Deck to Lower Edge of Plate in feet.		Thickness in inches.
Above.	*Not above.*		*Above.*	*Not above.*	
—	7	·18	—	8	·22
7	9	·20	8	10	·24
9	11	·22	10	12	·26
11	14	·24	12	14	·28
14	16·5	·26	14	16	·30
16·5	19	·28	16	18	·32
19	22	·30	18	21	·34
22	25	·32	21	23	·36
—	—	—	23	26	·38
25	28	·34	26	29	·40
28	31	·36	29	31·5	·42

If the stiffeners are spaced otherwise than is specified above, the thicknesses of the plating shall be such as will result in a strength equivalent to that resulting from the thicknesses and spacings specified above.

TABLE 2A.

(Paragraphs 8 and 10 of this Schedule.)

SIZES OF BULKHEAD STIFFENERS SPACED 30 INCHES APART AND FITTED WITH BRACKET END CONNECTIONS AT TOP AND BOTTOM IN ACCORDANCE WITH TABLE 4.

Overall Length of Stiffener, including End Connections, in feet.		Height of Bulkhead Deck above Top of Stiffener, in feet.									
		0	2	4	6	8	10	12	14	16	18
6	Angles					4×2½×·25	4×2½×·26	4×3×·30	4×3×·34	4½×3×·30	4½×3×·32
7						4½×2½×·28	4½×3×·30	4½×3×·32	5×3×·30	5×3×·34	5×3×·36
8		3×2½×·24	3½×2½×·26	4×2½×·28	4½×3×·30	5×3×·30	6×3×·32	6×3×·32	6×3×·32	5×2½×·34	5×2½×·34
9		3½×2½×·26	4×2½×·28	4½×3×·30	5×3×·30	6×3×·32	6×3×·32	5×2½×·34	5×2½×·36	5½×3×·32	5½×3×·34
10		4×2½×·28	4½×3×·30	5×3×·32	6×3×·32	5×2½×·34	5×2½×·36	5½×3×·34	5½×3×·37	6×3×·34	6×3×·35
11		4½×3×·30	5×3×·32	6×3×·32	5×2½×·34	5½×3×·32	5½×3×·34	6×3×·34	7×3×·33	7×3×·33	7×3×·36
12		5×3×·32	6×3×·32	5×2½×·34	5½×3×·32	6×3×·34	6×3×·35	7×3×·33	7×3×·36	7×3×·36	8×3×·35
13		6×3×·32	5×2½×·34	5½×3×·32	6×3×·34	7×3×·33	7×3×·33	7×3×·36	8×3×·35	8×3×·35	
14	Bulb Angles	5×2½×·34	5½×3×·32	6×3×·34	7×3×·33	7×3×·36	7×3×·38	8×3×·35	8×3×·37	8×3×·37	
15		5½×3×·32	6×3×·34	7×3×·33	7×3×·36	7×3×·40	8×3×·35	8×3×·37	8×3½×·46		
16		6×3×·34	7×3×·33	7×3×·36	8×3×·35	8×3×·37	8×3×·37	8×3½×·46	9×3½×·38		
17		7×3×·33	7×3×·36	8×3×·35	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·38			
18		7×3×·36	8×3×·35	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·38	9×3½×·51			
19		8×3×·35	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·40	9×3½×·51				
20		8×3×·37	8×3½×·46	9×3½×·38	9×3½×·40	9×3½×·51	10×3½×·40				

(1) The sizes of stiffeners are specified in inches.

(2) Sizes for intermediate lengths of stiffeners and heights of bulkhead deck shall be determined by interpolation.

(3) The above stiffeners shall comply with the specifications set forth in British Standard Specifications 4A–1934 and 6–1924 applicable to stiffeners of the scantlings and type indicated.

TABLE 3A.

(Paragraphs 8 and 10 of this Schedule.)

SIZES OF BULKHEAD STIFFENERS SPACED 30 INCHES APART AND FITTED WITH LUG END CONNECTIONS AT TOP AND BOTTOM IN ACCORDANCE WITH TABLE 4.

Overall Length of Stiffener, including End Connections, in feet.		Height of Bulkhead Deck above Top of Stiffener, in feet.									
		0	2	4	6	8	10	12	14	16	18
8	Angles					6×3×·32	6×3×·38	5½×3×·32	5½×3×·35	6×3×·34	6×3½×·35
9			5×3×·32	6×3×·32	6×3×·36	5½×3×·32	5½×3×·37	6×3×·34	7×3×·33	7×3×·33	7×3×·36
10		5×3×·30	6×3×·32	6×3×·38	5½×3×·34	6×3½×·35	7×3×·33	7×3×·33	7×3×·36	7×3×·41	8×3×·35
11		6×3×·32	5½×3×·32	5½×3×·38	6×3½×·35	7×3×·33	7×3×·36	7×3×·41	8×3×·35	8×3×·37	8×3×·42
12		6×3×·36	6×3×·34	6×3×·39	7×3×·33	7×3×·40	8×3×·35	8×3×·35	8×3×·42	9×3½×·38	9×3½×·38
13	Bulb Angles	6×3×·34	7×3×·33	7×3×·33	7×3×·41	8×3×·35	8×3×·40	8×3½×·46	9×3½×·38	9×3½×·44	
14		7×3×·33	7×3×·36	8×3×·35	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·40	9×3½×·51	10×3½×·40	
15		7×3×·33	8×3×·35	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·51	10×3½×·40	10×3½·×·42		
16		7×3×·40	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·51	10×3½·×·40	10×3½×·50	11×3½×·43		
17		8×3×·35	8×3½×·46	9×3½×·38	9×3½×·51	10×3½×·40	11×3½×·43	11×3½×·43			
18		8×3½×·46	9×3½×·38	9×3½×·51	10×3½×·42	11×3½×·43	11×3½×·45	12×3½×3½×$\frac{·50}{·38}$			
19		9×3½×·38	9×3½×·51	10×3½×·42	11×3½×·43	11×3½×·48	12×3½×3½×$\frac{·50}{·38}$				
20		9×3½×·51	10×3½×·42	11×3½×·43	11×3½×·48	12×3½×3½×$\frac{·50}{·38}$	12×3½×3½×$\frac{·50}{·44}$				
						←Channels→					

(1) The sizes of stiffeners are specified in inches.
(2) Sizes for intermediate lengths of stiffeners and heights of bulkhead deck shall be determined by interpolation.
(3) In the case of Channel Sections the lower thickness is that of the web and the upper thickness that of the flange.
(4) The above stiffeners shall comply with the specifications set forth in British Standard Specifications Numbers 4A–1934, 6–1924 and 4–1932 applicable to stiffeners of the scantlings and type indicated.

TABLE 3B.

(Paragraphs 8 and 10 of this Schedule.)

SIZES OF BULKHEAD STIFFENERS SPACED 30 INCHES APART NOT FITTED WITH BRACKET OR LUG END CONNECTIONS.

Overall Length of Stiffener, including End Connections in feet.		Height of Bulkhead Deck above Top of Stiffener, in feet.									
		0	2	4	6	8	10	12	14	16	18
6	Angles	3×2½×·23	3½×2½×·26	4×2½×·28	4×3×·32	4½×3×·32	5×3×·32	6×3×·32	6×3×·32	6×3×·34	6×3×·38
7		3½×2½×·25	4×2½×·28	4½×3×·30	5×3×·32	6×3×·32	6×3×·32	6×3×·38	5½×3×·32	5½×3×·34	6×3×·34
8		4×2½×·25	4½×3×·30	5×3×·34	6×3×·32	6×3×·38	5½×3×·32	6×3×·34	6×3×·35	7×3×·33	7×3×·33
9		4½×3×·30	6×3×·32	6×3×·34	5½×3×·32	6×3×·34	6×3½×·35	7×3×·33	7×3×·36	7×3×·38	8×3×·35
10		6×3×·32	6×3×·34	5½×3×·32	6×3×·34	7×3×·33	7×3×·36	7×3×·38	8×3×·35	8×3×·35	8×3×·37
11		6×3×·32	5½×3×·32	6×3×·35	7×3×·33	7×3×·36	8×3×·35	8×3×·35	8×3×·40	8×3½×·46	9×3½×·38
12		5½×3×·32	6×3×·35	7×3×·33	7×3×·40	8×3×·35	8×3×·37	8×3×·40	9×3½×·38	9×3½×·40	9×3½×·51
13		6×3×·34	7×3×·33	7×3×·40	8×3×·35	8×3×·42	9×3½×·38	9×3½×·38	9×3½×·40	10×3½×·40	
14		7×3×·33	7×3×·40	8×3×·37	8×3½×·46	9×3½×·38	9×3½×·45	10×3½×·40	10×3½×·42	10×3½×·50	
15		7×3×·38	8×3×·37	8×3½×·44	9×3½×·38	9×3½×·51	10×3½×·40	10×3½×·50	11×3½×·43		
16		8×3×·35	8×3½×·46	9×3½×·38	9×3½×·51	10×3½×·40	11×3½×·43	11×3½×·50	11×3½×·52		
17		8×3×·42	9×3½×·38	9×3½×·51	10×3½×·45	11×3½×·43	11×3½×·50	11×3½×·56			
18	Bulb Angles	9×3½×·38	9×3½×·51	10×3½×·45	11×3½×·43	11×3½×·50	12×3½×3½×·50/·38	12×3½×3½×·50/·44			
19		9×3½×·51	10×3½×·42	11×3½×·43	11×3½×·52	12×3½×3½×·50/·38	12×3½×3½×·60/·44				
20		10×3½×·40	11×3½×·43	11×3½×·50	12×3½×3½×·50/·38	12×3½×3½×·60/·44	12 ×4×4×·60/·48				
		← Channels →									

(1) The sizes of stiffeners are specified in inches.
(2) Sizes for intermediate lengths of stiffeners and heights of bulkhead deck shall be determined by interpolation.
(3) The ends of the stiffeners shall be riveted to the bulkhead boundary angle.
(4) In the case of Channel Sections the lower thickness is that of the web and the upper thickness that of the flange.
(5) The above stiffeners shall comply with the specifications set forth in British Standard Specifications Numbers 4A–1934, 6–1924 and 4–1932 applicable to stiffeners of the scantlings and type indicated.

TABEL 5A.
(Paragrawe 8 en 10 van hierdie Bylae.)

GROOTTES VAN TONNELVERSTYWINGS 36 DUIM VANMEKAAR.

Gemiddelde hoogte vanaf die tonnelvoet tot aan die beskotdek, in voet.	Hoogte vanaf die tonnelvoet tot aan bokant van platkant, in voet.						
	3 vt. 0 dm.	3 vt. 6 dm.	4 vt. 0 dm.	4 vt. 6 dm.	5 vt. 0 dm.	5 vt. 6 dm.	6 vt. 0 dm.
8 (Hoeke)	2½×2½×·20	2½×2½×·24	3×2½×·23				
12	2½×2½×·24	3×2½×·26	3½×2½×·25	4×2½×·25	4×2½×·28	4×3×·30	
16	3×2½×·24	3½×2½×·26	4×2½×·26	4×3×·32	4½×3×·32	5×3×·32	5×3×·38
20	3½×2½×·25	4×2½×·26	4×3×·32	4½×3×·34	5×3×·32	6×3×·32	6×3×·32
24	3½×2½×·30	4×3×·30	4½×3×·32	5×3×·32	6×3×·32	6×3×·34	6×3×·40
28	4×2½×·28	4½×3×·30	4½×3×·38	5×3×·38	6×3×·32	6×3×·40	5½×3×·34 Bulbhoekstale

(1) Die groottes van die verstywings is in duim gespesifiseer.

(2) Groottes vir intermediêre hoogtes moet deur interpolasie bepaal word.

(3) Die ente van tonnelverstywings moet aan die tonnelgrenshoeke vasgeklink word.

(4) Bostaande verstywings moet voldoen aan die spesifikasies soos uiteengesit in die „ British Standard Specifications 4A–1934 and 6–1924 " wat op verstywings van die afmetings en tipe, soos aangegee, van toepassing is.

TABLE 5A.
(Paragraphs 8 and 10 of this Schedule.)

SIZES OF TUNNEL STIFFENERS SPACED 36 INCHES APART.

Mean Height from Base of Tunnel to Bulkhead Deck in feet.	Height from Base of Tunnel to Top of Flat Side in feet.						
	3 feet 0 inches.	3 feet 6 inches.	4 feet 0 inches.	4 feet 6 inches.	5 feet 0 inches.	5 feet 6 inches.	6 feet 0 inches.
8 (Angles)	2½×2½×·20	2½×2½×·24	3×2½×·23				
12	2½×2½×·24	3×2½×·26	3½×2½×·25	4×2½×·25	4×2½×·28	4×3×·30	
16	3×2½×·24	3½×2½×·26	4×2½×·26	4×3×·32	4½×3×·32	5×3×·32	5×3×·38
20	3½×2½×·25	4×2½×·26	4×3×·32	4½×3×·34	5×3×·32	6×3×·32	6×3×·32
24	3½×2½×·30	4×3×·30	4½×3×·32	5×3×·32	6×3×·32	6×3×·34	6×3×·40
28	4×2½×·28	4½×3×·30	4½×3×·38	5×3×·38	6×3×·32	6×3×·40	5½×3×·34 Bulb Angles

(1) The sizes of the stiffeners are specified in inches.

(2) Sizes for intermediate heights shall be determined by interpolation.

(3) The ends of tunnel stiffeners shall be riveted to the tunnel boundary angles.

(4) The above stiffeners shall comply with the specifications set forth in British Standard Specifications Numbers 4A–1934 and 6–1924 applicable to stiffeners of the scantlings and type indicated.

(*Regulasie* 55.)

VIERDE BYLAE.

VOORSIENING VIR KINEMATOGRAFIESE VERTONINGS.

1. UITGANG UIT PUBLIEKE KAMERS.

'n Publieke kamer waarin dit die voorneme is om kinematografiese vertonings te hou, moet van nooduitgange voorsien wees wat ver van die projektor of verwyder is, en wat, met inagneming van die aantal persone in die gehoor, voldoende is. Die nooduitgangdeure moet duidelik met die woord „ UITGANG " gemerk wees, en so gemaak wees dat hulle maklik na buite kan opgaan. Die sitplekke vir die vertonings moet in rye gerangskik word, sodat vrye toegang tot sulke deure nie belemmer word nie.

(*Regulation* 55.)

FOURTH SCHEDULE.

PROVISION FOR CINEMATOGRAPH EXHIBITIONS.

1. EXITS FROM PUBLIC ROOMS.

Any public room in which cinematograph exhibitions are intended to be given shall be provided with means of escape which are remote from the projector and are adequate having regard to the number of persons who may be in the audience. The doors by which such escape may be made shall be clearly marked with the word " EXIT ", and shall be so constructed as easily to open outwards. The seating shall be arranged in rows for the exhibitions so as not to interfere with free access to such doors.

2. OPBERGING VAN FILMS.

(1) In die skip moet daar voorsiening gemaak word vir—

(*a*) 'n opbergkamer wat begrens word deur afdelings van die „ A "-klas; of

(*b*) 'n sluitkas wat gebou is van materiaal wat net so doeltreffend teen brand is as 'n afdeling van die „ A "-klas,

en uitsluitend gebruik word vir die opberging van kinematografiese films wat vir vertoning in die skip bedoel is. Sodanige opbergkamer of sluitkas moet, na gelang van die geval, waar doenlik, op die boonste dek, ver van die passasiersruimtes af geleë wees. Dit moet voorsien wees van 'n uitlaatopening na die buitelug met 'n oppervlakte van minstens 'n vierkantduim vir elke 5 pond gewig van die film wat in die kamer of sluitkas opgeberg mag word.

(2) 'n Metaalspoelkas, met sluitmiddels om die deurgang van vlamme in die kas te voorkom moet vir die opberging en projeksie van elke filmspoel voorsien word, en wat aan die projektor geheg is en verwyder kan word sonder dat dit oopgemaak word. Metaalhouers met selfsluitende deksels moet in voldoende getalle vir die opberging van die spoelkaste voorsien word.

3. PROJEKTORKAMERS EN -KABINETTE.

(1) Indien die skip voorsien is van 'n filmprojektor vir die hou van kinematografiese vertonings in 'n publieke kamer op die skip, wat nie 'n draagbare projektor is nie, moet daar in die skip voorsiening gemaak word vir—

(*a*) 'n permanente projektorkamer, wat met afdelings van die „ A "-klas begrens is, en waartoe toegang verkry word deur 'n ruim waarin daar geen gehoor is nie, en moet waar doenlik, van die buitelug af wees; of

(*b*) 'n vaste of draagbare projektorkabinet wat geheel-en-al gemaak is van of beklee is met vuurvaste materiaal.

In onderstaande subparagrawe van hierdie paragraaf beteken die uitdrukking „ projektorkamer " ook 'n projektorkabinet.

(2) Alle inrigtings in die projektorkamer moet geheel-en-al gemaak word van of beklee word met vuurvaste materiaal. Die projektorkamer moet groot genoeg wees sodat die projektor behoorlik bedien kan word.

(3) Elke ingang na 'n projektorkamer moet voorsien word van 'n selfsluitende deur wat na buite oopgaan, moet goed pas en moet net so doeltreffend wees om brand te weerstaan as die bouwerk waarin dit aangebring is.

(4) Daar mag nie meer as twee openings in die bouwerk van die projektorkamer vir elke projektor in die kamer wees nie, hetsy vir die projeksie van lig of vir waarneming van die doek. Die openings mag nie groter wees as wat vir sulke doeleindes vereis word nie en moet met sterk spieëlglas verglaas word.

(5) Middels moet aangebring word vir die inlaat van voldoende vars lug in die projektorkamer. Die ventilasie-openings moet bedek word met gaasdraad met maas van minstens 16 per vierkant duim. Waar ookal doenlik, moet die ventilasie na die buitelug wees.

(6) Die openings in die projektorkamer vir die doeleindes van projeksie, waarneming en ventilasie moet toegerus word met noupassende selfsluitende luike wat gelyktydig oopgemaak kan word. Oopmaakmiddels vir die luike moet aan die binne- en ook aan die buitekant van die projektorkamer aangebring word. Alle openings waardeur kabels na die projektorkamer gaan, moet op so 'n wyse gedig word dat rook nie daardeur kan gaan nie. Die projektorkamer en die deure en luike daarin moet so gemaak word dat as die deure en luike gesluit is, daar geen rook uit die projektorkamer kan kom nie.

(7) Afsonderlike elektriese stroombane moet vir die ligbron van die projektor en vir die verligting van die projektorkamer aangelê word. Die toevoer van elektriese energie vir die ligbron van die projektor moet deur twee skakelaars, wat onderskeidelik binne en buite die projektorkamer aangebring is, beheer kan word, en in 'n posisie wat ver genoeg daarvandaan verwyder is dat dit veilig is om die skakelaar in werking te stel ten spyte van 'n brand in die projektorkamer.

(8) Toestelle moet aangebring word om te voorkom dat films met enige elektriese lamp, klemskroef of ander elektriese inrigting binne die projektorkamer in aanraking kom. Alle skakelaars en sekerings in die projektorkamer moet volkome beskerm wees en alle weerstande in daardie kamer moet van 'n ontwerp wees wat oorverhitting sal voorkom.

4. PROJEKTORS.

Elke projektor, wat nie 'n draagbare projektor is nie, wat in die skip voorsien word en bedoel is vir die hou van kinematografiese vertonings in 'n publieke kamer daarin, moet op stutte van vuurvaste materiaal stewig in posisie bevestig word. Die projektor moet van 'n metaalsluiter voorsien wees wat maklik met die hand tussen die projektorlamp en die filmvenster ingeskuif kan word, en van 'n 'n tweede sluiter wat so ingerig is dat dit die filmvenster outomaties van die ligbron afsluit wanneer die projektor stop. Die filmvenster moet stewig gemaak wees met 'n verwarmende oppervlak wat voldoende is om die hitte wat deur die ligbron mag ontstaan, te versprei. Die opening vir die film moet nou genoeg wees sodat vlamme uit die lugopening nie na bo of onder kan gaan nie.

5. VERTONINGS OP DIE DEK.

Indien die skip van 'n projektor voorsien is wat nie 'n draagbare projektor is nie, en bedoel is vir die hou van kinematografiese vertonings op 'n oop dek, en die ligbron van so 'n projektor nie lugdig in 'n glasbol afgesluit is nie, is die bepalings van paragrawe 3 en 4 van toepassing op die skip en die projektor soos hulle van

2. STORAGE OF FILMS.

(1) There shall be provided in the ship—

(*a*) a storage room bounded by "A" class divisions; or

(*b*) a locker constructed of material capable of resisting fire as efficiently as an "A" class division,

appropriated solely for the storage of cinematograph films intended to be exhibited in the ship. Such storage room or locker, as the case may be, shall, whenever practicable, be situated on an upper deck and in a position remote from passenger spaces. It shall be provided with an outlet to the open air with an area of not less than one square inch for each 5 pounds weight of film that may be stored in the room or locker.

(2) A metal spool box, with means of closure which will prevent the passage of flame into the box, shall be provided for the storage and projection of each spool of film, and shall be capable of being attached to and removed from the projector without being opened. Metal containers with self-closing lids shall be provided in sufficient number for the storage of the spool boxes.

3. PROJECTOR ROOMS AND CABINETS.

(1) If the ship is provided with a film projector intended for giving cinematograph exhibitions in a public room therein, not being a portable projector, there shall be provided in the ship—

(*a*) a permanent projector room, which shall be bounded by "A" class divisions, and to which access shall be obtained from a space in which the audience are not accommodated, and shall, whenever practicable, be from the open air; or

(*b*) a fixed or portable projector cabinet made wholly of, or lined with, incombustible material.

In the following sub-paragraphs of this paragraph the expression " projector room " shall be deemed to include a projector cabinet.

(2) All fittings in the projector room shall be made wholly of, or lined with, incombustible material. The projector room shall be large enough to enable the projector to be properly operated.

(3) Every entrance to a projector room shall be provided with a self-closing door which shall open outwards and shall be well-fitting and as effective in resisting fire as the structure in which it is fitted.

(4) There shall not be provided more than two openings in the structure of the projector room for each projector in the room, whether for the projection of light or the observation of the screen. The openings shall be no larger than is required for such purposes and shall be glazed with stout plate glass.

(5) Means shall be provided which will ensure an adequate supply of fresh air within the projector room. The ventilation openings shall be covered with wire netting of mesh not less than 16 per square inch. The ventilation shall, wherever practicable, be to the open air.

(6) The openings in the projector room for projection, observation and ventilation purposes shall be fitted with close-fitting self-closing shutters capable of being simultaneously released. Means for releasing the shutters shall be provided both inside and outside the projector room. All openings through which cables pass into the projector room shall be sealed in a manner which will prevent the passage of smoke. The projector room and the doors and shutters thereof shall be so constructed that when the doors and shutters are closed the passage of smoke from the projector room will be prevented.

(7) Separate electrical circuits shall be provided for the illuminant of the projector and for the lighting of the projector room. The supply of electrical energy for the illuminant of the projector shall be capable of being controlled by two switches situated respectively inside the projector room and outside the projector room at a position sufficiently distant therefrom to enable the switch to be safely operated despite a fire in the projector room.

(8) Devices shall be provided which will prevent the films from coming into contact with any electric lamp, terminal or other electrical fitting within the projector room. All switches and fuses in the projector room shall be completely protected, and all resistances in that room shall be of a design which will prevent overheating.

4. PROJECTORS.

Every projector, not being a portable projector, provided in the ship and intended for giving cinematograph exhibitions in a public room therein shall be firmly fixed in position and shall rest upon supports constructed of incombustible material. The projector shall be fitted with a metal shutter which can be readily inserted by hand between the projector lamp and the film-gate, and with a second shutter so arranged as automatically to cut off the film-gate from the illuminant when the projector stops. The film-gate shall be of substantial construction and shall afford sufficient heating surface to dissipate the heat which may be engendered by the illuminant. The opening for the film shall be sufficiently narrow to prevent flames travelling upwards or downwards from the light-opening.

5. EXHIBITIONS ON DECK.

If the ship is provided with a projector, not being a portable projector, intended for giving cinematograph exhibitions on an open deck, and the illuminant of such projector is not hermetically sealed in a glass bulb, the provisions of paragraphs 3 and 4 shall apply to

toepassing is in die geval van 'n skip wat met 'n projektor wat nie 'n draagbare projektor is nie, voorsien is, en bedoel is vir die hou van kinematografiese vertonings in 'n publieke kamer.

6. DRAAGBARE PROJEKTORS.

(1) Draagbare projektors en die ligbron daarvan moet omsluit wees in 'n omhulsel wat van vuurvaste materiaal gemaak is. Daar mag in so 'n omhulsel geen openinge wees nie behalwe dié wat vir die behoorlike werking van die projektor en vir die ventilasie van die omhulsel van die projektor nodig is.

(2) Spoelkassies vir gebruik met draagbare projektors moet so ontwerp wees dat hulle 'n rol van hoogstens 10 duim in deursnee kan bevat.

(3) Die elektriese lamp wat as ligbron vir 'n draagbare projektor voorsien word, moet lugdig in 'n glasbol afgesluit word en mag hoogstens 1,000 Watt wees.

(4) Elke draagbare projektor moet van 'n filter of ander toestel voorsien wees wat blywend daaraan bevestig is en die hitte van die ligstrale wat deur die ligbron uitgestraal word, kan onderskep om aldus die ontsteking van 'n stilstaande ontvlambare film, wanneer die film vir 'n periode van drie minute aan die strale blootgestel is, te voorkom.

7. LIGBRON VIR PROJEKTORS.

Die ligbron wat vir 'n projektor voorsien word, moet 'n elektriese lamp wees.

8. „ NIE ROOK NIE " KENNISGEWINGS.

(1) Leesbare kennisgewings om rook binne 3 voet van die projektor af of van die projektorkamer of -kabinet af, na gelang van die geval, te verbied, moet voorsien word vir vertoning aan die gehoor.

(2) Leesbare kennisgewings om rook te verbied moet vir vertoon in die projektorkamer of -kabinet, na gelang van die geval, die beropdraaikamer, as daar een is, en die filmopbergkamer verskaf word.

(*Regulasie* 59.)

VYFDE BYLAE.

OUTOMATIESE SPROEIER-, BRANDALARM- EN BRANDOPSPORINGSTELSEL.

1. TIPE EN VULLING VAN DIE STELSEL.

Die outomatiese sproeier-, brandalarm- en -opsporingstelsel moet van die nat tipe wees met bosproeiers wat altyd ten volle gevul moet wees.

2. DETAILS VAN DIE STELSEL.

Die stelsel moet aan onderstaande vereistes voldoen:—

(*a*) Druktenk:—

(i) 'n Druktenk van toereikende sterkte en konstruksie, met inagneming van die watervulling soos in hierdie subparagraaf gespesifiseer, moet verskaf word, met 'n inhoudsmaat van minstens twee maal die blywende vulling van vars water wat vir die outomatiese werking van die stelsel vereis word. 'n Blywende vulling van minstens 500 gellings vars water, onder 'n lugdruk van minstens 70 pond per vierkant duim, plus die waterdruk, gemeet vanaf die onderkant van die tenk tot aan die hoogste sproeier in die stelsel, moet gedurig in die druktenk gehou kan word.

(ii) Die druktenk moet van 'n doeltreffende ontlasklep en van 'n peilglas en 'n drukmeter voorsien wees. Afsluitkleppe of -krane moet by elkeen van die meetkoppelinge aangebring word.

(*b*) Lugkompressor:—

Die druktenk moet aangesluit word op 'n lugkompressor wat in die tenk die drukking, soos by subparagraaf (*a*) vereis, in stand kan hou.

(*c*) Pype:—

(i) Die pype wat deel uitmaak van die stelsel, moet van staal van voldoende sterkte gemaak wees, met inagneming van die drukking waaraan hulle onderhewig mag wees, en hulle moet behoorlik verbind en gestut wees.

(ii) Aansluitings moet verskaf word vir die toevoer van 'n aanvulling van die blywende vulling van vars water in die druktenk, sodat die pype, na die gebruik van soutwater in die stelsel, met vars water deurgespoel kan word.

(iii) Pype wat deur ys aangetas kan word, moet geïsoleer word om bevriesing van die water daarin te voorkom.

(*d*) Buite-aansluitings:—

Die sproeierstelsel moet 'n outonome eenheid wees, en geen buite-aanlsuitings mag daaraan aangebring word nie, behalwe onderstaande:—

(i) Slangkoppelinge met afsluit- en terugslagkleppe, wat naby die koppelinge moet wees, sodat dit aan 'n kustoevoer gekoppel kan word.

(ii) 'n Aansluiting op die hoofbrandweerpyp van die skip, met 'n neerskroefbare afsluitterugslagklep by die aansluiting om 'n terugloop vanaf die sproeierstelsel na die hoofbrandweerpyp te voorkom. Afsluitkleppe vir die kustoevoer en die aansluiting op die hoofbrandweerpyp van die skip moet duidelik en blywend gemerk wees om hulle doel aan te wys, en in 'n omslote posisie gesluit kan word.

the ship and to the projector as they apply in the case of a ship provided with a projector, not being a portable projector, intended for giving cinematograph exhibitions in a public room.

6. PORTABLE PROJECTORS.

(1) Portable projectors and the illuminant thereof shall be enclosed in casing constructed of incombustible material. There shall be no openings in such casing other than those necessary for the proper operation of the projector and for ventilation of the projector casing.

(2) Spool boxes for use with portable projectors shall be so designed that they cannot contain a reel exceeding 10 inches in diameter.

(3) The electric lamp provided as the illuminant for a portable projector shall be hermetically sealed in a glass bulb and shall not exceed 1,000 watts in power.

(4) Every portable projector shall be provided with a filter or other device which shall be permanently attached thereto and shall be capable of intercepting the heat in the light rays emitted by the illuminant so as to prevent the ignition of a stationary inflammable film if the film is exposed to the rays for a period of three minutes.

7. ILLUMINANT FOR PROJECTORS.

The illuminant provided for a projector shall be an electric lamp.

8. " NO SMOKING " NOTICES.

(1) Legible notices prohibiting smoking within 3 feet of the projector or of the projector room or cabinet, as the case may be, shall be provided for display to the audience.

(2) Legible notices prohibiting smoking shall be provided for display in the projector room or cabinet, as the case may be, the re-winding room, if any, and the film storage room.

(*Regulation* 59.)

FIFTH SCHEDULE.

AUTOMATIC SPRINKLER, FIRE ALARM AND FIRE DETECTION SYSTEM.

1. TYPE AND CHARGING OF SYSTEM.

The automatic sprinkler and fire alarm and detection system shall be of the wet type with overhead sprinklers, and shall at all times be fully charged.

2. DETAILS OF THE SYSTEM.

The system shall comply with the following requirements:—

(*a*) Pressure tank:—

(i) A pressure tank of adequate strength and construction having regard to the charge of water specified in this sub-paragraph shall be provided and shall have a capacity of not less than twice the standing charge of fresh water required for the automatic operation of the system. A standing charge of not less than 500 gallons of fresh water shall be capable of being maintained in the pressure tank under an air pressure of not less than 70 pounds per square inch plus the pressure due to a head of water measured from the bottom of the tank to the highest sprinkler in the system.

(ii) The pressure tank shall be fitted with an efficient relief valve and with a water gauge glass and a pressure gauge. Stop valves or cocks shall be provided at each of the gauge connections.

(*b*) Air Compressor:—

The pressure tank shall be connected to an air compressor capable of maintaining in the tank the pressure required by sub-paragraph (*a*).

(*c*) Pipes:—

(i) The pipes forming part of the system shall be made of steel of adequate strength having regard to the pressure to which they may be subjected, and shall be properly jointed and supported.

(ii) Connections shall be provided which will supply a replenishment of the standing fresh water charge in the pressure tank, and which will enable the pipes to be flushed with fresh water after the use of salt water in the system.

(iii) Any pipes which may be affected by frost shall be insulated so as to prevent the water therein from freezing.

(*d*) External Connections:—

The sprinkler system shall be a self-contained unit, and no external connections shall be fitted to it other than the following:—

(i) Hose couplings with shut-off valves, and non-return valves situated close to the couplings, for the purpose of coupling to a shore supply.

(ii) A connection with the ship's fire main, provided with a shut-off screw-down non-return valve at the connection which will prevent a back flow from the sprinkler system to the fire main. Shut-off valves for the shore supply and the ship's fire main connection shall be clearly and permanently marked to show their purpose, and shall be capable of being locked in the closed position.

(*e*) Pomp:—

(i) Vir die uitsluitende doel om water voortdurend outomaties uit die sproeierkrane te laat uitstort, moet daar 'n onafhanklike kragpomp verskaf word. Die pomp moet deur die drukvermindering in die stelsel, voordat die blywende vulling van vars water in die druktenk heeltemal leegloop, outomaties in werking gestel word.

(ii) Die pomp moet 'n direkte suiging in die see hê en van enige ander suiging onafhanklik wees. Vir proefdoeleindes moet daar naby die pomp aan die leweringskant 'n uitlaatklep van 2 duim in deursnee met 'n kort oop afvoerpyp aangebring word.

(iii) Die inrigtings moet so wees dat daar uit die pomp geen seewater in die druktenk kan kom nie.

(iv) Die pomp moet in staat wees om 'n drukking van 25 pond per vierkant duim op die vlak van die hoogste sproeier met die uitlaatklep van 2 duim in deursnee, wanneer dit heeltemal oop is, in stand te hou.

(*f*) Sproeierkrane:—

(i) Sproeierkrane moet in afsonderlike afdelings gegroepeer word, elkeen met hoogstens 150 sproeierkrane. 'n Sproeierkraan-afdeling mag hoogstens twee dekke bedien en mag nie in meer as een hoofvertikale sone of in meer as een waterdigte afdeling wees nie: Met dien verstande dat in enige skip 'n sproeierkraan-afdeling meer as twee dekke mag bedien of in meer as een hoofvertikale sone mag wees, mits die Minister (of Sekretaris in die geval van 'n skip wat nie bedoel is vir gebruik op internasionale reise nie) oortuig is dat die brandbeveiliging op die skip daardeur verbeter word.

(ii) Elke sproeierkraan-afdeling moet deur middel van een reëlklep beheer word, en geen ander kleppe mag vir die regulering van enige van die sproeiers in daardie afdeling aangebring word nie. Die reëlkleppe moet maklik bereikbaar wees; en hul plekke moet duidelik en blywend aangedui word. Middels moet aangebring word om te voorkom dat iemand wat nie deur die gesagvoerder van die skip daartoe gemagtig is nie, die reëlkleppe bedien.

(iii) 'n Drukmeter moet by elke reëlklep en by die sentrale stasie aangebring word om die druk van die water wat in die stelsel beskikbaar is, aan te dui.

(iv) Die sproeierkrane moet in staat wees om met soutwater te werk en moet by 'n temperatuur van minstens 155° F. (68° C.) in werking kom. Hulle moet by 'n temperatuur van hoogstens 200° F. (98° C.), behalwe in droogkamers en soortgelyke ruimtes, in werking kom.

(v) Elke sproeierkraan moet minstens 20 gellings water, onder 'n toevoerdruk van 25 pond per vierkant duim, per minuut kan uitstort.

(vi) Minstens ses reserwe sproeierkrane moet vir elke afdeling verskaf word. Hulle moet in kassies of houers vir die doel, naby die reëlklep vir die afdeling, gebêre word, en die kassies of houers moet duidelik en blywend gemerk word om hulle inhoud aan te dui.

(*g*) Spasiëring van sproeierkrane:—

Die sproeierkrane moet op afstande van hoogstens 13 voet uitmekaar en hoogstens 6 voet 6 duim van 'n beskot af aangebring word. Hulle moet so ver moontlik van balke af of ander voorwerpe wat moontlik die uitspuit van water kan belemmer, geplaas word, en in sulke posisies dat alle ontvlambare materiaal in die betrokke ruimte goed besproei word.

(*h*) Outomatiese alarm:—

Die sproeierstelsel moet middels insluit om, wanneer enige sproeier in werking kom, outomaties 'n sig- en hoorbare alarmsein te maak. Die alarmsein moet op een of meer punte in die skip, sodat dit snel onder die aandag van die gesagvoerder en bemanning kan kom, die teenwoordigheid en posisie van enige brand in die ruimtes wat die stelsel bedien, aantoon. As sodanige alarm deur elektrisiteit bedien word, moet dit so gemaak wees dat dit in werking kom as daar enige steuring in die elektriese stroombaan voorkom.

(*i*) Kragtoevoer:—

Minstens twee kragbronne moet voorsien word om die onafhanklike pomp, lugkompressor en outomatiese alarm te bedien.

(*j*) Voorsiening vir toets:—

(i) 'n Toetsklep moet voorsien word vir die toets van die outomatiese alarm vir elke sproeierafdeling deur 'n waterstorting gelykstaande aan die werking van een sproeierkraan. Die toetsklep vir elke afdeling moet naby die regulateurklep vir daardie afdeling aangebring word.

(ii) Middels moet voorsien word vir die toets van die outomatiese inskakeling van die pomp.

(iii) Skakelaars moet voorsien word by een van die punte in subparagraaf (*h*) vermeld, sodat die alarm en die aanwysers vir elke sproeierafdeling getoets kan word.

(*e*) Pump:—

(i) An independent power pump shall be provided solely for the purpose of continuing automatically the discharge of water from the sprinkler heads. The pump shall be brought into action automatically by the pressure drop in the system before the standing fresh water charge in the pressure tank is completely exhausted.

(ii) The pump shall have a suction direct from the sea which shall be independent of any other suction. The pump shall have fitted close to it on the delivery side a 2 inch diameter waste valve with a short open-ended discharge pipe for testing purposes.

(iii) The arrangements shall be such as will prevent the pump from passing sea water into the pressure tank.

(iv) The pump shall be capable of maintaining a pressure of 25 pounds per square inch at the level of the highest sprinkler with the 2 inch diameter waste valve fully open.

(*f*) Sprinkler Heads:—

(i) Sprinkler heads shall be grouped into separate sections, each of which contains not more than 150 sprinkler heads. A section of sprinkler heads shall not serve more than two decks, and shall not be in more than one main vertical zone or in more than one watertight compartment. Provided that, in any ship, a section of sprinkler heads may serve more than two decks or be in more than one main vertical zone if the Minister (or Secretary in the case of a ship which is not intended to be engaged in international voyages), is satisfied that the protection of the ship against fire is thereby improved.

(ii) Each section of sprinkler heads shall be controlled by one control valve, and no other valves shall be provided for controlling any of the sprinklers in that section. The control valves shall be readily accessible, and their locations shall be clearly and permanently indicated. Means shall be provided to prevent the operation of the control valves by any person not authorised to do so by the master of the ship.

(iii) A pressure gauge shall be provided at each control valve and at a central station to indicate the pressure of water available throughout the system.

(iv) The sprinkler heads shall be capable of operating with salt water and shall come into operation at a temperature of not less than 155° F. (68° C.). They shall come into operation at a temperature of not more than 200° F. (93° C.), except in drying rooms and similar spaces.

(v) Each sprinkler head shall be capable of discharging water at a rate of not less than 20 gallons of water per minute under a supply pressure of 25 pounds per square inch.

(vi) A least six spare sprinkler heads shall be provided for each section. They shall be stowed in boxes or holders provided for that purpose near the control valve for the section, and the boxes or holders shall be clearly and permanently marked to show their contents.

(*g*) Spacing of Sprinkler Heads:—

Sprinkler heads shall be spaced not more than 13 feet apart and not more than 6 feet 6 inches from a bulkhead. They shall be placed as clear as may be of beams or other objects likely to obstruct the projection of water and in such positions that all combustible material in the space concerned will be well sprayed.

(*h*) Automatic Alarm:—

The sprinkler system shall include means for giving a visible and audible alarm signal automatically whenever any sprinkler comes into operation. The alarm signal shall indicate at one or more points in the ship, so as to come rapidly to the attention of the master and crew of the ship, the presence and position of any fire in the spaces served by the system. If such alarm is operated by electricity it shall be constructed so as to operate if any derangement occurs in the electrical circuit.

(*i*) Power Supply:—

There shall be provided not less than two sources of power to operate the independent pump, air compressor and automatic alarm.

(*j*) Provisions for Testing:—

(i) A test valve shall be provided for testing the automatic alarm for each section of sprinklers by a discharge of water equivalent to the operation of one sprinkler head. The test valve for each section shall be situated near the control valve for that section.

(ii) Means shall be provided for testing the automatic cutting in of the pump.

(iii) Switches shall be provided at one of the points referred to in sub-paragraph (*h*) which will enable the alarm and the indicators for each section of sprinklers to be tested.

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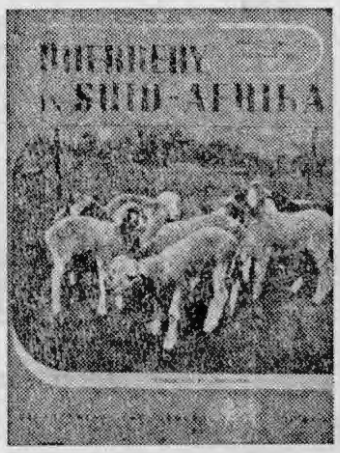

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