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[No. 1955.]

GOEWERMENSKENNISGEWING.**DEPARTEMENT VAN VERVOER.**

No. R.79.]

[19 Januarie 1968.

**DIE REGULASIES IN VERBAND MET KON-
STRUKSIE, 1968.**

Die Minister van Vervoer het, kragtens die bepalings van artikel 356 van die Handelskeepvaartwet, 1951 (Wet No. 57 van 1951), soos gewysig, die Regulasies in verband met Konstruksie, 1960, soos afgekondig by Goewermentskennisgewing No. R.293 van 4 Maart 1960, herroep en kragtens genoemde artikel die regulasies in bygaande Bylae vervat, uitgevaardig met ingang, in beide gevalle, vanaf 13 Maart 1968.

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GOVERNMENT NOTICE.**DEPARTMENT OF TRANSPORT.**

No. R.79.]

[19th January, 1968.

THE CONSTRUCTION REGULATIONS, 1968.

The Minister of Transport has, under the provisions of section 356 of the Merchant Shipping Act, 1951 (Act No. 57 of 1951), as amended, repealed the Construction Regulations, 1960, promulgated by *Government Notice* No. R.293 dated 4th March, 1960, and has in terms of the said section made the regulations contained in the Schedule hereto with effect in each case from 13th March, 1968.

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INLEIDENDE BEPALINGS.

1. TITEL VAN HIERDIE REGULASIES.

Hierdie regulasies staan bekend as die Regulasies in verband met Konstruksie, 1968.

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PRELIMINARY.

1. TITLE OF THESE REGULATIONS.

These regulations are called the Construction Regulations, 1968.

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 51 soos uitgedruk om op afdelings van die „A”-klas van toepassing te wees;

sluit—

„akkommodasieruimte” 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—

„Owerheid” die Minister met betrekking tot ’n skip van Klas I of II en die Sekretaris met betrekking tot ’n skip van Klass IIA, V of VI;

„hulptrap” vir die doeleindes van regulasie 58 (2) ’n trap van staal of ander geskikte materiaal wat nie ingevolge regulasie 90 vereis word om deel van ’n nooduitgang te vorm nie en wat slegs twee dekke bedien;

„afdeling van die „B”-klas” ’n beskot wat voldoen aan sodanige van die vereistes van regulasie 51 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;

„vragruimte” in Hoofstuk V ’n ruimte toegewys 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 ook al mag wees;

sluit—

„beheerpos” in—

- (a) ’n radiotelegraafkantoor;
- (b) enige ander ingeslote ruimte wat die volgende bevat—
 - (i) ’n kompas, ’n rigtingsoeker, radaruitrusting, ’n stuurwiel, of ander soortgelyke uitrusting wat vir navigasie gebruik word;
 - (ii) ’n sentrale aanwyser verbind met ’n stelsel vir die opspoor van brand of rook; of
 - (iii) ’n noodgenerator;

beteken—

„bemanningsruimte” woonruim vir die bemanning;

„kriteriumsyfer” met betrekking tot enige skip, die kriteriumgetal van die skip bereken ooreenkomstig sodanige bepalinge van Aanhangsel 2 as wat op daardie skip van toepassing is;

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 51 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;

“Authority” means the Minister in respect of a ship of Class I or II and the Secretary in respect of a ship of Class IIA, V or VI;

“auxiliary stairway” for the purpose of regulation 58 (2) means a stairway of steel or other suitable material, which is not required by regulation 90 to form part of a means of escape and which serves only two decks;

“‘B’ Class division” means a bulkhead complying with such of the requirements of regulation 51 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 Annex 2 as apply to that ship.

„diepgang” die vertikale afstand vanaf die grondlyn midskeeps tot by ’n indelingslaswaterlyn;
 „ekwivalente materiaal” waar die woorde in die uitdrukking „staal of ander ekwivalente materiaal” gebruik word, enige materiaal wat op sigself of as gevolg van isolering wat aangebring is, na afloop van ’n toepaslike brandtoets strukturele en ongeskondeheidseienskappe het wat gelykstaan met staal;

„indelingsfaktor” met betrekking tot enige skip of gedeelte daarvan, die indelingsfaktor bereken ooreenkomstig sodanige bepalings van Aanhangsel 2 as wat van toepassing is op daardie skip of gedeelte, wat ook al die geval is;

„vulbare lengte” met betrekking tot enige gedeelte van ’n skip by enige diepgang, die maksimum gedeelte van die skeeps lengte wat ’n gegewe punt in die skip as middelpunt het, wat by daardie diepgang en ander sodanige van die veronderstellings van deurdringbaarheid vervat in Aanhangsel 2 soos van toepassing in die omstandighede, gevul kan word sonder dat enige deel van die skip se indompelingsgrenslyn insink wanneer die skip glad nie oorhel nie;

„onbrandbare materiaal” materiaal wat nie brand nie as dit verhit word tot ’n temperatuur van 1382° F. (750° C.) en nie ontlambare dampe in genoegsame hoeveelheid afgee om te ontvlam wanneer dit met ’n aansteekvlam in aanraking gebring word en ook nie die temperatuur van die toetsoond 90° F. (50° C) of meer bo 1382° F (750° C.) verhoog wanneer dit ooreenkomstig die Britse Standaardspesifikasie 476: Deel I: 1953, getoets 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;

„masjinerieruimte” in elke Hoofstuk behalwe Hoofstuk V, V(A) en V(B), 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 die hoof- en hulpaandryfmasjinerie, ketels wat in die behoeftes van aandrywing voorsien, en alle permanente koolbunkers, as daar is, bevat;

„masjinerieruimte” in Hoofstuk V, V(A) en V(B) ’n ruimte wat gebruik word vir aandryf-, hulp- of verkoelingsmasjinerie, ketels, pompe, ingenieurswerkwinkels, generators, ventilerings- en lugversorgingsmasjinerie, olievlposte en soortgelyke ruimtes en kokers na sulke ruimtes;

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

„vertikale hoofsones” die vertikale hoofsones waarin die romp, bobou en dekhuse van ’n skip onderverdeel word ooreenkomstig regulasie 50 (1);

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

„maksimum diensspoed” die hoogste spoed wat die skip ontwerp is om op see op sy diepste seevarende diepgang te handhaaf;

„myl” ’n seemyl van 6,080 voet;

„bestuurbare spoed” die minimum spoed waarteen die skip doeltreffend vorentoe gestuur kan word;

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

„equivalent material” where the words are used in the expression “steel or other equivalent material” means any material which, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of an appropriate fire test;

„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 Annex 2 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 Annex 2 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;

„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 nor raises the temperature of the test furnace 90° F. (50° C.) or more above 1382° F. (750° C.) when tested in accordance with British Standard Specification 476: Part I: 1953, 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, V (A) and V (B), means any space extending from the moulded baseline of the ship to the margin line and between the extreme transverse watertight bulkheads bounding the spaces containing the main and auxiliary propelling machinery, boilers serving the needs of propulsion, when installed, and the permanent coal bunkers, if any;

„machinery space” in Chapters V, V (A) and V (B) means any space used for propelling, auxiliary or refrigerating machinery, boilers, pumps, engineers workshops, generators, ventilation or air conditioning machinery, oil filling stations and similar space and trunkways to such spaces;

„main circulating pump” means the pump installed for circulating water through the main condenser;

„main vertical zones” means the main vertical zone into which the hull, superstructure and deckhouse of a ship are divided in accordance with regulation 50 (1);

„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;

„maximum service speed” means the greatest speed which the ship is designed to maintain at sea at the deepest seagoing draught;

„mile” means a nautical mile of 6,080 feet;

„navigable speed” means the minimum speed at which the ship can be effectively steered in the ahead direction;

„oliebrandstofeenheid” die uitrusting wat gebruik word vir die bereiding van oliebrandstof vir lewering aan die oliebranders van ’n oliegestookte ketel en dit sluit die oliedrukpompe, -filters en -verwarmers in;

„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 toegewys is, deur water ingeneem kan word;

„toelaatbare lengte” van ’n afdeling met sy middelpunt by enige punt in die lengte van die skip, die produk van die vulbare lengte by daardie punt en die indelingsfaktor van die skip;

sluit—

„openbare kamers” sale, eetkamers, kroë, rookkamers, sitkamers, ontspanningskamers, kinderkamers en biblioteke in;

het—

„radiotelegraafkamer” die betekenis wat in die Handelskeepvaartradioregulasies, 1968, daaraan toegewys is;

sluit—

„diensruimte” kombuise, hoofaanregkamers, wasserye, voorraadkamers, verfkamers, bagasiekamers, poskamers, staafgoud- en -silwerkamers, skrynwerkers en loodgieterswerkswinkels en kokers na sulke ruimtes in;

beteken—

„besinktenk” ’n olieopgaartenk met ’n verwarmingsvlak van minstens 2 vierkante voet per ton olie-inhoudsmaat;

„standaardvuurproef” ’n toets waarin monsters van die betrokke beskotte of dekke, met ’n oppervlakte van minstens 50 vierkante voet en ’n hoogte van 8 voet wat so na moontlik ooreenkom met die beoogde konstruksie en wat, waar toepaslik, minstens een naat insluit, in ’n toetsoond blootgestel word aan ’n reeks tydtemperatuurverhoudings ongeveer soos volg:—

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

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

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

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

„stuurinrigtingkrageneheid”—

(a) in die geval van ’n elektriese stuurinrigting, die elektriese motor en die elektriese uitrusting daaraan verbonde; of

(b) in die geval van ’n elektro-hidrouliese stuurinrigting, die elektriese motor en die elektriese uitrusting daaraan verbonde en die pomp wat daarmee verbind is;

(c) in die geval van ’n stoom-hidrouliese of pneumaties-hidrouliese stuurinrigting, die dryfenjin en die pomp wat daarmee verbind is;

„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 op die betrokke tydstop aan passasiers toegeken is;

„oil fuel unit” means the equipment used for the preparation of oil fuel for delivery to the oil burners of an oil-fired boiler and includes the oil pressure pumps, filters and heaters;

„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;

„permissible length” of a compartment having its centre at any point in the length of the ship, means the product of the floodable length at that point and the factor of subdivision of the ship;

„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, 1968;

„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;

„settling tank” means an oil storage tank having a heating surface of not less than 2 square feet per ton of oil capacity;

„standard fire test” means a test in which specimens of the relevant bulkheads or decks, having a surface area of not less than 50 square feet and a height of 8 feet, resembling as closely as possible the intended construction and including where appropriate at least one joint, are exposed in a test furnace to a series of time temperature relationships, approximately 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.)

„steering gear power unit” means:—

(a) in the case of electric steering gear, the electric motor and its associated electrical equipment; or

(b) in the case of electro-hydraulic steering gear, the electric motor, its associated electrical equipment and connected pump; or

(c) in the case of steam-hydraulic or pneumatic-hydraulic steering gear, the driving engine and connected pump;

„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;

„geskik”, met betrekking tot materiaal, deur die Sekretaris goedgekeur as geskik vir die doel waarvoor dit gebruik word;

„oppervlakspreiding van vlam” vir die doeleindes van Hoofstuk V die oppervlakspreiding van vlam as Klas 1 of Klas 2 geklassifiseer binne die betekenis van Afdeling 2 van die Britse Standaardspesifikasie 476: Deel I: 1953;

„ton” bruto ton;

„waterdig”, met betrekking tot ’n bouwerk, sy vermoë om die deurlaat van water deur die bouwerk in enige rigting onder ’n waterdrukhoogte tot by die skip se indompelingsgrenslyn te verhoed;

„weerdig”, met betrekking tot ’n bouwerk, sy vermoë om die deurlaat van seewater deur die bouwerk in gewone seetoestande te verhoed.

3. TOEPASSING VAN DEEL I.

Hierdie Deel is van toepassing op elke passasierskip wat in die Republiek geregistreer of gelisensieer is, of wat kragtens die Wet vereis word om aldus geregistreer of gelisensieer te wees, en op elke passasierskip wat in enige land behalwe die Republiek geregistreer is.

4. KLASSIFIKASIE VAN SKEPE.

(1) Die skepe waarop hierdie Deel van toepassing is, word in die volgende klasse ingedeel:—

Klas I—’n Skip wat gebruik word op reise enige waarvan internasionale reise is, uitgesonderd kort internasionale reise.

Klas II—’n Skip, uitgesonderd ’n skip van Klas I, wat gebruik word op reise enige waarvan kort internasionale reise is.

Klas IIA—’n Skip van 70 voet of langer, uitgesonderd ’n skip van Klas V of VI, wat gebruik word op reise van enige aard behalwe internasionale reise.

Klas III—Nog nie toegewys nie.

Klas IV—Nog nie toegewys nie.

Klas V—’n Skip van 50 voet of langer, wat slegs gebruik word op reise ter see in gunstige weer met hoogstens 40 persone aan boord, en wat gedurende sodanige reise op geen tydstip meer as 40 myl van sy afreispunt af of meer as 15 myl van die land is nie.

Klas VI—’n Skip wat in ’n hawe diens verrig of gebruik word op reise ter see in gunstige weer met hoogstens 250 persone aan boord, en wat gedurende sodanige reise op geen tydstip meer as 15 myl van sy afreispunt af of meer as 5 myl van die land is nie.

(2) Vir die doeleindes van paragraaf (1), sluit „reis” ’n ekskursie in.

5. BOUSTERKTE.

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

6. VOORLEGGING VAN PLANNE.

Alvorens daar begin word met die bou van enige skip, of op ’n vroeë stadium daarna, moet die bouer of eienaar daarvan die planne en besonderhede in Aanhangsel 1 uiteengesit, in duplo aan die Owerheid voorlê.

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

„suitable” in relation to material means approved by the Secretary as suitable for the purpose for which it is used;

„surface spread of flame” for the purpose of Chapter V, means the surface spread of flame classified as Class 1 or Class 2 within the meaning of Section 2 of British Standard Specification 476: Part I: 1953;

„tons” means gross tons;

„watertight” in relation to a structure, means its capability 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 its capability of preventing the passage of sea water through the structure in ordinary sea conditions.

3. APPLICATION OF PART I.

This Part applies to every passenger ship registered or licensed in the Republic or which is, in terms of the Act, required to be so registered or licensed, and to every passenger ship which is registered in a country other than the Republic.

4. CLASSIFICATION OF SHIPS.

(1) The ships to which this Part applies are divided into the following classes:—

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

Class II—A ship, other than a ship of Class I, engaged on voyages any of which are short international voyages.

Class IIA—A ship of 70 feet in length or over, other than a ship of Class V or VI, engaged on voyages of any kind other than international voyages.

Class III—Not yet allocated.

Class IV—Not yet allocated.

Class V—A ship of 50 feet in length or over engaged only on voyages to sea in fine weather with not more than 40 persons on board, in the course of which voyages the ship is at no time more than 40 miles from the point of departure nor more than 15 miles from land.

Class VI—A ship which operates at a port or is engaged on voyages to sea in fine weather with not more than 250 persons on board, in the course of which voyages the ship is at no time more than 15 miles from the point of departure nor more than 5 miles from land.

(2) For the purposes of paragraph (1), „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.

6. SUBMISSION OF PLANS.

Before the construction of any ship is commenced, or at an early stage thereafter, the builder or owner thereof shall submit in duplicate to the Authority the plans and particulars set forth in Annex 1.

HOOFSTUK II—WATERDIGTE INDELING.

7. TOEPASSING VAN HOOFSTUK II.

Tensy daar in hierdie Hoofstuk anders aangedui word, is hierdie Hoofstuk van toepassing op elke skip van Klas I, II, IIA, V of VI behalwe 'n oop of gedeeltelik oordekte skip van Klas V of 'n skip van Klas VI wat minder as 151 passasiers vervoer, en 'n „Hoofstuk II-skip” beteken 'n skip waarop hierdie Hoofstuk van toepassing is.

8. 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 Aanhangsel 2 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.

9. PIEK- EN MASJINERIERUIMTEBESKOTTE, 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 5 persent van die lengte van die skip en hoogstens 10 voet plus 5 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 weerdig deurloop tot die dek bo die beskotdek. Die verlenging hoef nie direk bo die beskot daaronder aangebring te word nie, mits dit minstens 5 persent van die lengte van die skip van die voorloodyn verwyder is, en die deel van die beskotdek wat die trapsgewyse verspringing vorm, doeltreffend weerdig is. Die beplating en verstywers van so 'n verlenging moet ooreenkomstig die bepalings van Aanhangsel 4 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, ketels 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 verminder word nie.

(3) Die skroefaswerkbuis van elke Hoofstuk II-skip moet geplaas wees in 'n waterdigte astonnell 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 ingesluit wees in 'n waterdigteruimte waarvan die volume die kleinste moet wees wat met die behoorlike ontwerp van die skip verenigbaar is.

10. DUBBELE BOME.

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

(a) In 'n skip van 165 voet of langer maar korter as 200 voet, vanaf die masjinerieruimte tot by die aanvaringsbeskot, of so naby doenlik aan daardie beskot;

CHAPTER II—WATERTIGHT SUBDIVISION.

7. APPLICATION OF CHAPTER II.

Unless otherwise indicated in this Chapter, this Chapter applies to every ship of Class I, II, IIA, V or VI except an open or partially decked ship of Class V or a ship of Class VI carrying fewer than 151 passengers, and a “Chapter I ship” means a ship to which this Chapter applies.

8. WATERTIGHT SUBDIVISION.

Every Chapter II ship shall 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 Annex 2 as apply to the 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.

9. 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 not be required to be fitted directly over the bulkhead below, provided that 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 effectively weathertight. The plating and stiffeners of such extension shall be constructed in accordance with the provisions of Annex 4 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.

10. DOUBLE BOTTOMS.

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

(a) in a ship of 165 feet or over but less than 200 feet in length, from the machinery space to the collision bulkhead or as near to that bulkhead as is practicable;

- (b) in 'n skip van 200 voet of langer maar korter as 249 voet, vanaf die aanvaringsbeskot tot by die agterpiekbeskot, of so naby doenlik aan daardie beskotte, maar nie noodwendig in die masjinerie-ruimte nie;
 - (c) in 'n skip van 249 voet of langer, vanaf die aanvaringsbeskot tot by die agterpiekbeskot, of so na doenlik aan daardie beskotte.
- (2) Waar hierdie regulasie vereis dat 'n dubbele boom in 'n skip aangebring moet word, moet sy grootspantdiepte by die middellyn in duime gemeet, minstens 16 duim plus een-twintigste van die lengte van die skip in voete wees en moet die binneboom tot by die skeepsboorde reik op so 'n wyse dat dit die boom tot by die kimroning beskerm. Die binneboom word vir hierdie doel as voldoende beskou indien die snylyn van die buitenste rand van die kantplaat en die kimplaat nêrens laer is nie as 'n horisontale vlak wat loop deur die snypunt tussen die spantlyn op die grootspant en 'n dwars-skeepse diagonaal wat onder 'n hoek van 25 grade met die basislyn getrek is en dit sny op 'n punt wat op 'n afstand gelyk aan die helfte van die grootspantbreedte van die middellyn geleë is.
- (3) Putte wat vir dreineerdoeleindes in die dubbele boom aangebring is, moet nie groter of dieper wees as wat vir sodanige doel nodig is nie. Die put mag in geen geval dieper wees as die dubbele boom se diepte by die middellyn min 18 duim nie, en die put mag ook nie laer wees as die horisontale vlak waarvan in subregulasie (2) melding gemaak word nie, met die voorbehoud dat 'n put wat tot by die buiteboom loop aan die agterent van 'n astonnel gebou kan word.
- (4) Putte vir ander doeleindes as dreinerings mag nie in die dubbele boom gebou word nie.
- (5) Niks in hierdie regulasie vereis dat 'n dubbele boom aangebring moet word op die plek waar daar waterdigte afdelings van middelmatige grootte is wat uitsluitlik vir die vervoer van vloeistowwe gebruik word nie, mits die veiligheid van die skip in die geval van boom- of kantbeskadiging nie weens die afwesigheid van 'n dubbele boom in daardie plek verminder word nie.

11. STABILITEIT IN BESKADIGDE TOESTAND.

- (1) (a) Elke Hoofstuk II-skip moet so gebou wees dat die stabiliteit in die onbeskadigde toestand in alle diensomstandighede voldoende sal wees om die skip bestand te maak teen die finale oorstroming van enige van die hoofafdelings waarin die skip ooreenkomstig die bepalinge van regulasie 8 ingedeel is. Indien twee aangrensende hoofafdelings geskei word deur 'n beskot met 'n trapsgewyse verspringing ingevolge die voorwaardes van paragraaf 6 (3) (a) van Aanhangsel 2, moet die stabiliteit in die onbeskadigde toestand voldoende wees om die finale oorstroming van daardie twee aangrensende hoofafdelings te kan weerstaan.
- (b) Wanneer die indelingsfaktor wat ingevolge paragraaf 4 of paragraaf 9 van Aanhangsel 2 vereis word, in 'n Hoofstuk II-skip .50 of kleiner maar groter as .33 is, moet die stabiliteit in die onbeskadigde toestand voldoende wees om die finale oorstroming van enige twee aangrensende hoofafdelings te kan weerstaan.
- (c) Wanneer die indelingsfaktor wat ingevolge paragraaf 4 van Aanhangsel 2 vereis word, in 'n Hoofstuk II-skip .33 of kleiner is, moet die stabiliteit in die onbeskadigde toestand voldoende wees om die finale oorstroming van enige drie aangrensende hoofafdelings te weerstaan.
- (2) Vir die toepassing van hierdie regulasie moet daar ooreenkomstig die bepalinge van Aanhangsel 3 bepaal word of die stabiliteit in die onbeskadigde toestand van elke Hoofstuk II-skip voldoende is.

- (b) in a ship of 200 feet or over but less than 249 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 a ship of 249 feet or 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, its moulded depth in inches measured at the centre line shall be not less than 16 inches plus one-twentieth of the length of the ship in feet and 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 centre line.
- (3) Wells constructed in the double bottom for the purpose of drainage shall not be larger nor extend downwards more than is necessary for such purpose. The depth of the well shall in no case be more than the depth of the double bottom at the centre line, less 18 inches, nor shall the well extend below the horizontal plane referred to in sub-regulation (2), 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.
- (5) Nothing in this regulation shall require a double bottom to be fitted in way of watertight compartments of moderate size 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.

11. STABILITY IN DAMAGED CONDITION.

- (1) (a) 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 8. If two of the main compartments, being adjacent to each other, are separated by a bulkhead which is stepped under the conditions of paragraph 6 (3) (a) of Annex 2, the intact stability shall be adequate to withstand the final flooding of those two adjacent main compartments.
- (b) Where in any Chapter II ship the factor of subdivision required under paragraph 4 or paragraph 9 of Annex 2 is .50 or less but more than .33, intact stability shall be adequate to withstand the final flooding of any two adjacent main compartments.
- (c) Where in any Chapter II ship the factor of subdivision required under paragraph 4 of Annex 2 is .33 or less, the intact stability shall be adequate to withstand the final flooding of any three adjacent main compartments.
- (2) For the purposes of this regulation, the sufficiency of the intact stability of every Chapter II ship shall be determined in accordance with the provisions of Annex 3.

(3) (a) Elke Hoofstuk II-skip moet so gebou wees dat dit onsimmetriese oorstrooming wanneer die skip in 'n beskadigde toestand is, beperk tot 'n minimum wat bestaanbaar is met doeltreffende inrigting. Indien dwarsskeepse oorstromingsinrigtings in so 'n skip aangebring is, moet die inrigtings, waar doenlik, selfwerkend wees, maar in enige geval waar dwarsskeepse oorstromingsinrigtings van bedieningsmiddels voorsien is, moet hulle bedien kan word vanaf 'n toeganklike plek bokant die beskotdek. Sulke inrigtings tesame met hul bedieningsmiddels en die maksimum helling voordat die ewewig herstel is, moet sodanig wees dat hulle nie die skip se veiligheid in gevaar stel nie. Die dwarsskeepse oorstromingsinrigtings moet in staat wees om die helling binne 15 minute voldoende te verminder om aan die vereistes van paragraaf 3 (b) en (c) van Aanhangsel 3 te voldoen.

(b) Indien die indompelingsgrenslyn onder water mag raak gedurende die oorstrooming wat veronderstel is vir die berekening waarna in Aanhangsel 3 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 oorstrooming sulks sal wees dat dit die veiligheid van die skip in gevaar stel nie; en
- (ii) dat die indompelingsgrenslyn nie gedurende die finale stadium van oorstrooming 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 oorstromingsinrigtings wat in die skip aangebring is, verstrek word.

(b) In elke skip van Klas I, II of IIA moet 'n dokument vir die gebruik van die gesagvoerder van die skip verskaf word wat die volgende bykomende inligting verstrek:—

- (i) Die nodige inligting vir die handhawing van voldoende stabiliteit in die onbeskadigde toestand onder dientoestande ten einde te verseker dat die skip skade tot die omvang waarna in Aanhangsel 3 verwys word, kan weerstaan; en
- (ii) inligting betreffende die stabiliteitsvoorwaardes waarop die berekenings van die helling gebaseer is, tesame met 'n waarskuwing dat daar 'n oormatige helling mag intree indien die skip beskadig sou word wanneer dit in 'n minder gunstige toestand is.

12. INLAAI VAN BALLAS.

In elke Hoofstuk II-skip, wanneer water vir ballasdoelendes ingelaai word, moet die waterballas in die algemeen nie vervoer word in tenks wat vir oliebrandstof bedoel is nie. In skeepse waar dit prakties onuitvoerbaar is om te voorkom dat water in oliebrandstoffen gehou word, moet uitrusting vir die afskeiding van olierige water tot tevredenheid van die Owerheid aangebring word, of alternatiewe middels wat vir die Owerheid aanneemlik is, verskaf word om van die olierige waterballas ontslae te raak.

13. 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 Aanhangsel 4 as wat daarop van toepassing is, gebou word.

(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 provided in any such ship the fittings shall, where practicable, be self-acting, but in any case where controls to cross-flooding fittings are provided, they shall be capable of being operated from an accessible position above the bulkhead deck. Such fittings together with their controls as well as the maximum heel before equalization, shall be such as will not endanger the safety of the ship. The cross-flooding fittings shall be capable of reducing the heel within 15 minutes, sufficiently to meet the requirements of paragraph 3 (b) and (c) of Annex 3.

(b) If the margin line may become submerged during the flooding assumed for the purposes of the calculation referred to in Annex 3, 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 Class I, II or 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 Annex 3; and
- (ii) information as to the conditions of stability on which the calculations of heel have been based, together with a warning that excessive heeling might result should the ship sustain damage when in a less favourable condition.

12. BALLASTING.

In every Chapter II ship, when ballasting with water is necessary, the water ballast shall not in general be carried in tanks intended for oil fuel. In a ship in which it is not practicable to avoid putting water in oil fuel tanks, oily-water separator equipment to the satisfaction of the Authority shall be fitted, or an alternative means acceptable to the Authority shall be provided for disposing of the oily-water ballast.

13. 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 Annex 4 as apply to it.

(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 bome, piektenks, besinktenks en bunkers, toereikend wees vir daardie doel.

14. OPENINGS IN WATERDIGTE BESKOTTE, ENS.

(1) In elke skip van Klas I, II of 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-, geforseerde trek- of verkoelingstelsels aangebring word, sover doenlik, nie deur sulke beskotte of bouwerke loop nie;
- (c) moet elke tunnel bokant die dubbele boom, as daar een is, hetsy vir toegang vanaf die bemanningsruimte na die masjineriëruimte, vir pypleiding of vir enige ander doel, wat deur so 'n beskot loop, waterdig wees. Die toegang tot minstens een ent van sodanige tunnel 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 tunnel moet deur 'n waterdigte deur wees. Geen tunnel mag deur die eerste indelingsbeskot agter die aanvaringsbeskot loop nie;
- (d) mag daar binne ruimtes bevattende die hoof- en hulpaandryfmasjinerie, insluitende ketels wat in die behoeftes van aandrywing voorsien en alle permanente bunkers, afgesien van deure na bunkers en astonnels, nie meer as een deur in elke hoofdwarsbeskot aangebring word nie. Wanneer twee of meer skroefasse aangebring word, moet die tunnels met 'n interkommunikasiegang verbind word. Daar mag slegs een deur tussen die masjineriëruimte en die tunnelruimtes wees waar twee skroefasse aangebring word en slegs twee deure waar daar meer as twee skroefasse is. Alle sodanige deure moet só geleë wees dat die drempels so hoog moontlik is;
- (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 vragruimte van 'n ander vragruimte of van 'n permanente of reserwebunker skei, aangebring word nie: Met dien verstande dat die Owerheid mag toelaat dat ingange in beskotte wat twee tussendekse vragruimtes skei, in enige skip aangebring mag word indien hy tevrede is dat—
 - (i) die ingange noodsaaklik is vir die behoorlike gebruik 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 praktiese 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 boonste indelingslaswaterlyn.

(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.

14. OPENINGS IN WATERTIGHT BULKHEADS, ETC.

(1) In every ship of Class I, II or 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 purpose, 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) within spaces containing the main and auxiliary propelling machinery including boilers serving the needs of propulsion and all permanent bunkers, not more than one doorway, apart from the doorways to bunkers and shaft tunnels, may be fitted in each main transverse bulkhead. Where two or more shafts are fitted, the tunnels shall be connected by an inter-communicating passage. There shall be only one doorway between the machinery space and the tunnel spaces where one or two shafts are fitted and only two doorways where there are more than two shafts. All such doorways shall be located so as to have their sills as high as practicable;
- (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 Authority 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 doorway are situated at a distance as far as practicable from the ship's shell plating and in no case less than one-fifth of the breadth of the ship such distance being measured at right angle to the centre line of the ship at the level of the deepest subdivision load water line.

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

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

(ii) indien pype, spuigate, elektriese kables of ander soortgelyke toerusting deur enige sodanige beskot loop, moet voorsiening gemaak word om te verseker dat die waterdigtheid van die beskot nie daardeur benadeel word nie;

(iii) moet lood of ander materiaal wat gevoelig is vir hitte, nie gebruik word nie in stelsels wat deur waterdigte indelingsbeskotte loop waar verswakking van sodanige stelsels in die geval van brand die waterdigte integriteit van die beskotte sal benadeel.

(b) moet daar hoogstens een pyp deur die aanvaringsbeskot van die skip onder die indompelingsgrenslyn loop: Met die voorbehoud dat daar, indien die voorpiek van die skip verdeel is om twee verskillende vloei-stowwe te hou, hoogstens twee pype deur die aanvaringsbeskot onder die indompelingsgrenslyn mag loop. Enige pyp wat deur die aanvaringsbeskot van die skip loop, moet toegerus wees met 'n skroefklep wat bo die beskotdek vandaan bedien kan word en die klepkas moet in die voorpiek teen die aanvaringsbeskot bevestig wees.

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

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

(2) Elke deur wat aangebring word in enige opening naarna in subregulasie (1) verwys word, moet 'n waterdigte skuifdeur wees: Met die voorbehoud dat waterdigte karnierdeure in 'n skip van Klas I, of in enige skip van Klas II of IIA wat nie ooreenkomstig Deel III van Aanhangsel 2 ingedeel hoef te word nie, in die volgende posisies aangebring mag word—

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

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

(3) Waterdigte skuifdeure kan vir horisontale of vertikale beweging ingerig word en kan die tipe wees wat—

(a) net met die hand geskuif kan word; of

(b) kragaandrywing het, indien hierdie Deel dit vereis, en ook met die hand geskuif kan word.

(4) Waterdigte skarnierdeure wat ooreenkomstig subregulasie (2) (a) aangebring is, moet toegerus wees met nippe of dergelyke snelwerkende sluitmiddels wat weersant die beskot waarin die deur aangebring is, vandaan bedien kan word.

(2) In every ship of Class I, II or IIA, bulkheads outside the spaces containing machinery 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 V or VI, bulkheads required by this Part to be watertight, shall not be pierced by doorways, ventilation trunks, 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;

(iii) lead or other heat sensitive materials, shall not be used in systems which penetrate watertight subdivision bulkheads, where deterioration of such systems in the event of fire would impair the watertight integrity of the bulkheads;

(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.

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

(1) In every ship of Class I, II or 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 subregulation (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 to be subdivided in accordance with Part III of Annex 2, hinged watertight doors may be fitted in the following positions—

(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 any bulkhead, not being a collision bulkhead, which divides two cargo between deck spaces.

(3) Sliding watertight doors may have horizontal or vertical motion and shall be either—

(a) hand operated only; or

(b) power operated, when so required by this Part, as well as hand operated.

(4) Hinged watertight doors fitted in accordance with subregulation (2) (a) shall be fitted with catches, or similar quick action closing devices, capable of being worked from each side of the bulkhead in which the door is fitted.

(5) Wanneer waterdigte skuifdeure aangebring word in die posisie waarna in subregulasie (2) (b) verwys word, mag sulke deure nie met afstandbeheerinrigtings toegerus wees nie, en elke waterdigte deur wat in sodanige posisie aangebring is en toeganklik is terwyl die skip op see is, moet toegerus wees met 'n doeltreffende sluitinrigting.

(6) Elke deur wat volgens die vereistes van hierdie Deel waterdig moet wees, moet anders as slegs deur boutte bevestig kan word en moet anders as deur swaartekrag toegemaak kan word.

(7) In elke skip van Klas I, II of IIA moet waterdigte deure wat in beskotte tussen permanente en reserwe bunkers aangebring is, met die uitsondering van die deure waarna in regulasie 16 (4) verwys word, altyd toeganklik wees.

16. MIDDELS OM WATERDIGTE SKUIFDEURE BEWEEG.

(1) Wanneer in enige skip van Klas I, II of IIA wat nie volgens Deel II van Aanhangsel 2 ingedeel hoef te word nie, enige waterdigte skuifdeur wat in 'n beskotte aangebring is, in 'n posisie is wat mag vereis dat dit op see oopgemaak moet word, en die drempel daarvan onder die boonste indelingslaswaterlyn is, geld die volgende voor- skrifte—

- (a) wanneer die getal van sulke deure (uitgesonderd deure by die ingange na astonnels) groter as vyf is, moet al sulke deure, asook dié by die ingange na astonnels, ventilasie-, geforseerde trek- of dergelike leidings, kragaandrywing hê en moet hulle vanaf 'n enkele plek op die navigasiebrug gelyktydig gesluit kan word;
- (b) wanneer die getal van sulke deure (uitgesonderd deure by die ingange na astonnels) groter as een is maar nie groter as vyf nie—
 - (i) en die skip geen passasiersruimtes onder die beskotte het nie, kan al sulke deure handbediende deure wees;
 - (ii) en die skip passasiersruimtes onder die beskotte het, moet al sulke deure, asook dié by ingange na astonnels, ventilasie-, geforseerde trek- of dergelike leidings, kragaandrywing hê en moet hulle vanaf 'n enkele plek op die navigasiebrug gelyktydig gesluit kan word;
- (c) wanneer daar in 'n skip slegs twee sulke deure is en hulle na die masjinerie ruimte lei of daarin geleë is, kan die Owerheid toelaat dat hierdie twee deure slegs met die hand bedien kan word.

(2) Waterdigte deure met drempels bo die boonste indelingslaswaterlyn en onder die lyn wat in regulasie 15 (2) (a) gespesifiseer word, moet skuifdeure wees en kan handbediende deure wees behalwe in 'n skip waarop subregulasie (3) van toepassing is.

(3) In elke skip van Klas II of IIA wat ingedeel is volgens Deel III van Aanhangsel 2, moet alle waterdigte skuifdeure kragaandrywing hê en moet hulle vanaf 'n enkele plek op die navigasiebrug 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 masjinerie ruimte is, daar nie vereis sal word dat so 'n deur kragaandrywing moet hê nie.

(4) Indien, in enige skip van Klas I, II of IIA, enige waterdigte skuifdeure wat soms op see met die oog op die tremming van steenkool oop moet wees, tussen bunkers in die tussendeke onder die beskotte aangebring is, moet sulke deure kragaandrywing hê.

(5) Indien, in enige skip van Klas I, II of IIA 'n verkeersgang wat deel van 'n verkoelings-, ventilasie- of geforseerde trekstelsel is, deur meer as een waterdigte

(5) Where sliding watertight doors are fitted in the position referred to in sub-regulation (2) (b), such doors shall not be fitted with remote control devices, and every watertight door which is fitted in such a position and which is accessible while the ship is at sea, shall be fitted with efficient locking arrangements.

(6) Every door required by this Part to be watertight, shall be capable of being secured by means other than bolts and of being closed by means other than by gravity.

(7) In every ship of Class I, II or IIA, watertight doors fitted in bulkheads between permanent and reserve bunkers, other than the doors referred to in regulation 16 (4), shall always be accessible.

16. MEANS OF OPERATING SLIDING WATERTIGHT DOORS.

(1) If, in any ship of Class I, II or IIA which is not required to be subdivided in accordance with Part III of Annex 2, any sliding watertight door fitted in a bulkhead 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 provisions shall apply—

- (a) when the number of such doors (excluding doors at entrances to shaft tunnels) exceeds five, all such doors and those at the entrances to shaft tunnels, ventilation, forced draught or similar ducts, shall be power operated and shall be capable of being simultaneously closed from a single position situated on the navigating bridge;
- (b) when the number of such doors (excluding doors at entrances to shaft tunnels) is greater than one, but does not exceed five,
 - (i) where the ship has no passenger spaces below the bulkhead deck, all such doors may be hand operated;
 - (ii) where the ship has passenger spaces below the bulkhead deck, all such doors and those at the entrances to shaft tunnels, ventilation or forced draught or similar ducts, shall be power operated and shall be capable of being simultaneously closed from a single position situated on the navigating bridge;
- (c) in any ship where there are only two such doors and they lead into or are within the space containing machinery, the Authority may permit them to be hand operated only.

(2) Watertight doors, the sills of which are above the deepest subdivision load water line and below the line specified in regulation 15 (2) (a), shall be sliding door and may be hand operated, except in a ship to which subregulation (3) applies.

(3) In every ship of Class II or IIA which is subdivided in accordance with Part III of Annex 2, all sliding watertight doors shall be operated by power and shall be capable of being simultaneously closed from a single position situated on the navigating bridge: Provided that if in any such ship there is only one such door and it is in the space containing machinery, it shall not be required to be operated by power.

(4) 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.

(5) 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 water-

dwarsbeskot loop en die drempels van die openings van sulke verkeersgange minder as 7 voet bo die boonste indelingslaswaterlyn geleë is, moet die waterdigte skuifdeure by sulke openings kragaandrywing hê.

(6) (a) Wanneer 'n waterdigte skuifdeur volgens die vereistes van hierdie Deel deur kragaandrywing vanaf 'n enkele plek op die navigasiebrug geskuif moet word, moet die kragstelsel so ingerig wees dat die deur ook by die deur self deur kragaandrywing geskuif kan word. Die nrigting moet sodanig wees dat die deur outomaties sal sluit indien dit by die deur self oopgemaak word nadat dit vanaf die enkele plek op die navigasiebrug gesluit is, en by die deur self gesluit gehou kan word ongeag enige poging om dit vanaf so 'n enkele plek te open. Daar moet aan weerskante van die beskot waarin die deur is, handvatsels vir die beheer van die kragstelsel aangebring word en hulle moet so ingerig wees dat enige persoon wat deur die deuropening loop, albei handvatsels gelyktydig in die oop posisie kan hou sonder om die sluitmeganisme per ongeluk in werking te stel.

(b) Waterdigte deure moet so gou moontlik sluit, maar nie spoed waarteen hulle sluit moet nie so groot wees dat dit gevaar inhou vir persone wat deur die opening oop nie.

(7) (a) In elke skip van Klas I, II of IIA moet daar minstens twee onafhanklike kragbronne wees wat al die waterdigte skuifdeure wat volgens die vereistes van hierdie Deel kragaandrywing moet hê, kan oopmaak en sluit in elke kragteenheid moet voldoende wees om al sulke deure in die skip gelyktydig te skuif. Die krag moet vanaf 'n enkele plek op die navigasiebrug beheer word in daar moet by daardie plek geskikte aanwysers aangebring word om te kontroleer dat elk van die twee kragbronne in staat is om die diens bevredigend te verrig.

(b) Wanneer die kragbronne hidroulies is, moet daar wees twee pompe wees wat elkeen in staat is om al die waterdigte deure in hoogstens 60 sekondes te sluit. Daarbenewens moet daar vir die hele installasie hidrouliese akkumulators wees met 'n voldoende vermoë om al die deure minstens drie keer te skuif, met ander woorde van die oop na die toe posisie, van die toe na die oop posisie en van die oop na die toe posisie. Die vloeistof wat gebruik word, moet sulks wees dat dit nie sal vries by enige temperatuur wat die skip straks gedurende sy diens al teenkom nie.

(8) In elke skip van Klas I, II of IIA moet elke waterdigte skuifdeur met kragaandrywing voorsien wees van 'n doeltreffende handbedieningsinrigting met 'n wenbeweging of 'n ander beweging met dieselfde veiligheidswaarborg, wat aan weerskante by die deur self en vanaf 'n toeganklike plek bo die beskotdek in werking gebring kan word.

(9) In elke skip van Klas I, II of IIA moet 'n waterdigte skuifdeur wat nie vereis word om kragaandrywing te hê nie, voorsien wees van 'n doeltreffende handbedieningsinrigting met 'n wenbeweging of 'n ander beweging met dieselfde veiligheidswaarborg, wat aan weerskante by die deur self en vanaf 'n toeganklike plek bo die beskotdek in werking gebring kan word.

(10) Wanneer handbedieningsinrigtings ooreenkomstig subregulasies (8) en (9) aangebring is, kan die Owerheid oelaat dat enige deur slegs van een kant af bedien kan word indien die nakoming van die vereistes van genoemde subregulasies onmoontlik is as gevolg van die nrigting van die ruimtes.

(11) (a) In elke skip van Klas I, II of IIA moet dit nie meer as 90 sekondes vereis om die deur heeltemal deur middel van die handbedieningsinrigting te sluit wanneer die skip regop is nie.

tight 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.

(6) (a) If a sliding watertight door is required by this Part to be operated by power from a single position on the navigating bridge, 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 single position on the navigating bridge, and will be capable of being kept closed at the door itself notwithstanding that an attempt may be made to open it from such single position. Handles for controlling the power system shall be provided at both sides of the bulkhead in which the 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 without being able to set the closing mechanism in operation accidentally.

(b) Watertight doors shall be capable of closing as expeditiously as possible, but the rate of closing shall not be so rapid as to be a danger to persons passing through the opening.

(7) (a) In every ship of Class I, II or IIA, there shall be at least two independent 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. The power shall be controlled from a single position on the navigating bridge, and there shall be provided at such position suitable indicators for checking that each of the two sources of power is capable of giving the required service satisfactorily.

(b) Where the sources of power are hydraulic, there shall be two pumps each of which shall be capable of closing all watertight doors in not more than 60 seconds. In addition, there shall be for the whole installation, hydraulic accumulators of sufficient capacity to operate all such doors at least three times, that is to say from the open to the closed position, from the closed to the open position and from the open to the closed position. The fluid used shall be one which does not freeze at any temperature liable to be encountered by the ship during its service.

(8) In every ship of Class I, II or IIA, every sliding watertight door which is operated by power, shall be provided with efficient hand-operating gear having an all-round crank motion, or some other movement providing the same guarantee of safety, capable of being operated on each side of the door itself and at an accessible position above the bulkhead deck.

(9) In every ship of Class I, II or IIA, if a sliding watertight door is not required to be operated by power, it shall be provided with efficient hand-operating gear having an all-round crank motion, or some other movement providing the same guarantee of safety, capable of being operated on each side of the door itself and at an accessible position above the bulkhead deck.

(10) Where hand-operating gear is fitted in accordance with sub-regulations (8) and (9), the Authority may permit any door to be operated on one side only, if the requirements of the said sub-regulations cannot be met owing to the layout of the spaces.

(11) (a) In every ship of Class I, II or IIA, the time necessary for the complete closure of any door by means of hand-operating gear with the ship upright shall not exceed 90 seconds.

(b) Die handbedieningsinrigting moet so ontwerp wees dat die deure vanaf elkeen van die vereiste bedieningsplekke gesluit en oopgemaak kan word.

(12) In elke skip van Klas I, II of IIA moet die handbedieningsinrigting om die waterdigte skuifdeure in die masjinerieruimte van bo die beskotdek te beweeg, buite die masjinerieruimte geleë wees behalwe waar so 'n posisie nie bestaanbaar met die doeltreffende plasing van die nodige inrigting is nie.

(13) In elke skip van Klas I, II of IIA moet die middels wat gebruik word om 'n waterdigte deur te bedien, ongeag of die deur kragaandrywing het of nie, die deur kan sluit wanneer die skip 15 grade na die een of ander kant toe oorhel.

17. WATERDIGTE DEURE—SEINE EN KOMMUNIKASIE.

(1) Elke waterdigte skuifdeur wat in 'n skip van Klas I, II of IIA aangebring is, moet verbind wees met 'n aanwyser by elke plek vanwaar die deur gesluit kan word, behalwe by die deur self, wat aantoon wanneer die deur oop is en wanneer dit toe is.

(2) Daar moet in verband met elke deur met kragaandrywing waarna in subregulasie (1) verwys 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 van die bedieningshandvatsel by die plek waarvandaan die deur op die punt staan om gesluit te word, voldoende sal wees om die sein te gee en die deur te sluit en die sein 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. Die sein moet aanhou gehoor word totdat die deur heeltemal toe is.

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

18. 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 ruimte wat bunkersteenkool kan bevat, asook die raam, moet van giet- of weekstaal vervaardig wees. Enige so 'n deur in enige ander posisie, asook die raam, moet van giet- of weekstaal of gietyster vervaardig wees.

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

(3) Indien 'n skroefinrigting gebruik word om so 'n deur te skuif, moet die skroef in 'n moer van geskikte korrosiebestande metaal werk.

(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 moet, indien die raam 'n skeletvorm het, so gemaak wees dat vuilgoed nie daarin kan versamel nie. Die onderkant van elke sodanige deur moet taps toeloop of afgeskuins wees.

(b) The hand-operating gear shall be of such a design that the doors can be closed and opened from each of the required operating positions.

(12) In every ship of Class I, II or 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.

(13) In every ship of Class I, II or IIA, the means of operation of any watertight door, whether power operated or not, shall be capable of closing the door when the ship is listed to 15 degrees either way.

17. 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 when the door is open and when it is closed.

(2) There shall be provided in connection with every door referred to in sub-regulation (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 of the operating handle 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. The signal shall continue to sound until the door is completely closed.

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

18. 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 a 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 the watertight door, the screw shall work in a nut of suitable metal which is resistant to corrosion.

(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) Elke vertikale waterdigte skuifdeur met kragaandrywing moet so ontwerp en aangebring word dat daar geen gevaar sal wees dat die deur sal val indien die kragtoevoer sou faal nie.

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

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

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

19. OPENINGS IN DIE HUIDBEPLATING ONDERKANT DIE INDOMPELINGSGRENSLYN.

(1) Die getal patryspoorte, spuigate, sanitêre afvoertype 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 behoorlike bediening van die skip.

(2) Die inrigtings vir die sluit van elke opening onderkant die indompelingsgrenslyn waarna in sub-regulasie (1) verwys word, moet bestaanbaar wees met die doel waarvoor dit bestem is en moet sodanig wees dat dit waterdigtheid verseker.

(3) (a) In elke skip van Klas I, II of 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 tussendeck van die skip die laagste punt van die 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 $2\frac{1}{2}$ persent van die breedte van die skip bokant die boonste indelingslaswaterlyn het, moet elke patryspoort in daardie tussendeck 'n tipe wees wat nie oopgemaak kan word nie. Indien in 'n tussendeck van die skip al die laagste punte van die openings van die patryspoorte bokant genoemde lyn is, moet elke patryspoort in daardie tussendeck 'n tipe wees wat nie oopgemaak kan word nie, of slegs oopgemaak kan word deur 'n persoon wat deur die gesagvoerder van die skip gemagtig is om dit te doen. Geen patryspoort mag so aangebring word dat die laagste punt van sy opening onderkant die boonste indelingslaswaterlyn is nie.

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

(5) In elke Hoofstuk II-skip moet elke patryspoort onderkant die indompelingsgrenslyn voorsien wees van 'n doeltreffende geskarnierde binneluik wat blywend so aangebring is dat dit maklik en doeltreffend toe- en waterdig gemaak kan word. Met die voorbehoud dat agter 'n punt een-agste van die skepslengte 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 $2\frac{1}{2}$ persent van die breedte van die skip bo die skip se boonste indelingslaswaterlyn, die luik vir die toepassing van hierdie Deel, in bemannings- en passasiërsruimtes verplaasbaar kan wees.

(6) Patryspoorte mag nie onderkant die indompelingsgrenslyn in enige ruimte van 'n Hoofstuk II-skip wat uitsluitlik vir die vervoer van vrag of steenkool toegewys

(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.

19. 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 opening below the margin line referred to in sub-regulation (1), shall be consistent with its intended purpose and shall be such as will ensure watertightness.

(3) (a) In every ship of Class I, II or 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 the ship, the sills of any side scuttles are below a line drawn parallel to the bulkhead deck at side and having its lowest point $2\frac{1}{2}$ 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 the 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 authorized to do so by the master of the ship. No side scuttle shall be so fitted that its sill is below the deepest subdivision load water line.

(4) In every Chapter II ship of Class V or 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 $2\frac{1}{2}$ per cent of the breadth of the ship above the ship's deepest subdivision 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

is, aangebring word nie. Indien patryspoorte aangebring word in ruimtes onderkant die indompelingsgrenslyn wat vir die vervoer van ôf vag ôf passasiere toegewys kan word, moet sulke patryspoorte en hul luike so gemaak wees dat hulle nie oopgemaak kan word nie behalwe deur 'n persoon wat deur die gesagvoerder van die skip gemagtig is om dit te doen.

(7) Patryspoorte met outomatiese ventilasie mag nie onderkant die indompelingsgrenslyn in die huidbepaling 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. Lood of ander materiaal wat gevoelig is vir hitte, moet nie gebruik word vir pype wat buiteboords van huidkleppe in inlaat- of afvoerpype aangebring is nie, of in enige ander plek waar die verswakking van sulke pype in die geval van brand die gevaar van oorstroming kan laat ontstaan nie.

(b) Sonder benadeling van die algemeenheid van paragraaf (a), 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 ôf—

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

(ii) twee outomatiese terugslagkleppe, waarvan die boonste so bokant die skip se boonste indelingslaswaterlyn geleë is dat dit altyd toeganklik sal wees met die oog op die nasien daarvan onder werkomstandighede en 'n horisontale gebalanseerde tipe is wat gewoonlik toe is.

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

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

(e) Hoof- en hulpinlaat- en afvoerpype wat met masjinerie in verband staan, moet voorsien word van geredelik toeganklike krane of kleppe tussen die pype en die skip se huidbeplating of tussen die pype en 'n gefabriseerde kas wat aan die huidbeplating bevestig is. Sulke krane of kleppe wat aan sulke inlaat- of afvoerpype bevestig is en alle buiteboordse toebehore daarvan moet van staal, brons of 'n ander geskikte rekbare materiaal gemaak wees. Indien hulle van staal gemaak is, moet sulke krane en kleppe teen korrosie beskerm word.

(f) Afvoerpype wat deur die huidbeplating onderkant die indompelingsgrenslyn van enige skip van Klas I, II of 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 buigstukke of elmboë van soliede metaal behalwe gietyster of lood opgestel word.

(g) Alle afvoerpype wat deur die huidbeplating onderkant die indompelingsgrenslyn van 'n Hoofstuk II-skip gevoer word en die kleppe wat daarmee in verband staan, moet teen beskadiging beskerm word.

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 authorized to do so by the master of the ship.

(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. Lead or other heat sensitive materials shall not be used for pipes fitted outboard of shell valves in inlets or discharges, or in any other place where the deterioration of such pipes in the event of fire would give rise to danger of flooding.

(b) Without prejudice to the generality of paragraph (a), 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 always 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 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. All such cocks or valves attached to such inlets or discharges and all fittings outboard thereof, shall be made of steel, bronze or other suitable ductile 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 Class I, II or 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 a Chapter II ship and the valves relating thereto, shall be protected from damage.

(h) Die koppe van alle boue wat krane, kleppe, afvoertype en ander soortgelyke uitrusting onderkant die indompelingsgrenslyn met die huidbeplating van 'n Hoofstuk II-skip verbind, moet buite die huidbeplating wees en moet of versenke of rond wees.

(i) Doeltreffende middels moet voorsien word vir die dreinerings van alle waterdigte dekke onderkant die indompelingsgrenslyn in 'n Hoofstuk II-skip en enige dreineerpyp moet so van kleppe voorsien 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 asstortkoker, vullisstortkoker en ander soortgelyke stortkoker in 'n Hoofstuk II-skip, moet van 'n doeltreffende waterdigte deksel voorsien word en indien so 'n opening onderkant die indompelingsgrenslyn is, moet dit ook voorsien word van 'n outomatiese terugslagklep in die koker op 'n maklik toeganklike plek bokant die skip se boonste indelingslaswaterlyn. Die klep moet die horisontale gebalanseerde tipe wees wat gewoonlik toe is en moet voorsien wees van plaaslike middels om dit in 'n geslote posisie te bevestig. Die vereistes van hierdie paragraaf is nie van toepassing op asuitstoters en uitdruwers waarvan die binneboordse openings in die skip se stookruimte en noodwendig onderkant die boonste indelingslaswaterlyn geleë is nie. Sulke uitstoters en uitdruwers moet voorsien wees van middels wat voorkom dat water die skip binnekom.

(k) Enige loopplank-, vrag- en steenkoolpoort wat onder die indompelingsgrenslyn van 'n Hoofstuk II-skip aangebring is, moet sterk genoeg wees en sy laagste punt moet nie onderkant die skip se boonste indelingslaswaterlyn wees nie.

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

(1) In elke Hoofstuk II-skip moet die ontwerp en konstruksie van patryspoorte, vensters, loopplank-, vrag- en steenkoolpoorte en ander openings in die huidbeplating bokant die indompelingsgrenslyn en die middels waardeur hulle gesluit word doeltreffend wees en, moet hulle, met inagneming van die ruimtes waarin hulle aangebring is en hul posisie met betrekking tot die boonste indelingslaswaterlyn en die voorgenome diens van die skip, sterk genoeg wees.

(2) In elke Hoofstuk II-skip moet doeltreffende binne-luik wat maklik toegemaak en waterdig bevestig kan word, voorsien word vir alle patryspoorte vir ruimtes onderkant die eerste dek bo die beskotdek.

21. OOP DEK.

In elke Hoofstuk II-skip moet die beskotdek of 'n dek bo die beskotdek weerdig wees. Alle openings in 'n blootgestelde weerdige dek moet luikhoofde hê wat hoog en sterk genoeg is en moet voorsien wees van doeltreffende en snel middels om hulle weerdig te sluit. Waterafvoertpoorte, oop relings en spuigate moet waar nodig aangebring word om water onder alle weerstoestande vinnig van die weerdige dek af te voer.

22. GEDEELTELIKE INDELING BO DIE INDOMPELINGSGRENSLYN.

In elke Hoofstuk II-skip moet alle redelike en praktiese uitvoerbare maatreëls getref word om die binnekoms en spreiding van water waar nodig te beperk, en dié maatreëls kan gedeeltelike beskotte of webbe insluit. Waar sulke gedeeltelike waterdigte beskotte en webbe op die beskotdek aangebring word, bo of in die onmiddellike nabyheid van hoofindelingsbeskotte, moet hulle toegerus word met waterdigte huid- en beskotdekverbindings so-

(h) All bolts connecting cocks, valves, discharge pipes and other similar equipment to the shell plating of a Chapter II 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 a Chapter II 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 a Chapter II 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 requirements 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 a Chapter II ship, shall be of adequate strength and its lowest point shall not be below the ship's deepest subdivision load water line.

20. SIDE AND OTHER OPENINGS ABOVE THE MARGIN LINE.

(1) In every Chapter II ship, side scuttles, windows, gangway ports, cargo ports, bunkering 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.

(2) In every Chapter II ship, efficient inside deadlights, which can be easily closed and secured watertight, shall be provided for all side scuttles to spaces below the first deck above the bulkhead deck.

21. WEATHER DECK.

In every Chapter II ship, the bulkhead deck or a deck above the bulkhead deck shall be weathertight. All openings in an exposed 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, open rails and scuppers, shall be fitted as necessary for rapidly clearing the weather deck of water under all weather conditions.

22. PARTIAL SUBDIVISION ABOVE THE MARGIN LINE.

In every Chapter II ship, all reasonable and practicable measures shall be taken to limit where necessary the entry and spread of water above the bulkhead deck, which measures may include partial bulkheads or webs. Where such partial watertight bulkheads and webs are fitted on the bulkhead decks, above or in the immediate vicinity of main subdivision bulkheads, they shall have watertight shell and bulkhead deck connections so as to restrict the

dat die stroming van die water oor die dek beperk kan word wanneer die skip in 'n beskadigde toestand oorhel. Wanneer sulke gedeeltelike waterdigte beskotte nie onmiddellik bo die beskotte daaronder is nie, moet die beskotdek tussenin doeltreffend waterdig gemaak word.

23. INDELINGSLASLYNE.

(1) Elke Hoofstuk II-skip moet aan die skeepsboorde midskeeps gemerk word met die indelingslaslyne wat deur die Minister in die geval van 'n internasionale laslynskip, of die Sekretaris in die geval van 'n plaaslike laslynskip, daaraan toegewys is. Die merke moet bestaan uit horisontale lyne, een 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 gevef word en moet ook in yster of staalskepe ingesny of gesenterpons of deur 'n gesweiste kraal aangedui word en in houtskepe in die hout ingesny word.

(2) Die indelingslaslyne moet deur die letter C aangedui word en in die geval van 'n skip van Klas I of II, met opeenvolgende nommers vanaf die boonste indelingslaslyn wat C gemerk moet word. In die geval van 'n Hoofstuk II-skip van Klas IIA, V of VI moet—

- (a) die indelingslaslyn, indien daar net een is, met die letter C aangedui word;
- (b) die indelingslaslyne, indien daar meer as een is, met die letter C en opeenvolgende letters vanaf die boonste indelingslaslyn wat CA gemerk moet word, aangedui word.

Die aanduidende letters en syfers moet in elke geval op die skeepsboorde gevef en gesny of gesenterpons of deur 'n gesweiste kraal aangedui word, wat die geval ook al is, op dieselfde wyse as die lyne waarna hulle verwys.

24. VERTONING VAN PLANNE VIR BEHEER IN GEVALLE VAN BESKADIGING.

In elke Hoofstuk II-skip moet planne wat vir elke dek en ruim die grense van die waterdigte afdelings, die openings daarin en die sluitingsmiddels en die posisie van die beheermiddels daarvan asook die inrigtings vir die herstel van enige slagsy as gevolg van oorstroming duidelik toon, blywend vir die inligting van die offisiere in bevel van die skip vertoon word. Daarbenewens moet boekies met genoemde gegewens vir gebruik deur die offisiere van die skip beskikbaar gestel word.

HOOFSTUK II (A)—VEREISTES VIR SKEPE WAT NIE AAN HOOFSTUK II MOET VOLDOEN NIE.

25. TOEPASSING VAN HOOFSTUK II (A).

Hierdie Hoofstuk is van toepassing op elke oop of gedeeltelik oordekte skip van Klas V en op elke skip van Klas VI wat minder as 151 passasiers vervoer en 'n „Hoofstuk II (A)-skip” beteken 'n skip waarop hierdie Hoofstuk van toepassing is.

26. 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.

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

flow of water along the deck when the ship is heeled in a damaged condition. Where such partial watertight bulkheads do not coincide with the bulkheads below, the bulkhead deck between shall be made effectively watertight.

23. 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 in the case of an international load line ship or the 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 12 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 or indicated by welded bead on iron or steel ships, and cut into the planking on wood ships.

(2) The subdivision load lines shall be identified with the letter C, and, in the case of a ship of Class I or II, with consecutive numbers beginning from the deepest subdivision load line which shall be marked C. In the case of a Chapter II ship of Class IIA, V or 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 CA.

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

24. EXHIBITION OF DAMAGE CONTROL PLANS.

In every Chapter II ship, there shall be permanently exhibited, for the information of the officer in charge of the ship, plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein, the means of closing such openings, the position of the controls and the arrangements for the correction of any list due to flooding. In addition, booklets containing such information shall be available for the use of the officers of the ship.

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

25. APPLICATION OF CHAPTER II (A).

This Chapter applies to every open or partially decked ship of Class V and to every ship of Class VI carrying fewer than 151 passengers, and a “Chapter II (A) ship” means a ship to which this Chapter applies.

26. 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) Every side scuttle fitted in a Chapter II (A) ship, shall be of the non-opening type and shall be watertight and of sufficient strength having regard to its position in the ship.

HOOFSTUK III—LENSPOMPINRIGTINGS.

27. TOEPASSING VAN HOOFSTUK III.

Tensy daar in hierdie Hoofstuk anders aangedui word, is hierdie Hoofstuk van toepassing op elke skip van Klas I, II, IIA, V of VI en 'n „Hoofstuk III-skip” beteken 'n skip waarop hierdie Hoofstuk van toepassing is.

28. ALGEMEEN.

Behalwe in die geval van 'n oop skip van Klas VI wat nie langer as 40 voet is nie en nie reise onderneem na 'n punt verder as 5 myl van die vertrekpunt af nie, moet elke Hoofstuk III-skip voorsien wees van 'n doeltreffende pompinstallasie wat in staat is om enige waterdigte afdeling in die skip, behalwe 'n ruimte wat permanent toegewys is vir die vervoer van vars water, waterballas of olie en waarvoor daar doeltreffende pomp- of dreineermiddels voorsien is, onder alle omstandighede wat in die praktyk na 'n beskadiging mag voorkom, ongeag of die skip regop bly of nie, uit te pomp en te dreineer. Suigleidings na die kante moet, waar nodig, vir dié doel voorsien word. Doeltreffende maatreëls moet getref word so dat water in enige waterdigte afdeling sy weg na die suigpype kan vind. Doeltreffende middels moet voorsien word om water uit alle geïsoleerde ruime en geïsoleerde tussen-dekke in die skip te dreineer. Met die voorbehoud dat die Owerheid kan toelaat dat daar nie voorsiening vir dreinerings in 'n bepaalde afdeling gemaak word nie, indien hy oortuig is dat—

(a) met inagneming van die berekenings gemaak ooreenkomstig die voorwaardes gestel in Aanhangsel 3, die veiligheid van die skip nie daardeur benadeel sal word nie; en

(b) die voorsiening van dreinerings andersins onwenslik sal wees.

29. GETAL EN TIPE LENSOPOMPE: SKEPE VAN KLAS I EN II.

(1) Elke skip van Klas I of II moet in ooreenstemming met onderstaande tabel voorsien wees van pompe wat met die hoofsluising verbind is:

Kriteriumsyfer.	Kleiner as 30.	30 en groter.
Hoofmasjiempomp (wat deur een onafhanklike pomp vervang kan word)	1	1
Onafhanklike pompe	2	3

(2) Die pompe waarna in subregulasie (1) verwys word, moet soos volg ingerig word—

(a) een van die pompe moet 'n doeltreffende noodpomp van 'n onderdompelbare tipe wees met sy kragbron en die nodige kontroles bo die skip se beskotdek geleë. So 'n pomp en sy kragbron moet nie voor die aanvaringsbeskot of nader aan die skeepsboord as een-vyfde van die skip se breedte reghoekig met die hartlyn van die skip gemeet op die hoogte van die boonste indelingslaslyn, aangebring word nie; of

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

CHAPTER III—BILGE PUMPING ARRANGEMENTS.

27. APPLICATION OF CHAPTER III.

Unless otherwise indicated in this Chapter, this Chapter applies to every ship of Class I, II, IIA, V or VI, and a “Chapter III ship” means a ship to which this Chapter applies.

28. GENERAL.

Except in the case of an open ship 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 Chapter III ship shall be provided with an efficient pumping plant capable of pumping from and draining any watertight compartment in the ship, other than a space permanently appropriated for the carriage of fresh water, water ballast or oil and for which other efficient means of pumping or drainage is provided, under all conditions likely to arise in practice after a casualty, whether or not the ship remains upright. Wing suction 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. Provided that the Authority may allow the provision for drainage to be omitted in a particular compartment if he is satisfied:

(a) that having regard to the calculations made in accordance with the conditions set out in Annex 3, the safety of the ship will not thereby be impaired; and

(b) that the provision of drainage would otherwise be undesirable.

29. NUMBER AND TYPE OF BILGE PUMPS: SHIPS OF CLASSES I AND II.

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

Criterion Numeral.	Less than 30.	30 and over.
Main engine pump (which may be replaced by one independent pump)	1	1
Independent pumps	2	3

(2) The pumps referred to in sub-regulation (1) shall be arranged as follows—

(a) 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. Such pump and its source of power shall not be installed forward of the collision bulkhead or nearer to the side of the ship than one-fifth of the breadth of the ship measured at right angles to the centre line of the ship at the level of the deepest subdivision load line; or

(b) 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.

30. GETAL EN TIPE LENSOPOMPE: SKEPE VAN KLAS IIA.

(1) Elke skip van Klas IIA moet van lenspompe voorsien wees ooreenkomstig item (c), (d) of (e), watter een ook al van toepassing is, van onderstaande tabel:

Lengte van skip in voet.	Getal pompe.		
	Hoofmasjiën- pomp.*	Onafhanklike kragpompe.	Handpompe.†
(a) Onder 50	1	—	Een van die hefboomtipe vir elke waterdigte afdeling of een van die kruktype.
(b) 50 en onder 70	1	1	Een van die hefboomtipe vir elke waterdigte afdeling, of een van die kruktype.
(c) 70 en onder 100	1	1	Een van die hefboomtipe vir elke waterdigte afdeling, of een van die kruktype.
(d) 100 en onder 250	1	1	Een van die kruktype.
(e) 250 en groter	1	2	—

* Die hoofmasjiënpomp kan deur een onafhanklike kragpomp vervang word.

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

30. 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 item (c), (d) or (e), whichever is appropriate, of the following table—

Length of Ship in feet.	Number of Pumps.		
	Main Engine Pump.*	Independent Power Pumps.	Hand Pumps.†
(a) Under 50	1	—	One of the lever type for each watertight compartment, or one of the crank type.
(b) 50 feet and under 70	1	1	One of the lever type for each watertight compartment, or one of the crank type.
(c) 70 and under 100	1	1	One of the lever type for each watertight compartment, or one of the crank type.
(d) 100 and under 250	1	1	One of the crank type.
(e) 250 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 250 voet of langer en in elke sodanige skip met 'n lengte van minder as 250 voet waarin 'n handpomp deur 'n onafhanklike kragpomp vervang is, is regulasie 29 (2) van toepassing op so 'n skip soos dit op 'n skip van Klas I of II van toepassing is.

(2) In every ship of Class IIA of 250 feet in length or over and in every such ship of under 250 feet in length in which a hand pump is replaced by an independent power pump, regulation 29 (2) apply to such a ship as it applies to a ship of Class I or II.

31. GETAL EN TIPE LENSOPOMPE, ENS.: SKEPE VAN KLAS V EN VI.

31. NUMBER AND TYPE OF BILGE PUMPS, ETC.: SHIPS OF CLASSES V AND VI.

(1) Elke skip van Klas V moet van lenspompe voorsien wees ooreenkomstig item (b), (c), (d) of (e), watter een ook al van toepassing is, van die tabel wat in regulasie 30 (1) uiteengesit is.

(1) Every ship of Class V shall be provided with bilge pumps in accordance with item (b), (c), (d) or (e), whichever is appropriate, of the table set forth in regulation 30 (1).

(2) Elke skip van Klas VI moet van lenspompe voorsien wees ooreenkomstig die toepaslike item van die tabel wat in regulasie 30 (1) uiteengesit is.

(2) Every ship of Class VI shall be provided with bilge pumps in accordance with the appropriate item of the table set forth in regulation 30 (1).

32. VEREISTES VIR LENSOPOMPE EN -SUIGLEIDINGS.

32. REQUIREMENTS FOR BILGE PUMPS AND BILGE SUCTIONS.

(1) Kraglenspompe wat in enige Hoofstuk III-skip aangebring word, moet waar 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 oorstroom sal word nie, en as die skip se masjiene en stoomketels in twee of meer waterdigte afdelings geplaas is, moet die lenspompe wat daar beskikbaar is, sover moontlik, onder hierdie afdelings verdeel word.

(1) Power bilge pumps fitted in any Chapter III 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) Elke lenspomp wat ooreenkomstig hierdie Deel in 'n Hoofstuk III-skip voorsien word, moet selflaaiend wees, tensy doeltreffende laaimiddels voorsien word. Elke sodanige pomp behalwe 'n handpomp van die hefboom-tipe en 'n pomp wat slegs vir piekafdelings voorsien word, moet, ongeag of dit met die hand of meganiese bedien word, so ingerig wees dat dit water uit enige ruimte wat ingevolge regulasie 28 gedreineer moet word, kan pomp.

(3) Elke kraglenspomp in 'n Hoofstuk III-skip moet in staat wees om water teen 'n snelheid van minstens 400 voet per minuut deur die skip se hooflenspyp te pomp wanneer sy deursnee is soos by regulasie 34 (1) bepaal. Elke sodanige pomp moet 'n regstreekse suigleiding uit die ruimte waarin dit geleë is, hê, met die voorbehoud dat daar nie meer as twee regstreekse suigleidings in een ruimte vereis word nie. Elke sodanige suigleiding moet 'n deursnee hê wat nie kleiner as dié van die skip se hooflenspyp is nie. Die regstreekse suigleidings in die skip se masjinerieruimte moet so ingerig wees dat water vanaf elke kant van die ruimte deur regstreekse suigleidings na onafhanklike lenspompe gepomp kan word.

(4) Daar moet in die stookruim van elke Hoofstuk III-skip wat 'n steenkoolgestookte skip is, 'n buigbare suigslang verskaf word wat lank genoeg is om van 'n inrigting aan 'n onafhanklike kraglenspomp in die skip tot by elke kant van die stookruimkimmie te reik. Die suigslang is addisioneel by die ander lenssuigleidings wat by hierdie regulasie vereis word en moet 'n binnedeursnee hê van vier duim, of $\frac{1}{2}$ duim groter as dié van die grootste taklenssuigleiding wat by regulasie 34 vereis word, watter ook al die kleinste is.

(5) Een van elke hoofmasjiene se seewatersirkulasie-pompe in 'n Hoofstuk III-skip moet toegerus word met regstreekse suigverbindinge, wat van terugslagkleppe voorsien is, tot by die laagste dreineervlak in die skip se masjinerieruimte, of so na daaraan as wat die Owerheid tevrede stel. Sulke verbindinge moet in 'n stoomskip 'n deursnee hê van minstens twee-derdes van dié van die skip se hoofsewaternet-inlaat en in 'n motorskip dieselfde deursnee as die pomp-inlaat. Wanneer enige hoofsewaternet-siepomp na die mening van die Owerheid nie vir hierdie doel geskik is nie, moet 'n regstreekse noodsuigleiding aangebring word vanaf die grootste beskikbare onafhanklike krag-aangedrewe pomp na die dreineervlak van die masjinerieruimte; die suigleiding se deursnee moet dieselfde wees as dié van die hoofinlaat van die pomp wat gebruik word. Die vermoë van die pomp wat aldus aangesluit word, moet dié van 'n vereiste lenspomp oorskry met 'n hoeveelheid wat die Owerheid tevrede stel. Die oop end van sulke suigleidings of die sif, as daar een is, wat daaraan verbind is, moet toeganklik wees vir skoonmaakdoeleindes. Indien die ketelbrandstof steenkool kan wees en daar nie 'n waterdigte beskot tussen die skip se masjiene en ketels is nie, moet 'n regstreekse uitlaat na buiteboord vanaf minstens een van die voormelde pompe aangebring word, tensy 'n omloopleiding na die sirkulasie-uitlaat daarvan aangebring is. Die stange van die skip se hoofsewaternet-inlaat en regstreekse suigkleppe moet voldoende bokant die platvorm van die masjienkamer reik.

(6) Die handlenspompe in 'n Hoofstuk III-skip moet van bo die skip se beskotdek, as daar een is, vandaan bedien kan word en moet so ingerig wees dat die pomp-suier- en stertklep onder oorstromingstoestande vir ondersoek en opknapping uitgehaal kan word.

33. INRIGTING VAN LENSPIPE.

(1) In elke Hoofstuk III-skip moet alle pype vanaf pompe vir die dreinerings van vragruimtes of enige deel van die masjinerieruimte afsonderlik wees van die pype wat gebruik kan word vir die vulling of lediging van ruimtes waarin water of olie vervoer word.

(2) Every bilge pump provided in a Chapter III 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 space required by regulation 28 to be drained.

(3) Every power bilge pump in a Chapter III ship, shall be capable of giving a speed of water of not less than 400 feet per minute through the ship's main bilge pipe when its diameter is that determined by regulation 34 (1). 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 Chapter III 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 34, whichever is the less.

(5) One of the sea water pumps circulating each main engine in a Chapter III ship, shall be fitted with direct suction connections, which shall be provided with non-return valves, to the lowest drainage level in the ship's machinery space, or as near thereto as will satisfy the Authority. Such connections in a steamship shall be of a diameter at least two-thirds of that of the ship's main sea inlet, and in a motor ship of the same diameter as the pump inlet. Where in the opinion of the Authority, any main circulating pump is not suitable for this purpose, a direct emergency bilge suction shall be led from the largest available independent power driven pump to the drainage level of the machinery space; the suction shall be of the same diameter as the main inlet of the pump used. The capacity of the pump so connected, shall exceed that of a required bilge pump by an amount satisfactory to the Authority. The open end of such suctions 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 a Chapter III 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.

33. ARRANGEMENT OF BILGE PIPES.

(1) In every Chapter III 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) Alle lenspype wat gebruik word in of onder steenkoolbunkers of brandstofbewaartens of in ketel- of masjinerieruimtes, met inbegrip van ruimtes waarin oliebesinktenks of oliebrandstofpompeenhede geleë is, moet van staal of ander geskikte materiaal wees.

(3) Lenssuigpype in 'n Hoofstuk III-skip mag nie deur olietenks gevoer word nie, tensy die pype in 'n oliedigte verkeersgang ingesluit is. Sulke pype mag nie deur dubbelboomtenks gevoer word nie.

(4) Lenssuigpype moet met flensverbindings gemaak word en deeglik in posisie bevestig en, waar nodig, teen die gevaar van beskadiging beskerm word. Doeltreffende uitskoppings of buigstukke moet in elke pypeleiding voorsien word en waar 'n verbinding by 'n beskot of elders met 'n loodbuigstuk gemaak word, moet die straal van elke buigstuk en die afstand tussen die asse van die reguit gedeeltes van die pype minstens drie maal die deursnee van die pyp wees en die lengte van enige buigstuk moet minstens agt maal daardie deursnee wees.

34. DEURSNEE VAN LENSSUIGPYPE.

(1) Onderworpe aan die bepalings van subregulasies (2) en (3) moet die binnedeursnee van die hoof- en taklenssuigpype van elke Hoofstuk III-skip tot die naaste $\frac{1}{4}$ duim bereken word volgens onderstaande formules:—

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

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

waar d_m = binnedeursnee van die hooflenssuigpype in duim.
 d_b = binnedeursnee van die taklenssuigpype in duim.
 L = lengte van die skip in voet.
 B = breedte van die skip in voet.
 D = holte van die skip tot by die beskotdek in voet.
 l = lengte van afdeling in voet.

(2) Geen hooflenssuigpyp in 'n skip van Klas I, II of IIA mag 'n binnedeursnee van minder as $2\frac{1}{2}$ duim hê nie en die binnedeursnee van geen taksuigpyp mag minder as 2 duim wees of hoër as 4 duim te wees nie.

(3) Geen lenssuigpyp in 'n skip van Klas V of VI mag 'n binnedeursnee van minder as $1\frac{1}{4}$ duim hê nie.

35. VOORSORGMAATREËLS TEEN OORSTROMING DEUR LENS- PYPE.

(1) In elke skip waarop Hoofstuk II van toepassing is, moet die lens- en ballaspompstelsel so ingerig wees dat dit sal verhoed dat water vanaf die see, of vanaf waterballasruimtes, die skip se vragruimtes of enige gedeelte van die masjinerieruimte binnekom, of uit een waterdigte afdeling in die skip na 'n ander stroom. Die lensverbinding met enige pomp wat suiging uit die see of waterballasruimtes bewerkstellig, moet gemaak word deur middel van of 'n terugslagklep of 'n kraan wat nie terselfdertyd na die kimme en na die see, of na die kimme en die waterballasruimtes, oopgedraai kan word nie. Kleppe in die lensverdeelkaste moet die terugslag tipe wees. 'n Inrigting van sluitkleppe of blinde flense moet voorsien word om te verhoed dat enige dieptenk in so 'n skip per ongeluk water uit die see inkry wanneer dit vrag bevat, of deur 'n lenspyp leeggepomp word wanneer dit waterballas bevat en instruksies vir die bediening van so 'n inrigting moet digby in 'n opvallende plek vertoon word.

(2) In elke skip waarop Hoofstuk II van toepassing is, moet daar voorsiening gemaak word om te verhoed dat enige waterdigte afdeling wat deur 'n lenssuigpyp be-

(2) All bilge pipes used in or under coal bunkers or fuel storage tanks or in boiler or machinery spaces, including spaces in which oil-settling tanks or oil fuel pumping units are situated, shall be of steel or other suitable material.

(3) Bilge suction pipes in a Chapter III 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) Bilge suction 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.

34. DIAMETER OF BILGE SUCTION PIPES.

(1) Subject to the provisions of subregulations (2) and (3), in every Chapter III ship the internal diameter of main and branch bilge suction pipes shall be determined to the nearest $\frac{1}{4}$ inch calculated according to the following formulae:—

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

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

where d_m = internal diameter of the main bilge suction pipe 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 a ship of Class I, II or IIA, shall be less than $2\frac{1}{2}$ 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 a ship of Class V or VI shall be less than $1\frac{1}{4}$ inches in bore.

35. PRECAUTIONS AGAINST FLOODING THROUGH BILGE PIPES.

(1) In every ship to which Chapter II applies, the bilge and ballast pumping systems 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) In every ship to which Chapter II applies, provision shall be made to prevent the flooding of any watertight compartment served by a bilge suction pipe in the event of

dien word, oorstroom word indien die pyp in enige waterdigte afdeling afbreek of andersins beskadig word as gevolg van 'n botsing, of deurdat die skip op die grond vasloop. Wanneer enige deel van so 'n pyp nader aan die skeepsboord geleë is as een-vyfde van die midskeepsbreedte van die skip gemeet op die hoogte van die boonste indelingslaswaterlyn, of in 'n kokerkiel geleë is, moet daar in die waterdigte afdeling wat die oop ent van die pyp bevat, 'n terugslagklep in die pyp aangebring word.

(3) In elke skip van Klas I, II of IIA, moet die lenshooffleiding nie nader aan die skeepsboord geleë wees nie as een-vyfde van die breedte van die skip reghoekig met die hartlyn van die skip gemeet op die hoogte van die boonste indelingslaswaterlyn, en wanneer 'n lenspomp of sy pypverbinding met die lenshooffleiding nie so geleë is nie, moet die inrigting so wees dat skade aan die skeepsboord wat deurdring tot die omvang van een-vyfde van die skip se breedte gemeet soos in hierdie paragraaf beskryf, nie die ander lenspomp-inrigtings buite werking sal stel nie.

36. LENSKLEPPE, -KRANE, ENS.

(1) In elke skip waarop Hoofstuk II van toepassing is, moet alle verdeelkaste, kleppe en krane wat in verband met die lenspomp-inrigting aangebring word, op plekke wees wat te alle tye onder gewone omstandighede toeganklik is, en hulle moet so ingerig wees dat in die geval van oorstrooming, een van die lenspompe op enige waterdigte afdeling in die skip kan werk. Indien daar in so 'n skip slegs een pypleidingstelsel deur al die pompe bedien word, moet die nodige kleppe of krane vir die beheer van die lenssuigleidings van bo die skip se beskotdek vandaan bedien kan word. Indien daar benewens die hooflenspompstelsel, 'n noodlenspompstelsel verskaf word, moet dié onafhanklik van die hoofstelsel wees en so ingerig wees dat 'n pomp in die geval van 'n oorstrooming op enige waterdigte afdeling kan werk; in daardie geval moet die krane en kleppe wat vir die bediening van die noodstelsel nodig is, van bo die beskotdek vandaan bedien kan word. Met die voorbehoud dat in enige skip van Klas IIA met 'n lengte van minder as 100 voet wat ooreenkomstig die bepalings van regulasie 30 (1) van 'n handpomp van die hefboomtipe vir elke waterdigte afdeling voorsien is, die kleppe en krane in die hooflensleiding vir die beheer van die lenssuigleidings nie van bo die skip se beskotdek vandaan bedien hoef te word nie indien hulle in dieselfde afdeling as 'n kragpomp is.

(2) In elke skip waarop Hoofstuk II van toepassing is moet elke bedieningstang vir lenssuigkleppe of -krane so regstreeks moontlik gelei word. Elke sodanige tang wat deur 'n vrag- of steenkoolbunkerruimte gevoer word, moet in sulke ruimtes teen beskadiging beskerm word.

(3) In elke skip waarop Hoofstuk II van toepassing is, moet die beheermiddels van elke klep of kraan wat by hierdie regulasie vereis word om van bo die beskotdek vandaan bedien te kan word, op die plek van bediening duidelik gemerk word om aan te dui wat die doel daarvan is en hoe dit oop- of toegemaak kan word, en toegerus word met middels om te toon of hulle oop of toe is.

37. LENSSELIKKASTE EN -SUIKKORWE.

Lenssuigleidings in die masjinerieruimte van elke Hoofstuk III-skip moet gelei word van maklik toeganklike sekkaste wat, waar doenlik, bo die vlak van die werkvloer van so 'n ruimte geplaas is. Die kaste moet reguit suigpype na die kimme hê en deksels wat op so 'n wyse bevestig word dat hulle maklik oop- en toegemaak kan word. Die suigente in die skeepsruime en tonnel-skatte moet omsluit wees deur suigkorwe met perfora-

the pipe being severed or otherwise damaged in any other watertight compartment through collision or grounding. 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.

(3) In every ship of Class I, II or IIA, the bilge main shall not be situated nearer to the ship's side than one-fifth of the breadth of the ship measured at right angles to the centre line of the ship at the level of the deepest subdivision load water line, and where any bilge pump or its pipe connecting it to the bilge main is not so situated, the arrangements shall be such that damage to the ship's side penetrating to the extent of one-fifth of the ship's breadth measured as described in this paragraph, shall not put the other bilge pumping arrangements out of action.

36. BILGE VALVES, COCKS, ETC.

(1) In every ship to which Chapter II applies, 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 suction 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 on any watertight compartment under flooding conditions; in that case the cocks and valves necessary for the operation of the emergency system shall be capable of being operated from above the bulkhead deck. 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 regulation 30 (1), the valves and cocks on the bilge main for controlling the bilge suction shall not be required to be capable of being operated from above the ship's bulkhead deck if they are in the same compartment as a power pump.

(2) In every ship to which Chapter II applies, every operating rod for bilge suction valves or cocks shall be led as directly as possible. Every such rod passing through a cargo or coal bunker space, shall be protected against damage in such spaces.

(3) In every ship to which Chapter II applies, every valve or cock which is required by this regulation to be operated from above the bulkhead deck, shall have its control at its place of operation clearly marked to show the purpose it serves and how it may be opened and closed and shall be provided with a means to indicate when it is open and when it is closed.

37. BILGE MUD BOXES AND STRUM BOXES.

Bilge suction in the machinery space of every Chapter III 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 of 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 approxi-

sies met 'n deursnee van ongeveer $\frac{3}{8}$ duim en die gesamentlike oppervlakte van sodanige perforasies moet minstens twee maal dié van die ent van die suigpyp wees. Suigkorwe moet so gebou wees dat hulle skoonmaak kan word sonder om enige las van die suigpyp te breek.

38. PEILKOKERS.

In elke skip waarop Hoofstuk II van toepassing is, moet alle tenks wat 'n deel van die skip se bou uitmaak en alle waterdigte afdelings wat nie deel van die masjinerieruimte is nie, voorsien word van doeltreffende peilinrigtings wat, waar nodig, teen beskadiging beskerm moet word. Waar sulke inrigtings uit peilkokers bestaan, moet 'n dik staalverdubbelingsplaat stewig onder elke peilkoker bevestig word om as aanslagplaat vir die peilstand te dien. Al sulke peilkokers moet strek tot by plekke bokant die skip se beskotdek wat te alle tye maklik toeganklik moet wees. Peilkokers vir kimme, kofferdamme en dubbelboomtenks wat kimme, kofferdamme en tenks is wat in die masjinerieruimte geleë is, moet so ver strek tensy die bo-ente van die pype onder gewone omstandighede toeganklik is en toegeus is met krane met parallelproppe met blywend bevestigende handvatsels wat so gelaai is dat hulle die krane outomaties sluit sodra hulle losgelaat word. Peilkokers vir die kimme van geïsoleerde ruime moet geïsoleer wees en 'n deursnee van minstens $2\frac{1}{2}$ duim hê.

HOOFSTUK IV—ELEKTRIESE UITRUSTING EN INSTALLASIES.

39. TOEPASSING VAN HOOFSTUK IV.

Tensy daar in hierdie Hoofstuk anders bepaal word, is hierdie Hoofstuk van toepassing op elke skip van Klas I, II, IIA, V of VI en 'n „Hoofstuk IV-skip” beteken 'n skip waarop hierdie Hoofstuk van toepassing is.

40. ALGEMEEN.

(1) In elke Hoofstuk IV-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.

(2) In elke Hoofstuk IV-skip moet die elektriese uitrusting en installasies met inbegrip van die elektriese aandrywingsmiddels, as daar is, sodanig wees dat die skip en alle persone aan boord teen die gevare van elektrisiteit beskerm is.

41. HOOFONTWIKKELSTELLE: SKEPE VAN KLAS I, II EN IIA.

(1) Elke skip van Klas I, II of IIA wat 'n skip is waarin elektriese krag die enigste krag is tot instandhouding van die hulpdienste wat noodsaaklik is vir die aandrywing of veiligheid van die skip, moet voorsien wees van twee of meer hoofontwikkelstelle met so 'n krag dat die voormelde dienste in stand gehou kan word wanneer enigeen van die stelle buite werking is. Reëlins moet getref word wat sal verhoed dat sulke stelle buite werking raak in die geval van die gedeeltelike oorstrooming van die skip se masjinerieruimte weens lekkasie van 'n beskadigde afdeling, of andersins.

(2) In elke skip van Klas I, II of IIA waar daar slegs een hoofkragstasie is, moet so 'n hoofkragstasie en die hoofskakelbord in dieselfde hoofbrandsone geleë wees. Waar daar meer as een hoofkragstasie en slegs een hoofskakelbord is, moet so 'n skakelbord in dieselfde hoofbrandsone as een van die kragstasies geleë wees.

mately $\frac{3}{8}$ 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.

38. SOUNDING PIPES.

In every ship to which Chapter II applies, 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, cofferdams 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.

39. APPLICATION OF CHAPTER IV.

Unless otherwise indicated in this Chapter, this Chapter applies to every ship of Class I, II, IIA, V or VI, and a "Chapter IV ship" means a ship to which this Chapter applies.

40. GENERAL.

(1) In every Chapter IV 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) In every Chapter IV ship, the electrical equipment and installations, including electrical means of propulsion if any, shall be such that the ship and all persons on board are protected against electrical hazards.

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

(1) Every ship of Class I, II or 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 two or more main generating sets of such power that the aforesaid services can be operated when any one of the sets is 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.

(2) In every ship of Class I, II or IIA, where there is only one main generating station, such main generating station and the main switchboard shall be situated in the same main fire zone. Where there is more than one main generating station, and only one main switchboard, such switchboard shall be situated in the same main fire zone as one of the generating stations.

42. NOODBRON VAN ELEKTRIESE KRAG: SKEPE VAN KLAS I, II EN IIA.

(1) In elke skip van Klas I, II of IIA moet daar op 'n plek bo die beskotdek nie voor die aanvaringsbeskot nie en buitekant die masjineriekaste, 'n selfstandige noodbron van elektriese krag voorsien word. Die posisie van hierdie selfstandige noodbron in verhouding tot die hoofbron of -bronne van elektriese krag moet sodanig wees dat 'n brand of ander beskadiging van die masjineruimte nie die voorsiening of verspreiding van noodkrag sal belemmer nie.

(2) Die noodkragbron wat by subregulasie (1) vereis word, moet in staat wees om gelyktydig vir 'n tydperk van 36 uur, of vir so 'n korter periode as wat die Owerheid in die geval van enige skip wat gereeld op reise van korte duur gebruik word, mag toelaat, die volgende dienste te voorsien—

- (a) die skip se noodlenspomp indien dit elektries werk;
- (b) die skip se waterdigte deure, indien hulle elektries of elektrohidroulies beweeg word tesame met hul aanwysers wat toon of die deure oop of toe is en die waarskuwingseine indien hulle elektries werk;
- (c) die skip se noodligte by elke bootpos op die dek en aan die buiteboorde, in alle deurgange, op trappe en by uitgange, in die masjineruimte, in die beheerposte waar radio-, hoofnavigasie- en sentrale brandverkluijtrusting geleë is en in die plek waar die noodgenerator, as daar een is, geleë is;
- (d) die skip se navigasieligte;
- (e) alle kommunikasieuitrusting, brandverkluijstelsels en seine wat in 'n noodgeval benodig mag word, indien hulle elektries vanaf die skip se hoofontwikkelstelsel bedien word;
- (f) die skip se sprinkelbluspomp, indien dit elektries werk; en
- (g) die skip se dagseinlamp indien dit deur die skip se hoofbron van elektriese krag bedien word.

(3) Die noodbron van elektriese krag kan of 'n opgaarbattery wees wat in staat is om aan subregulasie (2) te voldoen sonder dat dit herlaai word, of 'n oormatige spanningsval toon, of 'n generator wat aangedryf word deur binnebrandmasjinerie met 'n onafhanklike brandstoftoevoer en met doeltreffende aansitnrigtings en die brandstof wat vir sodanige masjinerie voorsien word, moet 'n ontvlammingspunt van minstens 110° F (43° C) hê.

(4) Die noodbron van elektriese krag moet so ingerig wees dat dit doeltreffend sal funksioneer wanneer die skip 'n helling van 22½ grade het en wanneer die trim van die skip 10 grade van gelyklastigheid afwyk.

(5) (a) Indien die noodbron van elektriese krag 'n opgaarbattery is, moet die inrigtings sodanig wees dat die skip se noodverligtingstelsel outomaties in werking sal tree in die geval van 'n fout met die hoofkragbron vir die skip se hoofverligtingstelsel.

(b) Indien die noodbron van elektriese krag 'n generator is, moet 'n opgaarbattery as 'n tydelike bron van elektriese krag voorsien word, en dit moet so ingerig wees dat dit outomaties in werking sal tree in die geval van 'n fout met die hoof- of noodbron van elektriese krag, en 'n voldoende vermoë hê om die skip se noodverligtingstelsel onafgebroke vir 'n halfuur te werk en terwyl sodanige verligtingstelsel in werking is—

- (i) die skip se waterdigte deure toe te maak indien hulle elektries bedien word, maar nie noodwendig om al sodanige deure gelyktydig toe te maak nie;

42. EMERGENCY SOURCE OF ELECTRIC POWER: SHIPS OF CLASSES I, II AND IIA.

(1) In every ship of Class I, II or IIA, there shall be provided in a position above the bulkhead deck not forward of the collision bulkhead and outside the machinery casings, a self-contained emergency source of electric power. The location of this self-contained emergency source in relation to the main source or sources of electric power, shall be such as to ensure that a fire or other casualty to the machinery space will not interfere with the supply or distribution of emergency power.

(2) The emergency source of power required by subregulation (1), shall be capable of operating simultaneously for a period of 36 hours, or for such shorter period as the Authority may permit in the case of any ship regularly engaged on voyages of short duration, the following services—

- (a) the ship's emergency bilge pump, if it is electrically operated;
- (b) the ship's watertight doors, if they are electrically or electro-hydraulically operated, together with their indicators which show if the doors are open or closed, and the warning signals, 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;
- (e) all communication equipment, fire detecting systems and signals which may be required in an emergency, if they are electrically operated from the ship's main generating sets;
- (f) the ship's sprinkler pump, if it is electrically operated; and
- (g) the ship's daylight signalling lamp, if it is operated by the ship's main source of electric power.

(3) The emergency source of electric power shall be either an accumulator (storage) battery capable of complying with subregulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements, and the fuel provided for such machinery shall have a flash point of not less than 110° F. (43° C.).

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

(5) (a) If the emergency source of electric power is an accumulator (storage) 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 electric power is a generator, an accumulator (storage) battery shall be provided as a temporary source of electric power, so arranged as to come into operation automatically in the event of a failure of the main or emergency source of electric power, and of sufficient capacity to operate the ship's emergency lighting system continuously for half an hour and while such lighting system is in operation:—

- (i) to close the ship's watertight doors if they are electrically operated, but not necessarily to close all such doors simultaneously;

- (ii) die aanwysers te bedien wat aantoon of die deure oop of toe is, indien hulle elektries werk;
 - (iii) die geluidseine te bedien wat waarsku dat die kragaangedrewe waterdigte deure op die punt staan om toe te gaan indien sulke geluidseine elektries werk; en
 - (iv) al die kommunikasieuitrusting, brandverklikstelsels en seine wat in 'n noodgeval benodig mag word, te bedien indien hulle elektries vanaf die skip se hoofontwikkelstelsel bedien word.
- (c) Middels moet verskaf word vir die periodieke toetsing van die noodkragbron en die tydelike kragbron, indien een verskaf word, met inbegrip van die toets van outomatiese inrigtings.
- (d) 'n Aanwyser moet in die masjinerieruimte, aan die hoofskakelbord, of op 'n ander geskikte plek, aangebring word om aan te dui wanneer 'n opgaarbattery wat ooreenkomstig hierdie regulasie aangebring is, besig is om af te loop.

43. NOODSKAKELBORDE.

In elke skip van Klas I, II of IIA waarin die voorsiening van 'n noodbron van elektriese krag by hierdie Deel vereis word, moet—

- (a) die noodskakelbord so na aan die noodkragbron geleë wees as wat prakties uitvoerbaar is;
- (b) indien die noodkragbron 'n generator is, die noodskakelbord in dieselfde ruimte as die generator geleë wees, tensy die bediening van die skakelbord daardeur belemmer sal word;
- (c) indien die noodkragbron 'n generator is, 'n koppelvoerder, wat by albei ente behoorlik beskerm is en die hoof- en noodskakelbord verbind, aangebring word;
- (d) geen opgaarbattery wat ooreenkomstig regulasie 42 aangebring is, in dieselfde ruimte as die noodskakelbord geleë wees nie.

44. VERDEELSTELSLS.

(1) In elke Hoofstuk IV-skip moet elke hoof- en noodskakelbord so ingerig word dat dit van agter en van voor maklik toeganklik is sonder gevaar vir enige persoon, en dit moet behoorlik beskerm word. Waar nodig moet 'n nie-geleidende mat of rooster aan die agter- en voorkant aangebring word. Geen blootgestelde dele met 'n spanning van meer as 250 volt gelykstroom of 55 volt wisselstroom tussen die geleiers, of na die aarde, mag aan die voorkant van enige skakelbord of kontrolepaneel aangebring word nie.

(2) Terugleiding deur die romp mag in geen Hoofstuk IV-skip vir die krag, warmte- of ligverspreidingsstelsels daarvan gebruik word nie.

(3) Indien in enige Hoofstuk IV-skip, twee of meer ontwikkelstelsel gelyktydig in werking mag wees vir die instandhouding van die hulpdienste wat noodsaaklik is vir die aandrywing of veiligheid van die skip, moet daar voorsiening gemaak word vir die parallelwerking van die stelsel en middele moet voorsien word om voldoende nie-noodsaaklike las outomaties uit te klink wanneer die totale stroom die gekoppelde generatorvermoë oorskry.

(4) (a) In elke Hoofstuk IV-skip moet elektriese en elektrohidrouliese stuurinrigtings bedien word deur twee stroombane wat vanaf die hoofskakelbord gevoer word en waarvan een deur die noodskakelbord, indien een voorsien word, mag loop. Die kapasiteit van elke stroombaan moet voldoende wees om al die motore wat onder normale omstandighede daaraan verbind is en gelyktydig

- (ii) to operate the indicators, which show if the doors are open or closed, if such indicators are electrically operated;
- (iii) to operate the sound signals, which give warning that power operated watertight doors are about to close, if such sound signals are electrically operated; and
- (iv) to operate all communication equipment, fire detecting systems and signals which may be required in an emergency, if they are electrically operated from the ship's main generating sets.

(c) Means shall be provided for the periodical testing of the emergency source of power and the temporary source of power, if provided, including the testing of automatic arrangements.

(d) An indicator shall be provided in the machinery space, on the main switchboard or at some other suitable position, to show when an accumulator (storage) battery fitted in accordance with this regulation, is being discharged.

43. EMERGENCY SWITCHBOARDS.

In every ship of Class I, II or IIA in which the provision of an emergency source of electric power is required by this Part—

- (a) the emergency switchboard shall be situated as near as practicable to the emergency source of power;
- (b) if the emergency source of power is a generator, the emergency switchboard shall be situated in the same space as the generator, unless the operation of the switchboard would thereby be impaired;
- (c) if the emergency source of power is a generator, an interconnecting feeder, adequately protected at each end, connecting the main and emergency switchboards shall be fitted;
- (d) no accumulator (storage) battery fitted in accordance with regulation 42, shall be situated in the same space as the emergency switchboard.

44. DISTRIBUTION SYSTEMS.

(1) In every Chapter IV ship, every main and emergency switchboard shall be so arranged as to give easy access to the back and the front thereof without danger to any person, and shall be suitably guarded. A non-conducting mat or grating shall be provided at the back and front where necessary. No exposed parts which may have a voltage between conductors or to earth exceeding 250 volts direct current or 55 volts alternating current, shall be installed on the face of any switchboard or control panel.

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

(3) If in any Chapter IV 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 to trip automatically sufficient non-essential load when the total current exceeds the connected generator capacity.

(4) (a) In every Chapter IV ship, electric and electrohydraulic steering gear shall be served by two circuits fed from the main switchboard, one of which may pass through the emergency switchboard, if one is provided. Each circuit shall have adequate capacity for supplying all the motors which are normally connected to it and which operate simultaneously, and if transfer arrange-

werk, te voer en indien daar oordra-inrigtings in die stuur-inrigtingkamer voorsien word om enigeen van die stroombane toe te laat om enige motor of kombinasie motore te voer, moet die kapasiteit van elke stroombaan voldoende wees vir die strafste lastoestand. Die stroombane moet oor hul hele lengte so ver doenlik van mekaar gehou word.

(b) Slegs beskerming teen kortsluitings moet vir sulke stroombane en motore voorsien word.

(c) Elke Hoofstuk IV-skip wat met 'n elektriese of elektro-hidrouliese stuurinrigting toegerus is, moet voorsien word van aanwysers wat sal toon wanneer die krag-eenhede van sodanige stuurinrigting loop. Hierdie aanwysers moet op geskikte plekke op die navigasiebrug en in die masjinerieruimte, of die masjineriekontrolekamer, geleë wees.

(5) Indien, in enige Hoofstuk IV-skip, die kragtoevoer vir 'n outomatiese sprinkelblusstelsel wat minstens twee kragbronne vir seewaterpompe, lugkompressors en outomatiese alarms vereis, elektries is, moet sodanige kragtoevoer van die hoofontwikkelstelsel en van 'n noodbron van elektriese krag verkry word. Een toevoer moet deur die hoofskakelbord geneem word en die ander deur die noodskakelbord deur middel van afsonderlike voerders wat uitsluitlik vir dié doel gehou word. Sulke voerders moet na 'n oorskakelaar naby die sprinkelbluseenheid loop en die skakelaar moet onder normale omstandighede gesluit gehou word na die voerder vanaf die noodskakelbord. Die oorskakelaar moet duidelik gemerk word en geen ander skakelaar word in hierdie voerders toegelaat nie.

(6) Wanneer brandbeveiliging ooreenkomstig regulasie 49 (3) voorsien word in enige Hoofstuk IV-skip waarvan die bobou van aluminiumlegering gebou is, en wanneer die voerders vanaf die noodgenerator na die sprinkelbluseenheid in so 'n skip deur enige ruimte loop wat 'n brandgevaar skep, moet die kables 'n brandvrye tipe wees.

(7) In elke Hoofstuk IV-skip moet die verdeelstelsels so ingerig wees dat 'n brand in enige hoofbrandsone nie die noodsaaklike dienste in enige ander hoofbrandsone sal belemmer nie. Die hoof- en noodvoerders wat deur enige hoofbrandsone loop, moet sowel horisontaal as vertikaal so ver doenlik van mekaar geskei word.

(8) Bedradingstelsels vir binneverbindings wat noodsaaklik is vir veiligheid en vir noodalarmstelsels moet ingerig word om kombuise, masjinerieruimtes en ander omslote ruimtes met 'n hoë brandgevaar te vermy, behalwe vir sover dit nodig is om binne daardie ruimtes verbinding te voorsien of alarm te maak: Met die voorbehoud dat, in die geval van 'n skip waar daar as gevolg van die bou en klein formaat daarvan nie aan hierdie vereiste voldoen kan word nie, reëlens tot tevredenheid van die Owerheid getref moet word om doeltreffende beskerming van bedradingstelsels te verseker waar hulle deur kombuise, masjinerieruimtes en ander omslote ruimtes gaan wat 'n hoë brandgevaar inhou.

45. ALGEMENE VOORSORGMAATREËLS I.V.M. ELEKTRISITEIT.

(1) (a) In elke Hoofstuk IV-skip moet alle elektriese uitrusting so gebou en geïnstalleer word dat daar geen gevaar van besering sal wees vir enige persoon wat dit behoorlik hanteer nie. Onderworpe aan die bepalings van paragraaf (b), moet, wanneer elektriese uitrusting voorsien word as skeepsuitrusting wat onder 'n spanning van meer as 55 volt moet werk, die blootgestelde metaaldele van sodanige uitrusting wat nie bedoel is om 'n hoër spanning as die aarde te hê nie, maar so 'n spanning as gevolg van 'n fout kan hê, geaard word.

ments are provided in the steering gear room to permit either circuit to supply any motor or combination of motors, the capacity of each circuit shall be adequate for the most severe load condition. The circuits shall be separated as widely as is practicable throughout their length.

(b) Short circuit protection only shall be provided for such circuits and motors.

(c) Every Chapter IV ship which is fitted with electric or electro-hydraulic steering gear, shall be provided with indicators which will show when the power units of such steering gear are running. These indicators shall be situated in suitable positions on the navigating bridge and in the machinery space or the machinery control room.

(5) If, in any Chapter IV 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 supplies shall be taken from the main generating sets and from an emergency source of electric power. One supply shall be taken from the main switchboard and another from the emergency switchboard, by separate feeders reserved solely for that purpose. Such feeders shall be run to a change-over switch situated near to the sprinkler unit, and the switch shall normally be kept closed to the feeder from the emergency switchboard. The change-over switch shall be clearly labelled, and no other switch shall be permitted in these feeders.

(6) Where fire protection in accordance with regulation 49 (3) is provided in any Chapter IV ship, the superstructure of which is constructed in aluminium alloy, and where in such a ship the feeders from the emergency generator to the sprinkler unit pass through any space constituting a fire risk, the cables shall be of a fireproof type.

(7) In every Chapter IV ship, distribution systems shall be so arranged that a fire in any main fire zone will not interfere with essential services in any other main fire zone. Main and emergency feeders passing through any main fire zone, shall be separated as widely as is practicable both horizontally and vertically.

(8) Wiring systems for interior communications essential for safety and for emergency alarm systems shall be arranged to avoid galleys, machinery spaces and other enclosed spaces having a high risk of fire except in so far as it is necessary to provide communication or to give alarm within those spaces: Provided that in the case of a ship the construction and small size of which do not permit of compliance with this requirement, measures satisfactory to the Authority shall be taken to ensure efficient protection for wiring systems where they pass through galleys, machinery spaces and other enclosed spaces having a high risk of fire.

45. GENERAL ELECTRICAL PRECAUTIONS.

(1) (a) In every Chapter IV ship, all electrical equipment shall be so constructed and installed that there will be no danger of injury to any person handling it in a proper manner. Subject to the provisions of paragraph (b), where electrical equipment supplied as ship's equipment is to be operated at a voltage in excess of 55 volts, the exposed metal parts of such 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.

(b) Blootgestelde metaaldele van draagbare elektriese lampe, gereedskap en dergelike apparate wat voorsien is as skeepsuitrusting wat onder 'n spanning van meer as 55 volt moet werk, moet geaard wees deur 'n geleier in die toevoerkabel tensy daar deur die gebruik van dubbele isolering of 'n geskikte isoleertransformator beveiliging verleen word wat minstens net so doeltreffend as aarding deur 'n geleier is. Wanneer elektriese lampe, gereedskap en ander apparate in klam ruimtes gebruik word, moet daar, so ver doenlik, voorsiening gemaak word om te verseker dat die gevaar van elektriese skok tot 'n minimum beperk word.

(2) Elke elektriese kabel in 'n Hoofstuk IV-skip moet 'n vlamvertragende tipe wees. Alle metaalmantels en -pantsering van enige elektriese kabel wat in die skip in gebruik is, moet elektries deurlopend en geaard wees. Elke elektriese kabel sonder 'n metaalmantel of -pantsering wat geïnstalleer is op 'n plek waar sy faling 'n brand of ontploffing kan veroorsaak, moet andersins doeltreffend beveilig wees.

(3) Die bedrading in elke Hoofstuk IV-skip moet op so 'n wyse ondersteun word dat dit nie sal skaaf of andersins beskadig word nie.

(4) In elke Hoofstuk IV-skip moet die lasse in alle elektriese geleiers slegs in aansluit- of uitlaatkaste gemaak word, behalwe in die geval van laagspanningsverbindingstroombane. Al sulke aansluit- of uitlaatkaste moet so gemaak wees dat die verspreiding van brand daarvandaan voorkom sal word.

(5) In elke Hoofstuk IV-skip moet die ligtoebehore so gemonteer word dat temperatuurstygings wat nadelig vir die elektriese bedrading daarvan sal wees, of 'n brandgevaar in die omliggende materiaal kan skep, voorkom sal word.

(6) Elke elektriese ruimteverwarmer wat 'n deel van 'n Hoofstuk IV-skip se uitrusting uitmaak, moet op 'n plek bevestig word en so gebou 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 geskroei of aan die brand gesteek kan word nie.

(7) In elke Hoofstuk IV-skip moet elke afsonderlike stroombaan behalwe 'n stroombaan wat die skip se stuur-inrigting bedien, teen oorbelasting en kortsluiting beskerm word. Die stroomdra vermoë van die stroombaan wat dit beskerm en die ontwerpvermoë of stelling van die toestel moet duidelik en blywend op of naby elke beskermings-toestel teen oorbelasting aangedui word.

(8) In elke Hoofstuk IV-skip moet alle opgaarbatterye gehuisves word in kaste of afdelings wat so gebou is dat die batterye teen beskadiging beskerm word en so geventileer is dat die ophoping van ontplofbare gas tot die minimum beperk word.

(9) In ruimtes waar ontvlambare mengsels moontlik kan versamel mag geen elektriese uitrusting geïnstalleer word nie tensy dit 'n tipe is wat nie die betrokke mengsel aan die brand sal steek nie.

(10) In elke Hoofstuk IV-skip, moet elke verligtingstroombaan in 'n bunker of ruim van 'n isoleerskakelaar buite die ruimte voorsien word.

46. RESERWEDELE EN GEREEDSKAP.

Elke skip van Klas I, II of IIA moet voorsien word van 'n toereikende hoeveelheid vervangdele vir dié dele 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 onklaarraking

(b) Exposed metal parts of portable electric lamps, tools and similar apparatus, supplied as ship's equipment to be operated at a voltage in excess of 55 volts, shall be earthed through a conductor in the supply cable, unless by the use of double insulation or a suitable isolating transformer, protection at least as effective as earthing through a conductor is provided. When electric lamps, tools or other apparatus are used in damp spaces, provision shall be made, so far as practicable, to ensure that the danger of electric shock is reduced to a minimum.

(2) Every electric cable in a Chapter IV ship, shall be of a flame retarding type. All metal sheaths and metal armour of any electrical cable in use in the ship, shall be electrically continuous and shall be earthed. Every electric cable which is neither metal sheathed nor armoured shall, if installed where its failure might cause a fire or explosion, be otherwise effectively protected.

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

(4) In every Chapter IV 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) In every Chapter IV ship, lighting fittings shall be arranged to prevent rises in temperature which would be injurious to the electrical wiring thereof or which would result in a risk of fire in surrounding material.

(6) Every electric space-heater forming part of the equipment of a Chapter IV 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 Chapter IV ship, every separate electrical circuit, other than a circuit which operates the ship's steering gear, shall be protected against overload and short circuit. There shall be clearly and permanently indicated on or near each over-load protective device, the current carrying capacity of the circuit which it protects and the rating or setting of the device.

(8) In every Chapter IV ship, all accumulator (storage) 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 minimize the accumulation of explosive gas.

(9) In spaces where inflammable mixtures are liable to collect, no electrical equipment shall be installed unless it is of a type which will not ignite the mixture concerned.

(10) In every Chapter IV ship, every lighting circuit in a bunker or hold shall be provided with an isolating switch outside the space.

46. SPARE PARTS AND TOOLS.

Every ship of Class I, II or IIA shall be provided with an adequate quantity of replacements for those parts of the ship's electrical equipment and installations which, having regard to the intended service of the ship, it would be essential for the safety of the ship and of per-

terwyl die skip op see is, noodsaaklik sal 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 vervangdele.

HOOFSTUK V—BRANDBEVEILIGING: SKEPE VAN KLAS I, II EN IIA.

47. TOEPASSING VAN HOOFSTUK V.

Hierdie Hoofstuk is van toepassing op elke skip van Klas I, II of IIA wat meer as 36 passasiers vervoer, en 'n „Hoofstuk V-skip” beteken 'n skip waarop hierdie Hoofstuk van toepassing is.

48. BRANDBEVEILIGINGSMETODES.

Die akkommodasie- en diensruimtes in elke Hoofstuk V-skip moet gebou word ooreenkomstig enigeen van die volgende metodes van brandbeveiliging of 'n kombinasie daarvan, en moet voldoen aan sodanige van die volgende vereistes van hierdie Hoofstuk as wat van toepassing is op die metode of metodes wat gevolg word:

Metode I: Die bou in die akkommodasie- en diensruimtes van 'n stelsel van binnebeskotte bestaande uit Klas B-verdelings tesame met 'n outomatiese brandalarm- en brandverklikstelsel in hierdie ruimtes.

Metode II: Die aanbring van 'n outomatiese sprinkelblus-, brandverklik- en brandalarmstelsel in die akkommodasie- en diensruimtes.

Metode III: Die verdeling van die akkommodasie- en diensruimtes deur Klas A en Klas B-verdelings tesame met die aanbring van 'n outomatiese brandalarm- en brandverklikstelsel in alle akkommodasie- en diensruimtes en 'n beperking op die voorsiening van brandbare materiaal in hierdie ruimtes.

BOUWERK.

49. METODE I, II EN III.

(1) Elke Hoofstuk V-skip moet gebou word ooreenkomstig een van die volgende metodes van brandbeveiliging of 'n kombinasie van twee of meer van sodanige metodes.

(2) *Metode I:*

(a) Die romp, bobou, strukturele beskotte, dekke en dekhuse moet van staal of ander ekwivalente materiaal gebou wees.

(b) Die kruine en mantels van ketel- en masjinerie-ruimtes moet van staal gebou en behoorlik geïsoleer wees en die openings daarin, as daar is, moet behoorlik ingerig en beskerm wees om die verspreiding van brand te verhoed.

(3) *Metode II:*

(a) Die romp, bobou, strukturele beskotte, dekke en dekhuse moet van staal of ander ekwivalente materiaal gebou wees. Die gebruik van alle soorte brandbare materiale moet in dié mate wat dit redelik en prakties uitvoerbaar is, verminder word.

(b) Wanneer die bobou van aluminiumlegering gebou is, moet—

(i) die temperatuurstyging van die metaalkerns van die Klas A-verdelings, by onderwerping aan die standaardbrandtoets van 60 minute, met die meganiese eienskappe van die materiaal verband hou;

sons 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.

47. APPLICATION OF CHAPTER V.

This Chapter applies to every ship of Class I, II or IIA carrying more than 36 passengers, and a “Chapter V ship” means a ship to which this Chapter applies.

48. METHODS OF FIRE PROTECTION.

The accommodation spaces and service spaces in every Chapter V ship, shall be constructed in accordance with any one of the following methods of fire protection, or a combination thereof, and shall comply with such of the following requirements of this Chapter as are applicable to the method or methods 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 fitting 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.

STRUCTURE.

49. METHODS I, II AND III.

(1) Every Chapter V ship shall be constructed in accordance with one of the following methods of fire protection or a combination of two or more of such methods.

(2) *Method I:*

(a) The hull, superstructure, structural bulkheads, decks and deckhouses shall be constructed of steel or other equivalent material.

(b) Crowns and casings of boiler and machinery spaces shall be of steel construction, adequately insulated, and the openings therein, if any, shall be suitably arranged and protected to prevent spread of fire.

(3) *Method II:*

(a) The hull, superstructure, structural bulkheads, decks and deckhouses shall be constructed of steel or other equivalent material. The use of combustible materials of all kinds shall be reduced as far as is reasonable and practicable.

(b) Where the superstructure is constructed of aluminium alloy—

(i) the temperature rise of the metallic cores of the “A” Class divisions, when exposed to a standard fire test of 60 minutes duration, shall have regard to the mechanical properties of the material;

- (ii) 'n outomatiese sprinkelstelsel wat voldoen aan die vereistes van regulasie 57 (2) geïnstalleer word;
- (iii) voldoende voorsiening gemaak word om te verseker dat die inrigtings vir die stuwings en tewaterlating van en inskeping in reddingsvaartuie in die geval van brand net so doeltreffend bly as wanneer die bobou van staal gebou is;
- (iv) die kruine en mantels van ketel- en masjinerieruimtes van staal gebou en behoorlik geïsoleer wees en die openings daarin, as daar is, behoorlik ingerig en beskerm wees om die verspreiding van brand te verhoed.

(4) *Metode III:*

- (a) Die romp, bobou, strukturele beskotte, dekke en dekhuse moet van staal of ander ekwivalente materiaal gebou wees.
- (b) Wanneer die bobou van aluminiumlegering gebou is, moet—
 - (i) die temperatuurstyging van die metaalkerns van die Klas A-verdelings, by onderwerping aan die standaardbrandtoets van 60 minute, met die meganiese eienskappe van die materiaal verband hou;
 - (ii) die plafonne van onbrandbare materiaal wees;
 - (iii) voldoende voorsiening gemaak word om te verseker dat die inrigtings vir die stuwings en tewaterlating van en inskeping in reddingsvaartuie in die geval van brand net so doeltreffend bly as wanneer die bobou van staal gebou is;
 - (iv) die kruine en mantels van ketel- en masjinerieruimtes van staal gebou en behoorlik geïsoleer wees en die openings daarin, as daar is, behoorlik ingerig en beskerm wees om die verspreiding van brand te verhoed.

(5) Wanneer die akkommodasie- en diensruimtes in die skip ooreenkomstig 'n kombinasie van enige van die voorgaande metodes gebou word, is die vereistes wat betref die bou van enige deel van die skip dié wat van toepassing is op die metode van brandbeveiliging wat in daardie deel van die skip toegepas word.

50. VERTIKALE HOOFSONES.

(1) Die romp, bobou en dekhuse van elke Hoofstuk V-skip moet deur beskotte bestaande uit Klas A-verdelings in vertikale hoofsones ingedeel word. Die gemiddelde lengte van elke sone bo die beskotdek mag nie 131 voet oorskry nie. Trapsgewyse versprings en nisse moet tot 'n minimum beperk word, maar dié wat noodsaaklik is, moet uit klas A-verdelings bestaan: Met die voorbehoud dat, in die geval van 'n skip waarin Metode III van brandbeskerming gevolg word, bykomende Klas A-verdelings binne die akkommodasieruimtes voorsien moet word ten einde die gemiddelde lengte van die vertikale hoofsones in hierdie ruimtes te verminder tot omtrent 65.5 voet.

(2) Enige gedeeltes van die verdelings waarna in subregulasie (1) verwys word, wat bo die beskotdek strek, moet, waar moontlik, in 'n lyn lê met die waterdigte indelingsbeskotte wat onmiddellik onder 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.

- (ii) an automatic sprinkler system complying with the requirements of regulation 57 (2) shall be installed;
- (iii) adequate provision shall be made to ensure that in the event of fire, arrangements for the stowage and launching of and the embarkation into survival craft remain as effective as if the superstructure were constructed of steel;
- (iv) crowns and casings of boiler and machinery spaces shall be of steel construction adequately insulated and the openings therein, if any, shall be suitably arranged and protected to prevent spread of fire.

(4) *Method III:*

- (a) The hull, superstructure, structural bulkheads, decks and deckhouses, shall be constructed of steel or other equivalent material.
- (b) Where the superstructure is constructed of aluminium alloy—
 - (i) the temperature rise of the metallic cores of the "A" Class divisions, when exposed to a standard fire test of 60 minutes duration, shall have regard to the mechanical properties of the material;
 - (ii) ceilings shall be of incombustible material;
 - (iii) adequate provision shall be made to ensure that in the event of fire, arrangements for the stowage and launching of and embarkation into survival craft remain as effective as if the superstructure were constructed of steel;
 - (iv) crowns and casings of boiler and machinery spaces shall be of steel construction adequately insulated and the openings therein, if any, shall be suitably arranged and protected to prevent spread of fire.

(5) Where the accommodation and service spaces in the ship are constructed in accordance with a combination of any of the foregoing methods, the requirements as to the structure of any part of the ship shall be those appropriate to the method of fire protection adopted in that part of the ship.

50. MAIN VERTICAL ZONES.

(1) The hull, superstructure and deckhouses 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. Steps and recesses shall be kept to a minimum, but any which are necessary shall consist of "A" Class divisions. Provided that in the case of a ship in which Method III of fire protection has been adopted, additional "A" Class divisions shall be provided within the accommodation spaces in order to reduce in these spaces the mean length of the main vertical zones to about 65.5 feet.

(2) Any portions of the divisions referred to in subregulation (1) which extend above the 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.

51. KLAS A- EN B-VERDELINGS.

(1) Elke Klas A-verdeling wat by hierdie Deel vereis word, moet van staal of ander ekwivalente materiaal gebou wees, in elke geval so verstyf dat dit in staat is om die deurgang van rook en vlamme tot aan die einde van 'n standaardbrandtoets van 60 minute te verhoed. Die verdeling moet 'n toereikende isoleerwaarde hê met inagneming van die aard van die ruimtes wat daaraan grens en as die verdeling tussen ruimtes is waarvan engeen aangrensende brandbare materiaal bevat, moet dit so isoleer wees dat indien een van die twee kante van die verdeling aan 'n standaardbrandtoets van 60 minute blootgestel word, die gemiddelde temperatuur aan die kant van die verdeling wat nie blootgestel is nie, op geen tydstop gedurende die toets meer as 250° F. (139° C.) bo die begintemperatuur aan daardie kant sal styg nie, en die temperatuur op geen plek op die oppervlak, met inbegrip van enige naat, meer as 325° F. (180° C.) bo die begintemperatuur sal styg nie.

(2) Elke Klas B-verdeling wat by hierdie Deel vereis word, moet in staat wees om die deurgang van vlamme tot aan die einde van 'n standaardbrandtoets van 30 minute te verhoed. Elke sodanige verdeling moet 'n toereikende isoleerwaarde hê met inagneming van die ruimtes wat daaraan grens. Die verdeling moet so gebou wees dat indien een van die twee kante daarvan aan 'n standaardbrandtoets van 30 minute blootgestel word, die gemiddelde temperatuur aan die kant van die verdeling wat nie blootgestel is nie, op geen tydstop gedurende die eerste 15 minute van die toets in die geval van 'n onbrandbare verdeling, of die duur van die toets in die geval van 'n brandbare verdeling, meer as 250° F. (139° C.) bo die begintemperatuur aan daardie kant sal styg nie, en die temperatuur op geen plek daarop, met inbegrip van enige naat, meer as 405° F. (225° C.) bo die begintemperatuur sal styg nie.

52. OPENINGS IN KLAS A-VERDELINGS.

(1) Indien, in enige Hoofstuk V-skip, enige Klas A-verdeling deurboor word vir die lê van elektriese kables, pype, kokers, lêers of balke, of vir ander doeleindes, moet die inrigting sodanig wees dat die doeltreffendheid van die verdeling om brand te weerstaan nie daardeur benadeel word nie.

(2) Waar 'n leiding noodwendig deur 'n vertikale hoofsonesbeskot gaan, moet 'n faaltrae selfsluitende branddemper teenaan die beskot aangebring word. Die demper moet van albei kante van die beskot ook met die hand toegemaak kan word. Die bedienplek moet geredelik toeganklik wees en in rooi ligweerkatsende kleur gemerk word. Die leiding tussen die beskot en die demper moet van staal of 'n ander ekwivalente materiaal wees en indien nodig, moet dit 'n isoleringstandaard hê wat aan die bepalings van subregulasie (1) voldoen. Die demper moet aan minstens een kant van die beskot toegerus wees met 'n sigbare aanwyser wat toon of die demper oop is.

Met die voorbehoud dat die volgende bykomende bepalings geld in die geval van ventilasiekokers en -leidings met 'n deursneeoppervlakte van 31 vierkante duim of meer wat deur hoofsoneverdelings gaan:

- (a) vir kokers en leidings met deursneeoppervlaktes tussen 31 vierkante duim en 116 vierkante duim, beide syfers ingesluit, moet branddempers van die faaltrae selfsluitende tipe wees of moet sodanige kokers en leidings vir minstens 18 duim aan beide kante van die verdeling geïsoleer wees om te voldoen aan die betrokke vereistes vir beskotte;
- (b) vir kokers en leidings met 'n deursneeoppervlakte wat meer is as 116 vierkante duim, moet branddempers van die faaltrae selfsluitende tipe wees.

51. "A" AND "B" CLASS DIVISIONS.

(1) Every "A" Class division required by this Part shall be constructed of steel or other equivalent 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 point on the face, including any joint, rise 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 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 at any time during the first 15 minutes of the test in the case of an incombustible division or the duration of the test in the case of a combustible division by more than 250° F. (139° C.) above the initial temperature on that face, nor shall the temperature at any one point thereon, including any joint, increase by more than 405° F. (225° C.) above the initial temperature.

52. 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) Where of necessity, a duct passes through a main vertical zone bulkhead, a fail-safe automatic closing fire damper shall be fitted adjacent to the bulkhead. The damper shall also be capable of being manually closed from both sides of the bulkhead. The operating position shall be readily accessible and be marked in red light-reflecting colour. The duct between the bulkhead and the damper shall be of steel or other equivalent material and, if necessary, to an insulating standard such as to comply with sub-regulation (1). The damper shall be fitted on at least one side of the bulkhead with a visible indicator showing if the damper is in the open position.

Provided that, in the case of ventilation trunks and ducts having a cross-sectional area of 31 square inches or more which pass through main zone divisions, the following additional provisions shall apply—

- (a) for trunks and ducts having cross-sectional areas between 31 square inches and 116 square inches inclusive, fire dampers shall be of a fail-safe automatic closing type, or such trunks and ducts shall be insulated for at least 18 inches on each side of the division to meet the applicable bulkhead requirements;
- (b) for trunks and ducts having a cross-sectional area exceeding 116 square inches, fire dampers shall be of a fail-safe automatic closing type.

(3) Met die uitsondering van laaiopenings en luuke tussen vrag-, pak- en bagasieruimtes en tussen sulke ruimtes en die oop dekke, moet alle openings voorsien word van sluitingsmiddels wat blywend bevestig is en wat, sover doenlik, net so brandvas is as die verdelings waarin hulle aangebring word. Waar Klas A-verdelings deur laaiopeninge deurboor word, moet die sluitingsmiddels staalplate wees. Branddeure moet uit staal of 'n ekwivalente materiaal gemaak wees met of sonder onbrandbare isolering.

(4) Die konstruksie van alle deure en deurrame in Klas A-verdelings asook die middels om hulle te bevestig wanneer hulle toe is, moet vir sover moontlik net so bestand teen brand en net so rook- en vlamdig wees as die beskotte waarin die deure aangebring is. Met die voorbehoud dat 'n waterdige deur nie geïsoleer hoef te word nie.

(5) Enige deur in 'n Klas A-verdeling moet so gebou wees dat dit van weerskante van die verdeling deur een persoon oopgemaak en toegemaak kan word.

(6) Branddeure in vertikale hoofsonebeskotte en trapomsluitings, uitgesonderd waterdige deure met kragbediening en deure wat gewoonlik gesluit is, moet van die selfsluitende tipe wees en in staat wees om toe te gaan al word hulle ook deur 'n helling van $3\frac{1}{2}$ grade teëgewerk. Alle sodanige deure, behalwe dié wat gewoonlik toe is, moet van so 'n aard wees dat hulle gelyktydig of in groepe van 'n beheerpos en ook afsonderlik van 'n posisie by die deur vrygestel kan word. Die vrystelmeganisme moet so ontwerp wees dat die deur outomaties sal toe gaan indien die beheerstelsel defek raak: Met die voorbehoud dat goedgekeurde waterdige deure met kragbediening vir hierdie doel aanvaarbaar geag word. Terughouhake wat nie van die beheerpos af vrygestel kan word nie, is verbied. Wanneer dubbele swaaidure toegelaat word, moet hulle 'n knipinrigting hê wat outomaties inskakel deur die werking van die deur se vrystelsel.

53. OPENINGS IN KLAS B-VERDELINGS : MÉTODE I EN III.

(1) Indien in enige Hoofstuk V-skip, behalwe 'n skip waarin Metode II vir brandbeveiliging toegepas word, enige Klas B-verdeling deurboor word vir die lê van elektriese kables, pype, kokers, lêers of balke, of vir ander doeleindes, moet die inrigting sodanig wees dat die doeltreffendheid van die verdeling om brand te weerstaan, nie daardeur benadeel word nie.

(2) In elke skip waarna in subregulasie (1) verwys word, moet enige deur- of dergelike opening in 'n Klas B-verdeling 'n deur hê wat blywend bevestig is en net so brandvas soos die verdeling self is.

(3) In elke skip waarna in subregulasie (1) verwys word, moet die getal ventilasieopenings in sulke verdelings tot 'n minimum beperk word. Sulke openings moet, vir sover dit redelik prakties uitvoerbaar is, slegs in of onder deure aangebring word en waar so 'n opening in 'n deur gesny word, moet dit in die onderste gedeelte van die deur wees en voorsien wees van 'n sierrooster van onbrandbare materiaal.

54. BESKOTTE BINNE VERTIKALE HOOFSONES : MÉTODE I EN III.

(1) Metode I:

(a) Elke beskotte binne die akkommodasie- of diensruimtes van 'n Hoofstuk V-skip waarin Metode I vir brandbeveiliging toegepas word, wat nie 'n beskotte is wat by hierdie Deel vereis word om uit Klas A-verdelings te bestaan nie, moet bestaan uit

(3) Except for tonnage openings and for hatches between cargo, store and baggage spaces, and between such spaces and the weather decks, all openings shall be provided with permanently attached means of closing which shall be, as far as practicable, of equal fire resistance to the divisions in which they are fitted. Where "A" Class divisions are pierced by tonnage openings, the means of closure shall be by steel plates. Fire doors shall be constructed of steel or equivalent material with or without incombustible insulation.

(4) The construction of all doors and door frames in "A" Class divisions, with the means of securing them when closed, shall provide resistance to fire as well as to the passage of smoke and flame as far as practicable equivalent to that of the bulkheads in which the doors are situated. Provided that a watertight door shall not be required to be insulated.

(5) 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.

(6) Fire doors in main vertical zone bulkheads and stairway enclosures, other than power operated watertight doors and those which are normally locked, shall be of the self-closing type capable of closing against an inclination of $3\frac{1}{2}$ degrees opposing closure. All such doors, except those which are normally closed, shall be capable of release from a control station, either simultaneously or in groups, and also individually from a position at the door. The release mechanism shall be so designed that the door will automatically close in the event of disruption of the control system: Provided that approved power operated watertight doors shall be considered acceptable for this purpose. Hold-back hooks, not subject to control station release, shall not be permitted. When double swing doors are permitted, they shall have a latch arrangement which is automatically engaged by the operation of the door release system.

53. OPENINGS IN "B" CLASS DIVISIONS: METHODS I AND III.

(1) If in any Chapter V ship, other than a ship in which Method II of fire protection has been adopted, any "B" 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) In every ship referred to in sub-regulation (1), any doorway or similar opening in a "B" Class division shall have a permanently attached door which shall provide resistance to fire equivalent to that of the division itself.

(3) In every ship referred to in sub-regulation (1), the number of ventilation openings in such divisions shall be kept to a minimum. Such openings shall, so far as is reasonably practicable, be provided only in or under doors and where such an opening is cut in a door, it shall be in the lower part of the door and shall be fitted with a grille constructed of incombustible material.

54. BULKHEADS WITHIN MAIN VERTICAL ZONES: METHODS I AND III.

(1) Method I:

(a) Every bulkhead within the accommodation spaces or service spaces of a Chapter V 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

Klas B-verdelings wat van onbrandbare materiaal gebou is, maar kan, onderworpe aan die bepalings van regulasie 55 (1) (b) en (c), met brandbare materiaal beklee word.

- (b) Elke beskot waarna in paragraaf (a) verwys word, moet van dek tot dek strek. Met die voorbehoud dat 'n beskot, behalwe 'n gangbeskot, kan eindig by 'n plafon van onbrandbare materiaal wat die brandintegriteit van die beskot sal handhaaf.
- (c) Wanneer die skip se huidbeplating die grens van 'n akkommodasie- of diensruimte vorm, moet die aangrensende dwarsbeskotte tot by die huidbeplating strek. Wanneer die buitebeplating van 'n dekhuis die grens van 'n akkommodasie- of diensruimte vorm, moet die aangrensende dwars- of langsbeskotte tot by die buitebeplating strek. Met die voorbehoud dat enige sodanige beskot, behalwe 'n gangbeskot, kan eindig by 'n bekleding van onbrandbare materiaal wat die brandintegriteit van die beskot sal handhaaf.

(2) *Metode III:*

- (a) Insluitingsbeskotte binne die akkommodasie- en diensruimtes van elke Hoofstuk V-skip waarin Metode III vir brandbeveiliging toegepas word, wat nie beskotte is wat by hierdie Deel vereis word om van Klas A-verdelings te bestaan nie, moet gebou word van Klas B-verdelings wat van onbrandbare materiaal gemaak moet wees, maar kan, onderworpe aan die bepalings van regulasie 55 (2) (a) en (b), met brandbare materiaal beklee wees. Die Klas B-verdelings moet so gerangskik wees dat hulle 'n ononderbroke netwerk van sulke verdelings vorm of, saam met sodanige beskotte as wat van Klas A-verdelings gebou is, 'n ononderbroke netwerk van Klas A- en Klas B-verdelings. Die oppervlakte van 'n enkele afdeling deur so 'n netwerk gevorm, mag nie 1,600 vierkante voet oorskry nie en waar dit prakties uitvoerbaar is, mag dit nie 1,300 vierkante voet oorskry nie.
- (b) In elke skip waarna in paragraaf (a) verwys word, moet elke openbare kamer wat 'n ruimte met 'n groter oppervlakte as 1,600 vierkante voet, behalwe by die huidbeplating van die skip, of die buitebeplating van 'n dekhuis, omring wees deur beskotte bestaande uit onbrandbare Klas B-verdelings, tensy die beskotte wat die vertrek insluit, by hierdie Deel vereis word om uit Klas A-verdelings te bestaan.
- (c) In elke skip waarna in paragraaf (a) verwys word, moet elke gangbeskot uit Klas B-verdelings bestaan, tensy dit by hierdie Deel vereis word om uit Klas A-verdelings te bestaan, en dit moet van dek tot dek strek. Waar sulke Klas B-verdelings nie die onbrandbare tipe is nie, moet hulle onbrandbare kerns hê of 'n gemonteerde tipe wees met binnelae van asbesplaat of soortgelyke onbrandbare materiaal. Indien plafonne aangebring word, moet hulle van onbrandbare materiaal wees.
- (d) In elke skip waarna in paragraaf (a) verwys word, moet elke Klas B-beskot, behalwe 'n gangbeskot, van dek tot dek strek. Met die voorbehoud dat enige sodanige beskot mag eindig by 'n plafon van sodanige onbrandbare materiaal as wat die integriteit van die beskot sal handhaaf.
- (e) In elke skip waarna in paragraaf (a) verwys word waar die skip se huidbeplating die grens van 'n akkommodasie- of 'n diensruimte vorm, moet enige Klas B-beskot wat daaraan grens, tot by die huidbeplating strek. Waar die buitebeplating van die dekhuis die grens van 'n akkommodasie- of 'n

divisions which shall be constructed of incombustible material but may, subject to the provisions of regulation 55 (1) (b) and (c), be faced with combustible material.

- (b) Every bulkhead referred to in paragraph (a) shall extend from deck to deck. Provided that a bulkhead, other than a corridor bulkhead, may terminate at a ceiling consisting of incombustible material such as to maintain the integrity of the bulkhead.
- (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 such as to maintain the integrity of the bulkhead.

(2) *Method III:*

- (a) Enclosure bulkheads within the accommodation spaces and service spaces of every Chapter V ship in which Method III of fire protection has been adopted, not being bulkheads required by this Part to consist of "A" Class divisions, shall be constructed of "B" Class divisions which shall be of incombustible material but may, subject to the provisions of regulation 55 (2) (a) and (b), be faced with combustible material. The "B" Class divisions shall be arranged so as to form a continuous network of such 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) In every ship referred to in paragraph (a), every public room being a space larger than 1,600 square feet in area shall, except at the shell plating of the ship or the external plating of a deckhouse, be bounded by bulkheads consisting of incombustible "B" Class divisions, unless the bulkheads enclosing the room are required by this Part to consist of "A" Class divisions.
- (c) In every ship referred to in paragraph (a), every corridor bulkhead 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. Where such "B" Class divisions are not of the incombustible type, they shall have incombustible cores or shall be of an assembled type having internal layers of sheet asbestos or similar incombustible material. Ceilings, if fitted, shall be of incombustible material.
- (d) In every ship referred to in paragraph (a), every "B" Class bulkhead, other than a corridor bulkhead, shall extend from deck to deck. Provided that any such bulkhead may terminate at a ceiling consisting of incombustible material such as to maintain the integrity of the bulkhead.
- (e) In every ship referred to in paragraph (a), where the ship's shell plating forms the boundary of an accommodation space or a service space, any "B" Class bulkhead adjacent thereto shall extend to the shell plating. Where the external plating of the deckhouse forms the boundary of an accommodation space or service space, any adjacent transverse

diensruimte vorm, moet enige aangrensende dwars- of langsbeskot van Klas B tot by die buitebeplating strek. Met die voorbehoud dat enige sodanige beskot, behalwe 'n gangbeskot mag eindig by sodanige bekleding van onbrandbare materiaal as wat die integriteit van die beskot sal handhaaf.

- (f) In elke skip waarna in paragraaf (a) verwys word, kan die isolering van Klas A- en Klas B-verdelings, behalwe dié wat die skeiding vorm van die vertikale hoofsones, die beheerposte, die trapomsluitings en die gange, weggelaat word wanneer die verdelings die buitekantste deel van die skip vorm, of wanneer die aangrensende afdeling nie 'n brandgevaar bevat nie.

55. BEPERKING VAN ONBRANDBARE MATERIAAL, ENS. METODE I EN III.

(1) Metode I:

- (a) In elke Hoofstuk V-skip waarin Metode I vir brandbeveiliging toegepas word, moet alle binnebekledings, hegstukke, plafonne en isolering uit onbrandbare materiaal bestaan, behalwe in vragruimtes, poskamers, kamers vir staafgoud en -silwer, bagasiekamers en verkoelde pakkamers.
- (b) In elke skip waarna in paragraaf (a) verwys word, moet die totale volume van brandbare materiaal wat as bekledings, lyste, versierings of fineer in enige akkommodasie- of diensruimte aangebring is, nie 'n volume gelyk aan dié van 'n fineer van een-tiende van 'n duim op die gekombineerde oppervlakte van die mure en plafon van so 'n ruimte oorskry nie.
- (c) In elke skip waarna in paragraaf (a) verwys word, moet alle blootgestelde oppervlakke in gange en trapomsluitings sodanig wees dat die oppervlakverspreiding van vlamme nie oorskry sal word nie.

(2) Metode III:

- (a) In elke Hoofstuk V-skip waarin Metode III vir brandbeveiliging toegepas word, moet die voorsiening van brandbare materiaal vir binnebekledings, hegstukke, plafonne, toebehore en beslag in enige ruimte in die akkommodasie- of diensruimtes beperk word tot die minimum wat verenigbaar is met die gebruik waarvoor daardie ruimte toegevoeg is. In die openbare kamers in so 'n skip moet die hegstukke en steune vir die binnebekledings en plafonne gebou wees van staal of ander materiaal wat ewe doeltreffend is vir die beperking van brand.
- (b) In elke skip waarna in paragraaf (a) verwys word, moet alle blootgestelde oppervlakke en hulle bedekkings van gang- en kajuitbeskotte in akkommodasie-ruimtes oor beperkte vlamverspreidingsvermoë beskik. Alle ander blootgestelde oppervlakke in gange en trapomsluitings moet sodanig wees dat die oppervlakverspreiding van vlamme nie oorskry sal word nie.

56. AUTOMATIES BRANDALARM- EN BRANDVERKLIKSTELS: METODE I EN III.

- (1) In elke Hoofstuk V-skip waarin Metode I of Metode III vir brandbeveiliging toegepas word, moet daar 'n brandalarm- en -verklikstelsel geïnstalleer word wat die aanwesigheid of die tekens van 'n brand en die posisie daarvan in enige akkommodasie- of diensruimte sal verklik.

- (2) Elke brandverklikstelsel wat ooreenkomstig die bepalinge van hierdie Deel geïnstalleer is, moet in staat wees om die aanwesigheid of die tekens van 'n brand en die posisie daarvan outomaties op die navigasiebrug of by

or longitudinal "B" Class bulkhead 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 such as to maintain the integrity of the bulkhead.

- (f) In every ship referred to in paragraph (a), the insulation of "A" Class and "B" Class divisions, except those constituting the separation of the main vertical zones, the control stations, the stairway enclosures and the corridors, may be omitted where the divisions form the outside part of the ship or where the adjoining compartment does not contain a fire hazard.

55. RESTRICTION OF COMBUSTIBLE MATERIAL, ETC.: METHODS I AND III.

(1) Method I:

- (a) In every Chapter V 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.
- (b) In every ship referred to in paragraph (a), the total volume of combustible materials installed as facings, mouldings, decorations or veneers in any accommodation space or service space, shall not exceed a volume equal to that of a veneer of one tenth of an inch on the combined area of the wall and ceiling of such space.
- (c) In every ship referred to in paragraph (a) all exposed surfaces in corridors and stairway enclosures, shall be such that the surface spread of flame will not be exceeded.

(2) Method III:

- (a) In every Chapter V ship in which Method III of fire protection has been adopted, the provision of combustible materials for linings, 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 support for the linings and ceilings shall be constructed of steel or other material equally effective in restricting fire.
- (b) In every ship referred to in paragraph (a), all exposed surfaces and their coatings, of corridor and cabin bulkheads in accommodation spaces shall be of limited flame-spreading power. All other exposed surfaces in corridors and stairway enclosures shall be such that the surface spread of flame will not be exceeded.

56. AUTOMATIC FIRE ALARM AND FIRE DETECTION SYSTEMS: METHODS I AND III.

- (1) In every Chapter V 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 or the signs of a fire and its location in any accommodation space or service space.

- (2) Every fire detection system fitted in compliance with this Part, shall be capable of automatically indicating on the navigating bridge or at other control station which are provided with direct communication with the

ander beheerposte wat van regstreekse verbinding met die navigasiebrug voorsien is, aan te dui: Met die voorbehoud dat die Owerheid in enige Hoofstuk V-skip kan toelaat dat die aanwysers by verskillende poste aangebring word, mits hy oortuig is dat sulke reëlins minstens net so doeltreffend is as wanneer die aanwysers so gesentraliseer is.

(3) Elektriese uitrusting wat gebruik word by die bediening van enige brandverklikstelsel wat ooreenkomstig die bepalings van hierdie Deel geïnstalleer is, moet vanaf twee bronne van elektriese krag voorsien kan word, waarvan een die noodbron van elektriese krag wat by regulasie 42 vereis word, moet wees.

(4) Die aanwyserstelsel van enige brandverklikstelsel wat ooreenkomstig die bepalings van hierdie Deel geïnstalleer is, moet sowel hoorbare as sigbare alarms by die poste waarna in subregulasie (2) verwys word, bedien.

57. OUTOMATIESE SPRINKELBLUS-, BRANDALARM- EN BRANDVERKLIKSTELSELS: METODE II.

(1) In elke Hoofstuk V-skip waarin Metode II vir brandbeveiliging toegepas word, moet 'n outomatiese sprinkelblus- en brandalarm- en -verklikstelsel wat voldoen aan die vereistes wat in Aanhangsel 5 gespesifiseer word, geïnstalleer en so ingerig word dat dit alle akkommodasie- en diensruimtes in die skip beskerm.

(2) In elke skip waarna in subregulasie (1) verwys word en waarvan die bobou geheel en al of gedeeltelik van aluminiumlegering gebou is, moet die hele eenheid met inbegrip van die sprinkelpomp, tenk en lugkompressor geleë wees op 'n plek wat tot tevredenheid van die Owerheid redelik verwyder is van die ketel- en masjinerie-ruimtes.

58. BEVEILIGING VAN TRAPPE.

(1) *Metode I en III:*

(a) In elke Hoofstuk V-skip waarin Metode I of III toegepas word, moet elke trap binne 'n akkommodasie- of diensruimte 'n staalraamkonstruksie hê: Met die voorbehoud dat die Owerheid in plaas van staal die gebruik van ander materiaal kan toelaat wat op grond van sy isolering as gelykstaande met staal beskou word. Elke sodanige trap moet binne 'n omsluiting gebou van Klas A-verdelings lê behalwe dat—

(i) 'n trap wat slegs twee dekke bedien nie by meer as een dek deur Klas A-verdelings omsluit hoef te word nie;

(ii) 'n trap in 'n openbare kamer nie so omsluit hoef te word nie, indien dit geheel en al binne die kamer lê.

(b) Elke opening in 'n trapomsluiting moet voorsien wees van 'n sluitmiddel wat blywend daaraan bevestig is. Die sluitmiddel moet sover doenlik, wat brandwering betref gelykstaan met die verdeling waarin dit aangebring is en moet, tensy dit 'n waterdigte deur is, selfsluitend wees.

(c) Elke trapomsluiting in 'n skip waarna in paragraaf (a) verwys word, moet regstreeks met die aangrensende gange verbind wees en moet 'n voldoende oppervlakte hê om samedromming te voorkom met inagneming van die getal persone wat in 'n noodgeval waarskynlik van die trap gebruik sal maak. Elke sodanige omsluiting moet so min akkommodasie- of diensruimte bevat as wat onder die omstandighede prakties moontlik is.

(2) *Metode II:*

(a) In elke Hoofstuk V-skip waarin Metode II toegepas word, moet elke trap binne 'n akkommodasie-

navigating bridge, the presence or the signs of a fire and its location: Provided that the Authority may in any Chapter V ship permit the indicators to be distributed among several stations if he is satisfied that such arrangements are at least as effective as if the indicators were so centralized.

(3) Electrical equipment used in the operation of any fire detecting system fitted in compliance with this Part, shall be capable of being supplied from two sources of electric power one of which shall be the emergency source of power required by regulation 42.

(4) The indicating system of any fire detection system fitted in compliance with this Part shall operate both audible and visible alarms at the stations referred to in sub-regulation (2).

57. AUTOMATIC SPRINKLER, FIRE ALARM AND FIRE DETECTION SYSTEMS: METHOD II.

(1) In every Chapter V 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 Annex 5 shall be installed and so arranged as to protect all accommodation spaces and service spaces in the ship.

(2) In every ship referred to in sub-regulation (1), the superstructure of which is wholly or partly constructed of aluminium alloy, the whole unit including the sprinkler pump, tank and air compressor shall be situated to the satisfaction of the Authority in a position reasonably remote from the boiler and machinery spaces.

58. PROTECTION OF STAIRWAYS.

(1) *Methods I and III:*

(a) In every Chapter V ship in which Method I or III has been adopted, every stairway within an accommodation space or service space shall be of steel frame construction: Provided that the Authority may permit in lieu of steel, the use of other material considered equivalent to steel by virtue of insulation. Every such stairway shall lie within an enclosure constructed of "A" Class divisions except that—

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

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

(b) Every opening in a stairway enclosure shall be provided with a means of closure which shall be permanently attached thereto. The means of closure shall be, as far as practicable, equivalent in resisting fire to the division in which it is fitted and shall, unless it is a watertight door, be self-closing.

(c) Every stairway enclosure in a ship referred to in paragraph (a), shall communicate directly with the corridors adjacent thereto and shall be of sufficient area 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.

(2) *Method II:*

(a) In every Chapter V ship in which Method II has been adopted, every stairway within an accommo-

of diensruimte 'n staalraamkonstruksie hê: Met die voorbehoud dat die Owerheid in plaas van staal die gebruik van ander geskikte materiaal kan toelaat op voorwaarde dat daar tot tevredenheid van die Owerheid bykomende brandblus- of brandbeveiligingsinrigtings voorsien word. Elke sodanige trap moet binne 'n omsluiting gebou van Klas A-verdelings lê behalwe dat—

- (i) 'n trap wat slegs twee dekke bedien, nie by meer as een dek deur Klas A-verdelings omsluit hoef te word nie;
 - (ii) 'n trap in 'n openbare kamer nie so omsluit hoef te word nie indien dit geheel en al binne die kamer lê.
- (b) Elke opening in 'n trapomsluiting moet voorsien wees van 'n sluitmiddel wat blywend daaraan bevestig is. Die sluitmiddel moet, sover doenlik, wat brandwering betref, gelykstaan met die verdeling waarin dit aangebring is en moet, tensy dit 'n waterdige deur is, selfsluitend wees.
- (c) Elke trapomsluiting in 'n skip waarna in paragraaf (a) verwys word, moet regstreeks met die aangrensende gange verbind wees en moet 'n voldoende oppervlakte hê om samedromming te voorkom met inagneming van die getal persone wat in 'n noodgeval waarskynlik van die trap gebruik sal maak. Elke sodanige omsluiting moet so min akkommodasie- of diensruimte bevat as wat onder die omstandighede prakties moontlik is.

59. SKEIDING VAN AKKOMMODASIERUIMTES VAN ANDER INGESLOTE RUIMTES.

In elke Hoofstuk V-skip moet die beskotte en dekke wat akkommodasieruimtes van ander ingeslote ruimtes skei, uit Klas A-verdelings bestaan.

60. BEVEILIGING VAN HYSBAKKE EN VERTIKALE KOKERS VIR LIG EN LUG.

(1) In elke Hoofstuk V-skip moet elke hysbakkoker en elke koker vir lig en lug of 'n soortgelyke koker in 'n akkommodasie- of diensruimte van Klas A-verdelings gebou wees: Met die voorbehoud dat 'n hysbakkoker binne 'n trapomsluiting nie geïsoleer hoef te wees nie. Elke deur in so 'n koker moet van staal of ander ekwivalente materiaal gebou word en moet, wat brandwering betref, net so doeltreffend soos die koker wees.

(2) Elke hysbakkoker in 'n Hoofstuk V-skip moet so aangebring word dat dit nie rook en vlamme van een tussendeck na 'n ander sal deurlaat nie en moet voorsien wees van sluitmiddels waarmee die trek van lug en rook beheer kan word.

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

(4) Elke ander koker in 'n Hoofstuk V-skip moet so gebou wees dat dit nie vuur vanaf een tussendeck of afdeling na 'n ander sal deurlaat nie.

61. BEVEILIGING VAN BEHEERPOSTE.

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

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

ation space or service space shall be of steel frame construction: Provided that the Authority may permit in lieu of steel the use of other suitable material on condition that additional fire extinguishing or fire protection arrangements to the satisfaction of the Authority are provided. Every such stairway shall lie within an enclosure constructed of "A" Class divisions except that—

- (i) a stairway serving only two decks shall not be required to be enclosed by "A" Class divisions at more than one deck;
 - (ii) a stairway in a public room shall not be required to be so enclosed if it lies wholly within the room.
- (b) Every opening in a stairway enclosure shall be provided with a means of closure which shall be permanently attached thereto. The means of closure shall be, as far as practicable, equivalent in resisting fire to the division in which it is fitted and shall, unless it is a watertight door, be self-closing.
- (c) Every stairway enclosure in a ship referred to in paragraph (a), shall communicate directly with the corridors adjacent thereto and shall be of sufficient area 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.

59. 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.

60. 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 equivalent 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) 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.

61. 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.

62. BEVEILIGING VAN PAKKAMERS, ENS.

(1) In elke Hoofstuk V-skip moet die grensbeskotte wat 'n kombuis, bagasiekamer, poskamer, pakkamer, verkamer, lampkamer of enige soortgelyke ruimte van enige ander ruimte skei, uit Klas A-verdelings bestaan.

(2) Ruimtes wat toegewys is vir die bewaring van hoogs ontvlambare voorrade moet so gebou en geleë wees dat die gevaar vir persone aan boord in die geval van 'n brand tot 'n minimum beperk word.

63. VENTILASIESTELSLS.

(1) Die hoofinlaatopenings van elke lugtoevoerstelsel en die hoofuitlaatopenings van elke luguitlaatselsel in elke Hoofstuk V-skip moet van buite af toegemaak kan word. Waar doenlik, moet die leidings vanaf elke ventilasiewaier binne een vertikale hoofone wees.

(2) Elke Hoofstuk V-skip moet toegerus word met twee hoofkontroles, so ver moontlik van mekaar geleë, waarvan eenige in staat is om al die waaiers in die kragventilasiesels van die skip, behalwe die ventilasiesels in die masjinerieruimte, vragruimtes en enige alternatiewe stelsels wat by subregulasie (4) vereis word, tot stilstand te bring. Elke kragventilasiesels wat 'n masjinerieruimte bedien, moet twee hoofkontroles hê waarvan een van 'n plek buitekant so 'n ruimte vandaan bedien kan word.

(3) In elke Hoofstuk V-skip moet enige uitlaatkokers vanaf kombuisstowe gebou wees van Klas A-verdelings wat geïsoleer moet word waar die kokers deur akkommodasie-, diens- of masjinerieruimtes of beheerposte loop. Toegangsmiddels moet vir skoonmaakdoeleindes voorsien word.

(4) In elke Hoofstuk V-skip moet daar vir elke beheerpos wat onderkant die dek geleë is, behalwe 'n beheerpos wat in 'n masjinerieruimte geleë is, voorsiening gemaak word vir middels om te verseker dat die ventilasie, sigbaarheid en vryheid van rook daarin gehandhaaf kan word sodat die uitrusting wat dit bevat in die geval van brand in die skip doeltreffend bedien kan word. Tensy die beheerpos geleë is op, of toegang het tot 'n oop dek, of voorsien is van plaaslike sluitinrigtings wat ewe doeltreffend is om ventilasie, sigbaarheid en vryheid van rook in die geval van brand in die skip te handhaaf, moet daar minstens twee geheel en al afsonderlike lugtoevoermiddels vir sodanige beheerposte aangebring word, en die luginlaatopenings na hierdie toevoerbronne moet so geplaas wees dat die gevaar dat albei gelyktydig rook sal intrek, sover doenlik, uigeskakel word.

64. DIVERSE BRANDBEVEILIGINGSITEMS.

(1) Onderstaande bepalinge is van toepassing op alle dele van enige Hoofstuk V-skip—

- (a) verf, vernis of soortgelyke preparate met 'n nitrosellulose- of ander hoogs ontvlambare basis mag nie gebruik word nie en stowwe wat nitrosellulose bevat mag nie aangebring word nie;
- (b) enige pyp wat deur 'n Klas A- of Klas B-verdeling loop, moet van geskikte materiaal wees en moet rekening hou met die temperatuur wat sulke verdelings sal moet weerstaan;
- (c) pype wat vir olie of ander ontvlambare vloeistowwe bedoel is, moet van geskikte materiaal wees met inagneming van die gevaar van brand; en
- (d) buiteboordse spuipype, sanitêre afvoerpype of ander uitlaattipe naby die waterlyn mag nie gemaak word van materiaal wat in die geval van brand, waarskynlik sal faal en daardeur die gevaar van oorstroming kan laat ontstaan nie.

62. 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 minimize the danger to persons on board in the event of fire.

63. VENTILATION SYSTEMS.

(1) The main inlets of every air supply system and the main outlets of every air exhaust system in every Chapter V ship shall be capable of being closed from external positions. 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, cargo spaces and any alternative systems required by sub-regulation (4). 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.

(3) In every Chapter V ship, any exhaust ducts from galley ranges shall be constructed of "A" Class divisions which shall be insulated where the ducts pass through accommodation, service or machinery spaces, or control stations. Means of access shall be provided for cleaning purposes.

(4) In every Chapter V ship, there shall be provided for every control station situated below deck, other than a control station situated in the machinery space, means to ensure ventilation, visibility and freedom from smoke within it so that in the event of fire in the ship, the equipment it contains may be operated effectively. Unless the control station is situated on, and has access to, an open deck, or is provided with local closing arrangements equally effective to maintain ventilation, visibility and freedom from smoke in the event of fire in the ship, there shall be provided at least two entirely separate means of supplying air to such control stations, and the air inlets to these sources of supply shall be so situated that the risk of both drawing in smoke simultaneously is as far as practicable eliminated.

64. MISCELLANEOUS ITEMS OF FIRE PROTECTION.

(1) The following provisions shall apply to all parts of any Chapter V ship—

- (a) paints, varnishes or similar preparations shall not be used if they contain a nitro-cellulose or other highly inflammable base, and fabrics containing nitro-cellulose shall not be fitted;
- (b) any pipe which penetrates an "A" Class or "B" Class division, shall be of suitable material and shall have regard to the temperature such divisions are required to withstand;
- (c) pipes intended for oil or other inflammable liquids, shall be of suitable material having regard to the risk of fire; and
- (d) overboard scuppers, sanitary discharges or other outlets close to the waterline, shall not be of a material likely to fail in the event of fire and thereby give rise to a danger of flooding.

(2) Onderstaande bepalinge is van toepassing op die akkommodasie- en diensruimtes van enige Hoofstuk V-skip—

- (a) elke lugruimte wat agter 'n plafon, paneel of binnebekleding in die akkommodasie- of diensruimtes omsluit is, moet onderverdeel word deur middel van noupassende trekafsluiters wat hoogstens 45 voet van mekaar geleë is en by elke dek gesluit moet wees;
- (b) elke plafon, paneel en bekleding waarna in paragraaf (a) verwys word, moet so gebou wees dat dit vir die brandpatroolie moontlik sal wees om rook wat in 'n verborge of ontoeganklike ruimte ontstaan, op te spoor sonder belemmering van die doeltreffendheid van die skip se brandbeveiliging;
- (c) die verborge oppervlakke van elke beskot, bekleding, paneel, trap, houhegstuk en ander struktuur in akkommodasie- en diensruimtes moet sodanig wees dat die oppervlakverspreiding van vlamme nie oorskry word nie;
- (d) die gebruik van hout vir die konstruksie en uitrusting van kombuise, bakkerie en hoofaanrekte moet, so ver doenlik, beperk word;
- (e) (i) elke venster en patryspoort in die skeepsboord, of in beskotte wat akkommodasie-ruimtes teen die weer beskerm, moet gebou wees met rame van staal of ander geskikte materiaal en die glas daarin moet deur 'n metaalruitkraallys teëgehou word. Indien die venster of patryspoort op 'n plek is waar die smelting van die raam, ring of kraallys die gevaar van oorstroming kan laat ontstaan, moet die raam, ring of kraallys, al na die geval, bestaan uit metaal wat waarskynlik nie in die geval van brand sal smelt nie;
- (ii) elke venster en patryspoort in beskotte binne akkommodasie-ruimtes moet so gebou wees dat dit die integriteitsvereistes van die tipe beskot waarin dit aangebring is, bewaar;
- (f) enige permanente dekbekleding binne 'n akkommodasie- of diensruimte, beheerpos, trap of gang, moet 'n tipe wees wat nie maklik aan die brand sal slaan nie; en
- (g) films met 'n sellulosenitraatbasis mag nie in rolprentinstallasies gebruik word nie.

(3) Onderstaande bepalinge is van toepassing op die masjinerie-ruimtes van enige Hoofstuk V-skip:—

- (a) Die dakvensters van ruimtes wat hoofaandrywingsmasjinerie of oliegestookte ketels of hulp masjinerie van die binnebrandtipe met 'n totale perdekrag van 1,000 of meer bevat, moet in die geval van brand van buitekant die ruimte vandaan gesluit en oopgemaak kan word, en wanneer hulle glas-paneel het, moet sulke paneel 'n brandwerende konstruksie hê, van draadversterkte glas voorsien wees en aan die buitekant luike van staal of ander ekwivalente materiaal blywend daaraan bevestig hê;
- (b) vensters mag nie in masjienkaste aangebring word nie behalwe wanneer die Owerheid oortuig is dat hulle nodig is en nie 'n brandgevaar sal skep nie. Wanneer sulke vensters aangebring word, moet hulle die tipe wees wat nie kan oopmaak nie, 'n brandwerende konstruksie hê, van draadversterkte glas voorsien wees en aan die buitekant luike van staal of ander ekwivalente materiaal blywend daaraan bevestig hê.

(2) The following provisions shall apply to the accommodation and service spaces of any Chapter V ship—

- (a) every air space enclosed behind a ceiling, panel or lining in the accommodation spaces or service spaces, shall be divided by close fitting draught-stops spaced not more than 45 feet apart and which shall be closed at each deck;
- (b) every ceiling, panel and lining referred to in paragraph (a), 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;
- (c) the concealed surfaces of every bulkhead, lining, panel, stairway, wood ground and other structure in accommodation spaces and service spaces, shall be such that the surface spread of flame is not exceeded;
- (d) the use of wood for the construction and equipment of galleys, bakeries and main pantries shall be restricted so far as is practicable;
- (e) (i) every window and side scuttle in the ship's side or in bulkheads protecting accommodation spaces from the weather, shall be constructed with frames of steel or other suitable material and the glass therein shall be retained by a metal glazing 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 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;
- (ii) every window and side scuttle in bulkheads within accommodation spaces, shall be constructed so as to preserve the integrity requirements of the type of bulkhead in which it is fitted;
- (f) any permanent deck sheathing within an accommodation space, service space, control station, stairway or corridor, shall be of a type which will not readily ignite; and
- (g) cellulose-nitrate-based film shall not be used in cinematograph installations.

(3) The following provisions shall apply to the machinery spaces of any Chapter V ship—

- (a) the skylights to spaces containing main propulsion machinery or oil-fired boilers or auxiliary internal combustion type machinery of a total horse power of 1,000 or over, shall be capable of being closed and opened from outside the space in the event of fire and, where they contain glass panels, such panels shall be of fire resisting construction fitted with wire reinforced glass and shall have external permanently attached shutters of steel or other equivalent material;
- (b) windows shall not be fitted in engine casings except where the Authority is satisfied that they are necessary and will not constitute a fire hazard. Where such windows are fitted, they shall be of a non-opening type and shall be of fire resisting construction fitted with wire reinforced glass and shall have external permanently attached shutters of steel or other equivalent material.

HOOFSTUK V (A): BRANDBEVEILIGING: SKEPE VAN KLAS I, II EN IIA.

65. TOEPASSING VAN HOOFSTUK V (A).

Hierdie Hoofstuk is van toepassing op elke skip van Klas I, II of IIA wat hoogstens 36 passasiers vervoer en 'n „Hoofstuk V(A)-skip” beteken 'n skip waarop hierdie Hoofstuk van toepassing is.

66. ALGEMEEN.

(1) Elke Hoofstuk V (A)-skip moet voldoen aan regulasies 49 tot en met 52, regulasies 59, 60 (1), 61, 62, 64 (1) (a), (b), (c) en (d) en regulasie 64 (2) (c), (d), (e), (f) en (g).

(2) In enige Hoofstuk V (A)-skip, kan die Owerheid toelaat dat kleiner hoeveelhede isolering aangebring word as wat by regulasie 51 (1) vereis word, en onderstaande bykomende bepalinge is van toepassing op so 'n skip—

- (a) alle trappe en nooduitgange in akkommodasie- en diensruimtes moet van staal of ander ekwivalente materiaal wees;
- (b) kragventilasie van 'n masjinerieruimte moet stopgesit kan word van 'n maklik toeganklike plek buite die ruimte vandaan; en
- (c) behalwe wanneer alle beskotte in akkommodasie-ruimtes aan die vereistes van regulasies 54 (1) en 55 (1) voldoen, moet die skip toegerus word met 'n outomatiese brandverklikstelsel wat aan regulasie 56 voldoen en in akkommodasie-ruimtes moet die gangbeskotte van staal wees, of onbrandbare Klas B-verdelings wees.

HOOFSTUK V (B): BRANDBEVEILIGING: SKEPE VAN KLAS V EN VI.

67. TOEPASSING VAN HOOFSTUK V (B).

Hierdie Hoofstuk is van toepassing op elke skip van Klas V of VI.

68. BOU VAN DIE SKIP.

Die romp, bobou, strukturele beskotte, dekke en dekhuse van elke skip van Klas V of VI moet van staal gebou wees.

69. VERDELINGS.

In elke skip van Klas V of VI wat 'n skip is wat toegerus is met binnebrandaandrywingsmasjinerie of oliegestookte ketels moet die akkommodasie-ruimtes deur Klas A-verdelings van die masjinerieruimtes geskei word.

HOOFSTUK VI: KETELS EN MASJINERIE.

70. TOEPASSING VAN HOOFSTUK VI.

Tensy daar in hierdie Hoofstuk anders aangedui word, is hierdie Hoofstuk van toepassing op elke skip van Klas I, II, IIA, V of VI, en 'n „Hoofstuk VI-skip” beteken 'n skip waarop hierdie Hoofstuk van toepassing is.

71. ALGEMEEN.

In elke Hoofstuk VI-skip moet die ontwerp en bou van die masjinerie, ketels en ander drukhouers toereikend wees vir die diens waarvoor hulle bedoel is en moet hulle so aangebring en beskerm word dat enige gevaar vir persone aan boord tot 'n minimum beperk word. Sonder

CHAPTER V (A): FIRE PROTECTION: SHIPS OF CLASSES I, II AND IIA.

65. APPLICATION OF CHAPTER V (A).

This Chapter applies to every ship of Class I, II or IIA carrying not more than 36 passengers, and a “Chapter V (A) ship” means a ship to which this Chapter applies.

66. GENERAL.

(1) Every Chapter V (A) ship, shall comply with regulations 49 to 52 inclusive, regulations 59, 60 (1), 61, 62, 64 (1) (a), (b), (c) and (d) and regulation 64 (2) (c), (d), (e), (f) and (g).

(2) In any Chapter V (A) ship, the Authority may permit smaller amounts of insulation to be fitted than are required by regulation 51 (1), and the following additional provisions shall apply to such ship—

- (a) all stairways and means of escape in accommodation and service spaces shall be of steel or other equivalent material;
- (b) power ventilation of a machinery space shall be capable of being stopped from an easily accessible position outside the space; and
- (c) except where all bulkheads in accommodation spaces conform with the requirements of regulations 54 (1) and 55 (1), the ship shall be provided with an automatic fire detection system conforming with regulation 56, and in accommodation spaces the corridor bulkheads shall be of steel or shall be incombustible “B” Class divisions.

CHAPTER V (B): FIRE PROTECTION: SHIPS OF CLASSES V AND VI.

67. APPLICATION OF CHAPTER V (B).

This Chapter applies to every ship of Class V or VI.

68. STRUCTURE OF THE SHIP.

The hull, superstructure, structural bulkheads, decks and deck houses of every ship of Class V or VI shall be constructed of steel.

69. DIVISIONS.

In every ship of Class V or 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.

70. APPLICATION OF CHAPTER VI.

Unless otherwise indicated in this Chapter, this Chapter applies to every ship of Class I, II, IIA, V or VI, and a “Chapter VI ship” means a ship to which this Chapter applies.

71. GENERAL.

In every Chapter VI ship, the machinery, boilers and other pressure vessels shall be of a design and construction adequate for the service for which they are intended and shall be so installed and protected as to minimize any danger to persons on board. Without prejudice to

benadeling van die algemeenheid van die voorafgaande, moet middels voorsien word om oordruk in enige deel van sulke masjinerie, ketels en ander drukhouers te voorkom en in die besonder moet elke ketel en ongestookte stoomgenerator van minstens twee veiligheidskleppe voorsien wees: Met die voorbehoud dat die Owerheid met inagneming van die lewering of enige ander eienskappe van enige ketel of ongestookte stoomgenerator kan toelaat dat daar slegs een veiligheidsklep aangebring word indien hy tevrede is dat voldoende beskerming teen oordruk daardeur verleen word.

72. KETELS EN ANDER DRUKHOUSERS.

(1) In elke Hoofstuk VI-skip moet elke ketel en ander drukhouer met hul onderskeie monterings, voordat dit die eerste maal in gebruik geneem word, aan 'n hidrouliese toets onderwerp word onder 'n druk wat voldoende hoër as die werkdruk is, wat sal verseker dat die ketel of ander drukhouer met sy monterings sterk genoeg en behoorlik ontwerp is vir die bedoelde diens met inagneming van—

- (a) die ontwerp en materiaal waarvan dit gebou is;
- (b) die doel waarvoor dit bedoel is om gebruik te word; en
- (c) die werkomstandighede waaronder dit bedoel is om gebruik te word,

en elke sodanige ketel of ander drukhouer moet te eniger tyd daarna in staat wees om so 'n toets te deurstaan.

(2) Voorsiening moet gemaak word wat die skoonmaak en inspeksie van elke drukhouer sal vergemaklik.

73. MASJINERIE.

(1) In elke Hoofstuk VI-skip moet hoof- en hulp-masjinerie wat vir die aandrywing en veiligheid van die skip nodig is, van doeltreffende kontrolemiddels voorsien wees en die masjinerie moet in werking gestel kan word wanneer daar aanvanklik geen krag in die skip beskikbaar is nje.

(2) In elke Hoofstuk VI-skip waar die gevaar van oorjaging van die masjinerie bestaan, moet daar middels voorsien word om te verseker dat die veilige spoed nie oorskry word nie en in die besonder moet 'n reëlbaar voorsien word vir enige turbine of stel turbines wat 'n enkelratwiel aandryf wat deel van die hoofaandrywings-masjinerie uitmaak, sodat die stoom outomaties afgesluit kan word ingeval die spoed te hoog word. 'n Handuitklinker moet ook vir dié doel voorsien word.

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

(4) In elke Hoofstuk VI-skip waar hoof- of hulpmasjinerie, of enige deel van sulke masjinerie, aan binnedruk onderwerp word, moet daardie dele, voordat hulle die eerste maal in gebruik geneem word, onderwerp word aan 'n hidrouliese toets onder 'n druk wat voldoende hoër as die werkdruk is met inagneming van—

- (a) die ontwerp en die materiaal waarvan hulle gebou is;
- (b) die doel waarvoor hulle bedoel is om gebruik te word; en
- (c) die werkomstandighede waaronder hulle bedoel is om gebruik te word,

en sulke dele moet te eniger tyd daarna in staat wees om 'n toets te deurstaan.

the generality of the foregoing, means shall be provided which shall prevent overpressure in any part of such machinery, boilers and other pressure vessels, and in particular every boiler and every unfired steam generator shall be provided with not less than two safety valves: Provided that the Authority may, having regard to the output or any other features of any boiler or unfired steam generator, permit only one safety valve to be fitted if he is satisfied that adequate protection against overpressure is thereby provided.

72. BOILERS AND OTHER PRESSURE VESSELS.

(1) In every Chapter VI ship, every boiler or other pressure vessel and its respective mountings shall, before being put into service for the first time, be subjected to a hydraulic test to a pressure suitably in excess of the working pressure which will ensure that the boiler or other pressure vessel and its mountings are adequate in strength and design for the intended service, having regard to—

- (a) the design and material of which it is constructed;
- (b) the purpose for which it is intended to be used; and
- (c) the working conditions under which it is intended to be used,

and every such boiler or other pressure vessel shall at any time thereafter be capable of withstanding such a test.

(2) Provision shall be made which will facilitate the cleaning and inspection of every pressure vessel.

73. MACHINERY.

(1) In every Chapter VI ship, main and auxiliary machinery necessary for the propulsion and safety of the ship, shall be provided with effective means of control, and the machinery shall be capable of being brought into operation when initially no power is available in the ship.

(2) In every Chapter VI ship, where risk from overspeeding of machinery exists, means shall be provided to ensure that the safe speed is not exceeded, and in particular a governor shall be provided for any 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.

(3) In every Chapter VI 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.

(4) In every Chapter VI ship where main or auxiliary machinery or any parts of such machinery are subject to internal pressure, those parts shall before being put into service for the first time, be subjected to a hydraulic test to a pressure suitably in excess of the working pressure having regard to—

- (a) the 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,

and such parts shall at any time thereafter be capable of withstanding such a test.

74. KRAG OM AGTERUIT TE VAAR.

(1) Elke Hoofstuk VI-skip moet voldoende krag hê om agteruit te vaar sodat behoorlike beheer oor die skip in alle normale omstandighede verseker kan word.

(2) Tydens die eerste ondersoek van die skip moet gedemonstreer word in watter mate die masjinerie die vermoë besit om die stootrigting van die skroef onder normale maneuvreertoestande betyds om te keer en so-doende die skip vanaf die maksimum dienssnelheid vorentoe, tot stilstand te bring.

75. ASSE.

In elke Hoofstuk VI-skip moet elke as so ontwerp en gebou wees dat dit die maksimum werkspannings waaraan dit onderwerp 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 masjien waardeur dit aangedryf word, of waarvan dit 'n deel uitmaak.

76. KETELVOEDINGSTELSLS.

(1) In elke Hoofstuk VI-skip moet elke ketel voorsien wees van minstens twee doeltreffende en afsonderlike voedingsstelsels wat so ingerig is dat enigeen van sodanige stelsels vir inspeksie of opknapping oopgemaak kan word sonder dat dit die doeltreffendheid van die ander stelsel raak. Middels moet voorsien word om oordruk in enige deel van die stelsels te voorkom.

(2) In elke Hoofstuk VI-skip waarin ketels aangebring word, moet daar minstens twee voedingspompe voorsien word en wanneer die ketels onder vollastoestande werk, moet daar minstens een voedingspomp vir reserwediens beskikbaar wees.

(3) In elke Hoofstuk VI-skip waarin ketels aangebring word, moet daar voorsiening gemaak word om te verseker dat 'n voorraad geskikte reserwevoedingswater beskikbaar is, met inagneming van die aard en bedoelde duur van die reis.

(4) Indien dit moontlik is dat olie in die voedingswaterstelsel van enige Hoofstuk VI-skip kan kom, moet die inrigtings vir die voorsiening van ketelvoedingswater voorsiening maak vir die opvang van olie in die voedingswater.

(5) Elke voedingskeerklep, -inrigting of -pyp waardeur voedingswater van 'n pomp na die ketels in enige Hoofstuk VI-skip loop, moet ontwerp en gebou wees om die maksimum werkspannings waaraan dit onderwerp mag word, te weerstaan met 'n veiligheidsfaktor wat voldoende is met inagneming van die materiaal waarvan dit gebou is en die werkomstandighede waaronder dit gebruik sal word. Elke sodanige klep, inrigting of pyp moet voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n hidrouliese toets onder 'n druk wat voldoende hoër is as die maksimum werkdruk van die ketel waaraan dit verbind is, of die maksimum werkdruk waaraan die voedingspyp onderwerp mag word, watter een ook al die grootste is, en dit moet te eniger tyd daarna in staat wees om so 'n toets te deurstaan.

(6) In elke Hoofstuk VI-skip waarin oliegestookte waterpypketels aangebring word, moet 'n outomatiese lae-ketelwaterpeilalarm en 'n outomatiese lae-ketelwaterpeilafsluitklep in die brandstoftoevoerpyp na die oondvoorkante voorsien word.

74. POWER FOR GOING ASTERN.

(1) Every Chapter VI ship shall have sufficient power for going astern to secure control of the ship in all normal circumstances.

(2) The ability of the machinery to reverse the direction of thrust of the propeller in sufficient time, under normal manoeuvring conditions, and so to bring the ship to rest from maximum ahead service speed, shall be demonstrated at the first survey of the ship.

75. SHAFTS.

In every Chapter VI 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.

76. BOILER FEED SYSTEMS.

(1) In every Chapter VI ship, every boiler fitted 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) In every Chapter VI ship in which boilers are fitted, there shall be provided not less than two feed pumps and when the boilers are operating under full load conditions, there shall be at least one feed pump available for stand-by duties.

(3) In every Chapter VI ship in which boilers are fitted, provision shall be made to ensure that a supply of suitable reserve feed water is available, having regard to the nature and intended duration of the voyage.

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

(5) Every feed check valve, fitting or pipe through which feed water passes from a pump to the boilers in any Chapter VI ship, shall be designed and constructed to withstand the maximum working stresses to which it may be subjected, with a factor of safety which is adequate having regard to the material of which it is constructed and the working conditions under which it will be used. Every such valve, fitting or pipe shall before being put into service for the first time, be subjected to a hydraulic test suitably in excess of the maximum working pressure of the boiler to which it is connected or of the maximum working pressure to which the feed line may be subjected, whichever shall be the greater, and shall at any time thereafter be capable of withstanding such a test.

(6) In every Chapter VI ship where oil fired water tube boilers are fitted, an automatic boiler water low level alarm and an automatic boiler water low level shut-off valve in the fuel supply pipe to the furnace fronts shall be provided.

77. STOOMPYPSTELSELS.

(1) In elke Hoofstuk VI-skip moet elke stoompyp en elke inrigting wat daaraan verbind is, 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 gemaak is; en
- (b) die werkomstandighede waaronder dit gebruik sal word.

(2) Sonder benadeling van die algemeenheid van sub-regulasie (1), moet elke stoompyp en -inrigting voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n toets onder 'n hidrouliese druk wat bepaal moet word met inagneming van die vereistes van sub-regulasie (1) (a) en (b) maar in geen geval minder as twee maal die werkdruk waaraan dit onderwerp mag word nie, en hulle moet te eniger tyd daarna in staat wees om so 'n toets te deurstaan.

(3) Stoompype moet voldoende gesteun word.

(4) Voorsiening moet gemaak word om oormatige spanning te verhoed wat moontlik tot die faling van enige stoompyp of -inrigting kan lei, hetsy as gevolg van temperatuurverandering, vibrasie of andersins.

(5) 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 waterslag nie sal voorkom nie onder enige omstandighede wat moontlik in die loop van die voorgenome diens van die skip kan voorkom.

(6) Indien 'n stoompyp stoom vanaf enige bron mag ontvang onder 'n hoër druk as wat dit met 'n voldoende veiligheidsfaktor kan weerstaan, moet 'n doeltreffende reduceerklap, ontlasklep en drukmeter aan so 'n pyp aangebring word.

78. LUGDRUKSTELSELS.

(1) In elke Hoofstuk VI-skip wat 'n skip is waarin masjinerie wat noodsaaklik vir die aandrywing en veiligheid van die skip, of die mense aan boord is, uitsluitlik deur druklug aangesit, bedien of beheer moet word, moet daar minstens twee lugkompressors voorsien word wat elkeen 'n doeltreffende ontwerp en voldoende krag en vermoë moet hê vir die diens waarvoor dit bedoel is: Met die voorbehoud dat slegs een so 'n kompressor in 'n skip van Klas V of VI vereis sal word.

(2) Elke Hoofstuk VI-skip wat 'n skip is wat aangedryf word deur kompressieontstekingsjins wat ontwerp is om deur druklug aangesit te word, moet voorsien wees van minstens twee lughouers met so 'n totale inhoudsmaat dat wanneer hulle met druklug gevul is, die lug daarin voldoende sal wees om elkeen van die skip se hoofenjins twaalf maal aan te sit indien sulke engines omstelbaar is, en ses maal indien sulke enjins nie omstelbaar is nie: Met die voorbehoud dat slegs een so 'n lughouer in 'n skip van Klas V of VI vereis sal word.

(3) Elke lughouer en lugfles wat in enige Hoofstuk VI-skip voorsien word, moet so ingerig wees dat dit toeganklik vir inspeksiedoeleindes is en voorsien wees van doeltreffende dreineerpype vir die verwydering van olie en water en van doeltreffende ontlasklepe om oordruk te voorkom. Indien die lughouer of lugfles van die ontlasklep geïsoleer kan word, moet dit voorsien word van een of meer smeltbare proppe sodat sy inhoud, ingeval van brand, uitgelaat kan word.

(4) (a) Elke lugdrukyp wat in enige Hoofstuk VI-skip voorsien word en elke inrigting wat aan so 'n pyp

77. STEAM PIPE SYSTEMS.

(1) In every Chapter VI ship, every steam pipe and 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.

(2) Without prejudice to the generality of sub-regulation (1), every steam pipe or fitting shall before being put into service for the first time, be subjected to a test to a hydraulic pressure to be determined having regard to the requirements of sub-regulation (1) (a) and (b), but in no case to less than twice the working pressure to which it may be subjected, and shall at any time thereafter be capable of withstanding such a test.

(3) Steam pipes shall be adequately supported.

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

(5) 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.

(6) 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 gauge shall be fitted to such pipe.

78. AIR PRESSURE SYSTEMS.

(1) In every Chapter VI ship, being a ship in which machinery essential for the propulsion and safety of the ship or of persons on board is required to be started, operated or controlled solely by compressed air, there shall be provided at least two air compressors each of which shall be of efficient design and of sufficient strength and capacity for the service for which it is intended: Provided that in a ship of Class V or VI only one such compressor shall be required.

(2) Every Chapter VI 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 a ship of Class V or VI, only one such air receiver shall be required.

(3) Every air receiver and air bottle provided in any Chapter VI 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 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.

(4) (a) Every air pressure pipe provided in any Chapter VI ship and every fitting connected to such pipe, shall be

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 werkomstandighede waaronder dit bedoel is om gebruik te word.

(b) Sonder benadeling van die algemeenheid van paragraaf (a) moet elke pyp en inrigting waarna daarin verwys word, behalwe 'n pyp of inrigting in 'n pneumatiese kontrolestelsel, voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n toets onder 'n hidrouliese druk gelyk aan twee maal sy maksimum werkspanning en dit moet so 'n toets te eniger tyd daarna kan deurstaan.

(5) (a) Elke pyp waarna in subregulasie (4) verwys word, moet behoorlik gesteun word. Voorsiening moet gemaak word om die binnekant van die pyp vry van olie te hou en of die deurgang van vlamme van die enjinslinders na die pyp te verhoed, of die pyp teen die uitwerking van 'n inwendige ontploffing te beskerm.

(b) In elke Hoofstuk VI-skip moet alle afvoerpype van aansitlugkompressors regstreeks na die aansitlughouers lei en alle aansitlugpype van die lughouers na hoof- of hulpenjins moet geheel en al afsonderlik van die kompressorafvoerpypstelsel gehou word.

(6) (a) Middels moet in enige Hoofstuk VI-skip voorsien word om oordruk in enige deel van enige druklugstelsel te verhoed en wanneer watermantels en omhulsels van lugkompressors en verkoelers aan gevaarlike oordruk onderwerp mag word as gevolg van 'n lekkasie vanaf lugdrukdele in hulle in, moet geskikte drukontlastingsinrigtings voorsien word.

(b) Indien 'n lugdrukpyp lug vanaf enige bron mag ontvang onder 'n hoër druk as wat dit met 'n voldoende veiligheidsfaktor kan weerstaan, moet 'n doeltreffende reduseerklap, ontlastklap en drukmeter aan so 'n pyp aangebring word.

79. VERKOELINGSTELSELS.

(1) In elke Hoofstuk VI-skip waar masjinerie wat noodsaaklik is vir die aandrywing of veiligheid van die skip, of van persone aan boord, vir hul werking afhanklik is van 'n doeltreffende verkoelingswaterstelsel, moet daar minstens een sirkulasiepomp voorsien word en, behalwe in die geval van enige noodgenerator en in 'n skip van Klas V of VI moet daar voorsiening gemaak word dat daar in die geval van die faling van so 'n pomp, 'n alternatiewe pomp vir dieselfde diens beskikbaar is. Sulke pompe moet in staat wees om voldoende verkoelingswater aan sodanige masjinerie, olieverkoelers, verswaterverkoelers of kondensators wat daaraan aangebring is, al na die geval, te voorsien.

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

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

(4) Die uitlaatpype en knaldempers van elke binnebrandenjinn wat in 'n Hoofstuk VI-skip voorsien word, moet doeltreffend verkoel of beklee wees.

80. OLIESTELSELS VIR SMERING, VERKOELING EN BEHEER.

(1) In elke Hoofstuk VI-skip wat 'n skip is waarin olie onder druk gesirkuleer word vir die smering of verkoeling of as die enigste beheermiddel van masjinerie wat noodsaaklik is vir die aandrywing of veiligheid van

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 paragraph (a), every pipe and fitting referred to therein, other than a pipe or fitting in a pneumatic control system, shall before being put into service for the first time, be subjected to a test by hydraulic pressure to twice its maximum working pressure and shall at any time thereafter be capable of withstanding such a test.

(5) (a) Every pipe referred to in sub-regulation (4) 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.

(b) In every Chapter VI ship, all discharge pipes from starting air compressors shall lead directly to the starting air receivers, and all starting air pipes from the air receivers to main or auxiliary engines shall be kept entirely separate from the compressor discharge pipe system.

(6) (a) Means shall be provided in any Chapter VI ship to prevent overpressure in any part of any compressed air system, and where water jackets or casings of air compressors and coolers might be subjected to dangerous overpressure due to leakage into them from air pressure parts, suitable pressure relief arrangements shall be provided.

(b) If 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.

79. COOLING SYSTEMS.

(1) In every Chapter VI ship, where machinery essential for the propulsion or safety of the ship or of persons on board is dependent for its operation on an efficient cooling water system, there shall be provided at least one circulating pump and, except in the case of any emergency generator and in a ship of Class V or VI, provision shall be made so that in the event of the failure of such pump, an alternative pump is available for the same duty. Such pumps shall be capable of supplying adequate cooling water to such machinery, oil coolers, fresh water coolers or condensers fitted thereto, as the case may be.

(2) If direct sea water cooling is used for essential internal combustion machinery, 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 Chapter VI ship, shall be efficiently cooled or lagged.

80. OIL SYSTEMS FOR LUBRICATING, COOLING AND CONTROL.

(1) In every Chapter VI ship, being a ship in which oil is circulated under pressure for the lubrication or cooling or as the sole means of control of machinery essential

die skip of persone aan boord, moet minstens twee pompe voorsien word waarvan elkeen voldoende moet wees om sodanige olie te sirkuleer: Met die voorbehoud dat daar in 'n skip van Klas V of VI en in die geval van enige noodgenerator in enige skip, slegs een sodanige pomp vereis word.

(2) In elke skip van Klas I, II of IIA wat deur turbinemasjinerie aangedryf word, of met turbo-elektriese aandryfmasjinerie, moet die smeerolieinrigtings sodanig wees dat 'n noodtoevoer olie beskikbaar is wat voldoende is om na 'n kragonderbreking 'n toereikende smeerolie toevoer vol te hou vir minstens drie minute, of vir sodanige tyd as wat nodig mag wees vir onbelaste turbo-elektriese aandryfmasjinerie om van die maksimum loopspoed tot stilstand te kom. So 'n noodtoevoer moet outomaties in werking tree ingeval van 'n onderbreking in die druktoevoer van smeerolie vanaf die pomp of pompe.

(3) Siwwe moet voorsien word om die smeerolie deur te syg en, behalwe in 'n skip van Klas V of VI, moet hulle skoongemaak kan word sonder om die toevoer van sodanige olie te onderbreek.

(4) Middels moet voorsien word om vas te stel of die smerstelsel behoorlik werk en om oordruk in enige deel van die stelsel te voorkom. Indien die middel om oordruk te voorkom, 'n ontlasklep is, moet dit in 'n geslote kring wees.

81. OLIEBRANDSTOFINSTALLASIES (KETELS EN MASJINERIE).

(1) In elke Hoofstuk VI-skip moet enige oliebrandstof wat in ketels of masjinerie gebruik word, behalwe soos by regulasie 42 (3) toegelaat, 'n ontvlammingspunt van minstens 150° F. hê. (Toe toets.)

(2) In elke Hoofstuk VI-skip wat 'n skip is wat deur middel van oliegestookte ketels of binnebrandmasjinerie aangedryf word, moet elke dubbelboomafdeling wat vir die opberging van oliebrandstof toegewys is en nie 'n afdeling is wat aan die uiterste voorste of agterste punt van die skip geleë is nie, toegerus word met 'n waterdigte middelverdeling.

(3) Elke oliebrandstoftenk in 'n Hoofstuk VI-skip moet behoorlik gebou wees en, waar nodig, voorsien wees van lekbakke of geute wat enige olie wat uit die tenk mag lek, sal opvang. Geen sodanige tenk mag direk bokant ketels of ander verhitte oppervlakke geleë wees nie. Sonder benadeling van die algemeenheid van die voorafgaande, moet elke sodanige tenk voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n toets met hidrouliese druk wat in die geval van 'n opgaar-, besink- of diensstyk gelyk is aan dié van 'n drukhoogte wat een voet groter is as die drukhoogte waaraan die tenk tydens gebruik onderwerp mag word, maar in die geval van 'n besinktenk, aan minstens 15 lb. per vierkante duim, en elke sodanige tenk moet te eniger tyd daarna in staat wees om so 'n toets te deurstaan.

(4) Die oliebrandstof wat 'n Hoofstuk VI-skip vervoer, moet doeltreffend geïsoleer word van waterballas wat die skip mag vervoer. Die pompinrigtings moet van so 'n aard wees dat die oliebrandstof van een opgaar- of besinktenk wat vir oliebrandstof toegewys is, na 'n ander opgaar- of besinktenk wat aldus toegewys is, oorgeplaas kan 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 wat toegewys is vir die opberging van oliebrandstof, moet 'n kofferdam voorsien word wat besoedeling van die vars water deur die olie sal voorkom.

(5) In elke Hoofstuk VI-skip moet doeltreffende middels voorsien word om elke oliebrandstoftenk daarin te peil en oordruk in so 'n tenk te voorkom.

for the propulsion or safety of the ship or persons on board, at least two pumps shall be provided each of which shall be adequate for circulating such oil: Provided that in a ship of Class V or VI and in the case of any emergency generator in any ship, only one such pump shall be required.

(2) In every ship of Class I, II or IIA propelled by turbine machinery, or having turbo-electric propelling machinery, the lubricating oil arrangements shall be such that an emergency supply of oil is available sufficient to maintain after a power failure an adequate supply of lubricating oil for at least three minutes or for such time as may be required for unloaded turbo-electric propelling machinery to come to rest from the maximum running speed. Such emergency supply shall automatically come into use on failure of the pressure supply of lubricating oil from the pump or pumps.

(3) Strainers shall be provided for straining the lubricating oil, and, except in a ship of Class V or VI, shall be capable of being cleaned without interrupting the supply of such oil.

(4) 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.

81. OIL FUEL INSTALLATIONS (BOILERS AND MACHINERY).

(1) In every Chapter VI ship, any oil fuel used in boilers or machinery shall, except as allowed by regulation 42 (3), have a flash point of not less than 150° F. (Closed test.)

(2) In every Chapter VI 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.

(3) Every oil fuel tank in a Chapter VI ship shall be properly constructed and shall, where necessary, 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 before being put into service for the first time, be subjected to 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 lb. per square inch, and every such tank shall at any time thereafter be capable of withstanding such a test.

(4) The oil fuel carried in a Chapter VI 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 another 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.

(5) In every Chapter VI ship, efficient means shall be provided for sounding every oil fuel tank therein and to prevent overpressure in such tank.

(6) In elke Hoofstuk VI-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 wanneer die tenk gevul word nie. Elke sodanige pyp moet toegerus word met 'n afneembare draadgaasdiaphragma. Indien so 'n pyp ook as 'n oorlooppyp dien, moet voorsorg getref word om te voorkom dat die oorloop in of naby 'n ketelkamer, skeepskombuis of ander plek inloop waar dit kan ontvlam.

(7) Elke dreineerpyp wat in 'n Hoofstuk VI-skip voorsien word om water uit oliebrandstof in opgaar- of besinkenken of in afskeiers te verwyder, moet die selfsluitende tipe wees.

(8) Die oliebrandstofvulposte in elke Hoofstuk VI-skip moet van ander ruimtes in die skip geïsoleer word en moet doeltreffend gedreineer en geventileer word. Voorsorg moet getref word om oordruk in enige olievluppyplyne te voorkom.

(9) In elke Hoofstuk VI-skip moet elke oliedrukpyp van naatlose staal of ander geskikte materiaal gemaak word, en indien dit vir die vervoer van verhitte olie gebruik word, moet dit in 'n opvallende posisie bokant die platforms in goed verligte dele van die ketel- of enjinkamer geleë wees. Elke sodanige pyp en las daarin en elke inrigting wat aan so 'n pyp verbind is, moet voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n toets onder 'n hidrouliese druk van 400 lb. per vierkante duim of van twee maal sy maksimum werkdruk, watter ook al die grootste is, en dit moet te eniger tyd daarna in staat wees om so 'n toets te deurmaan.

(10) In elke Hoofstuk VI-skip moet elke oliepip wat nie 'n oliedrukpyp is nie, van staal of ander geskikte materiaal gemaak word en op so 'n hoogte bo die skip se binneboom, as daar een is, geleë wees as wat die inspeksie en herstel van die pyp sal vergemaklik. Elke sodanige pyp en las daarin en elke inrigting wat aan so 'n pyp verbind is, moet voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n toets onder 'n hidrouliese druk van 50 lb. per vierkante duim of twee maal sy maksimum werkdruk, watter ook al die grootste is, en dit moet te eniger tyd daarna in staat wees om so 'n toets te deurmaan.

(11) In elke Hoofstuk VI-skip moet elke stoomverhittingspyp wat in aanraking met olie mag wees, van staal gemaak wees en, tesame met sy lasse, voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n toets onder 'n hidrouliese druk van twee maal sy maksimum werkdruk en dit moet te eniger tyd daarna in staat wees om so 'n toets te deurmaan.

(12) In elke Hoofstuk VI-skip moet elke suigpyp van enige oliebrandstoftenk wat bokant 'n binneboom geleë is, en elke oliebrandstofnivelleerpyp binne 'n ketel- of enjinkamer toegerus wees met 'n klep of kraan wat bevestig is aan elke tenk waaraan die pyp verbind is. Elke sodanige klep of kraan wat aan 'n oliebrandstofsuiqpyp aangebring is, moet so ingerig wees dat dit gesluit kan word vanaf die afdeling waarin dit geleë is, en vanaf 'n maklik toeganklike plek buitekant so 'n afdeling wat nie maklik in die geval van brand in daardie afdeling afgesny sal word nie. Elke sodanige klep of kraan wat aan 'n oliebrandstofnivelleerpyp aangebring is, moet so ingerig wees dat dit gesluit of oopgemaak kan word vanaf 'n maklik toeganklike plek bokant die beskotdek wat nie maklik deur oorstroming of 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 van 'n klep of

(6) In every Chapter VI 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.

(7) Every drain provided in a Chapter VI 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.

(8) The oil fuel filling stations in every Chapter VI 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.

(9) In every Chapter VI ship, every oil pressure pipe shall be made of seamless steel or other suitable material 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 before being put into service for the first time, be subjected to a test by hydraulic pressure to 400 lb. per square inch or to twice its maximum working pressure, whichever shall be the greater, and shall at any time thereafter be capable of withstanding such a test.

(10) In every Chapter VI ship, every oil pipe, not being an oil pressure pipe, shall be made of steel or other suitable material 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 before being put into service for the first time, be subjected to a test by hydraulic pressure to 50 lb. per square inch or to twice its maximum working pressure, whichever shall be the greater, and shall at any time thereafter be capable of withstanding such a test.

(11) In every Chapter VI ship, every steam heating pipe which may be in contact with oil shall be made of steel and, together with its joints, shall before being put into service for the first time, be subjected to a test by hydraulic pressure to twice its maximum working pressure, and shall at any time thereafter be capable of withstanding such a test.

(12) In every Chapter VI 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 a readily accessible position outside such compartment and not likely to be cut off in the event of fire in that compartment. Every such valve 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 flooding or by 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

kraan wat bevestig is aan die tenk waaraan die pyp verbind is en so ingerig is dat dit gesluit kan word vanaf die afdeling waarin dit geleë is en vanaf 'n maklik toeganklike plek buitekant so 'n afdeling wat nie maklik in die geval van brand in daardie afdeling afgesny sal word nie.

(13) In elke Hoofstuk VI-skip moet elke hoofklep by die oonde se voorkante wat die toevoer van oliebrandstof na stelle branders beheer, 'n snelsluitende tipe wees en in 'n opvallende en maklik toeganklike plek aangebring word. Voorsorg moet getref word om te voorkom dat olie na enige brander gelei word tensy so 'n brander korrek aan die olietoevoerleiding gekoppel is.

(14) In elke Hoofstuk VI-skip moet elke klep wat in verband met die oliebrandstofinstallasie gebruik word, so ontwerp en gebou wees dat dit voorkom dat die deksel van die klepkas slap of los raak wanneer die klep bedien word.

(15) In elke Hoofstuk VI-skip moet elke pomp wat vir gebruik in verband met die oliebrandstofstelsel voorsien word, afsonderlik van die skip se toevoer-, lens- en ballaspompe wees en die verbindings van enige sodanige pompe moet voorsien wees van 'n doeltreffende ontlasteklep wat in 'n geslote kring moet wees. Voorsiening moet gemaak word waardeur elke oliebrandstofdrupomp en oorvoerpomp vanaf 'n posisie buitekant die afdeling waarin so 'n pomp geleë is, tot stilstand gebring kan word.

(16) Elke Hoofstuk VI-skip moet voorsien wees van minstens twee oliebrandstofeenhede wat elkeen bestaan uit 'n drupomp, filters en 'n verhitter. So 'n pomp, filters en verhitter moet doeltreffend ontwerp en stewig gebou wees. Voorsiening moet gemaak word om oordruk in enige deel van die oliebrandstofeenhede te voorkom. Die dele van sodanige oliebrandstofeenhede wat aan oliedruk onderhevig is, en die lasse daarvan, moet voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n toets onder 'n hidrouliese druk van 400 lb. per vierkante duim of twee maal hul maksimum werkdruk, wat ook al die grootste is, en moet te eniger tyd daarna in staat wees om so 'n toets te deurstaan. Enige ontlasteklepe wat aangebring is om oordruk in die oliebrandstofverhitter te voorkom, moet in 'n geslote kring wees. Indien stoom vir die verhitting van oliebrandstof in bunkers, tenks, verhitters of afskeiers in enige so 'n skip gebruik word, moet uitlaattipe voorsien word om die kondensasiewater na 'n waarnemingstank af te voer.

(17) In elke Hoofstuk VI-skip moet lekbakke of geute onder elke oliebrandstofpomp, filter en verhitter voorsien word om enige olie wat daaruit mag lek of stort, op te vang. Lekbakke en geute moet by die oondopenings voorsien word om olie wat van die branders ontsnap op te vang. Voorsorg moet getref word om te verhinder dat olie wat van enige oliebrandstofpomp, filter of verhitter mag ontsnap, met ketels of ander verhitte oppervlakte in aanraking kom.

(18) Elke oliebrandstofafskeier in 'n Hoofstuk VI-skip moet doeltreffend ontwerp en stewig gebou wees. Voorsiening moet gemaak word om oordruk in enige deel daarvan en die uitlaat van oliedamp daaruit in beperkte ruimtes te voorkom.

(19) Indien in enige Hoofstuk VI-skip wat 'n skip is wat deur middel van oliegestookte ketels aangedryf word, dempers in die skoorstene of ketels aangebring word, moet voorsiening gemaak word om die dempers in die oop posisie te bevestig en 'n aanwyser moet voorsien word om aan te dui of die dempers oop of toe is.

(20) Vir die toepassing van hierdie regulasie sluit die uitdrukking „oliebrandstofstank” 'n oliebrandstofopbergingstank, 'n oliebrandstofbesinkstank, 'n oliebrandstofdienstank en 'n oliebrandstofoorlooptank in.

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.

(13) In every Chapter VI 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.

(14) In every Chapter VI 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.

(15) In every Chapter VI 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 such pumps 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.

(16) Every Chapter VI 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 before being put into service for the first time, be subjected to a test by hydraulic pressure to 400 lb. per square inch or twice their maximum working pressure, whichever shall be the greater, and shall at any time thereafter be capable of withstanding such a test. 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.

(17) In every Chapter VI 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.

(18) Every oil fuel separator in a Chapter VI 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.

(19) If, in any Chapter VI 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.

(20) 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.

82. OLIEBRANDSTOFINSTALLASIES.

(STOWE EN ANDER VERWARMINGSTOESTELLE.)

(1) Indien, in enige Hoofstuk VI-skip, 'n stoof of ander verwarmingstoestel van brandstof voorsien word uit 'n olietank, mag die tank nie in 'n skeepskombuis geleë wees nie en die olietoevoer na die branders moet vanaf 'n plek buite die skeepskombuis beheer kan word. Geen stoof of brander wat ontwerp is om met oliebrandstof met 'n ontvlammingspunt van minder as 150° F (65.6°C) te werk, mag aangebring word nie.

(2) Die tank 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 'n ontploffing as gevolg van die ontsnapping van oliedamp uit die pyp wanneer die tank gevul word nie. Die pyp moet voorsien wees van 'n afneembare draadgaasdiaphragma.

(3) Veilige en doeltreffende middels moet voorsien word vir die vulling van elke tank waarna in subregulasie 1) verwys word en vir die voorkoming van oordruk daarin.

83. VENTILASIE.

In elke Hoofstuk VI-skip moet elke ruimte waarin 'n oliebrandstoftank of enige deel van 'n oliebrandstofinstallasie geleë is, behoorlik geventileer wees.

84. KOMMUNIKASIE TUSSEN BRUG EN ENJINKAMER.

Elke skip van Klas I, II of IIA moet voorsien wees van weë middels om bevele van die navigasiebrug na die enjinkamerbeheerplatform oor te stuur. Een van die middels moet 'n enjinkamertelegraaf wees.

85. STUURINRICHTING.

(1) Elke Hoofstuk VI-skip moet voorsien wees van 'n oeltreffende hoof- en hulpstuurinrigting: Met die voorbehoud dat indien die hoofstuurinrigting se kragenhede n hul verbindings tot tevredenheid van die Owerheid in weevoud aangebring word en elke krageneheid die stuurinrigting in staat stel om aan die vereistes van subregulasie (2) (b) te voldoen, geen hulpstuurinrigting vereis sal word nie.

(2) In elke Hoofstuk VI-skip moet—

- (a) die hoofstuurinrigting sterk genoeg en voldoende wees om die skip teen die maksimum diensnelheid te stuur. Die hoofstuurinrigting met inbegrip van die roer en inrigtings wat daarmee in verband staan, en die roerkoning moet so ontwerp wees dat hulle nie beskadig sal word as teen die maksimum snelheid agter toe gevaar word nie;
- (b) die hoofstuurinrigting in staat wees om die roer van 35 grade aan die een kant na 35 grade aan die ander kant oor te bring terwyl die skip teen die maksimum diensnelheid vorentoe vaar. Die roer moet binne 28 sekondes teen die maksimum diensnelheid van 35 grade aan enige kant na 30 grade aan die ander kant oorgebring kan word; en
- (c) die hulpstuurinrigting vinnig in werking gebring kan word en sterk genoeg en voldoende wees om die skip teen 'n vaarbare snelheid te kan stuur en in enige skip waarin 'n roerkoning met 'n deursnee van meer as 9 duim op die plek waar die roerpen aangebring is, vereis word om aan paragraaf (a) te voldoen, moet die hulp stuurinrigting kragbediening hê.

(3) (a) In elke Hoofstuk VI-skip waarin 'n roerkoning et 'n deursnee van meer as 9 duim vereis word om aan subregulasie (2) (a) te voldoen, moet 'n alternatiewe uurpos op 'n geskikte plek aangebring word. In elke

82. OIL FUEL INSTALLATIONS.

(COOKING RANGES AND OTHER HEATING APPLIANCES.)

(1) If, in any Chapter VI ship, a cooking range or other heating appliance 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 burner shall be fitted which is 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) Safe and efficient means shall be provided for filling every tank referred to in sub-regulation (1) and for preventing overpressure therein.

83. VENTILATION.

In every Chapter VI ship, every space in which an oil fuel tank or any part of an oil fuel installation is situated, shall be adequately ventilated.

84. COMMUNICATION BETWEEN BRIDGE AND ENGINE ROOM.

Every ship of Class I, II or IIA shall be provided with two means of communicating orders from the navigating bridge to the engine room control platform. One of the means shall be an engine room telegraph.

85. STEERING GEAR.

(1) Every Chapter VI ship shall be provided with efficient main and auxiliary steering gear: Provided that if main steering gear power units and their connections are fitted in duplicate to the satisfaction of the Authority and each power unit enables the steering gear to meet the requirements of sub-regulation (2) (b), no auxiliary steering gear shall be required.

(2) In every Chapter VI ship—

- (a) the main steering gear shall be of adequate strength and sufficient to steer the ship at maximum service speed. The main steering gear, including the rudder and associated fittings, and rudder stock, shall be so designed that they are not damaged at maximum astern speed;
- (b) the main steering gear shall be capable of putting the rudder over from 35 degrees on one side to 35 degrees on the other side with the ship running ahead at maximum service speed. The rudder shall be capable of being put over from 35 degrees on either side to 30 degrees on the other side in 28 seconds at maximum service speed; and
- (c) 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 navigable speed, and in any ship in which a rudder stock of over 9 inches diameter in way of the tiller is required to comply with paragraph (a), the auxiliary steering gear shall be operated by power.

(3) (a) In every Chapter VI ship in which a rudder stock of over 9 inches is required to comply with sub-regulation (2) (a), there shall be provided a suitably located alternative steering station. In every other Chapter VI

ander Hoofstuk VI-skip moet middels voorsien word waardeur die skip vanaf 'n plek agter op die skip gestuur kan word.

(b) In elke Hoofstuk VI-skip moet die afstandstuur-beheerstelsels vanaf die hoof- en alternatiewe stuurposte so ingerig wees dat indien enige van die stelsels defek raak, dit nie sou veroorsaak dat die skip nie deur middel van die ander stelsel gestuur kan word nie. Kommunikasiemiddels moet voorsien word sodat bevele vanaf die brug na die alternatiewe stuurpos oorgestuurd kan word.

(4) In elke Hoofstuk VI-skip wat toegerus is met 'n stuurinrigting met kragbediening, moet die posisie van die roer by die hoofstuurpos aangedui word.

86. RESERWEINRIGTINGS.

Elke skip van Klas I, II of IIA moet voorsien wees van voldoende reserweinrigtings met inagneming van die diens waarvoor die skip bedoel is.

HOOFSTUK VII: DIVERSE BEPALINGS.

87. TOEPASSING VAN HOOFSTUK VII.

Tensy daar in hierdie hoofstuk anders aangedui word, is hierdie hoofstuk van toepassing op elke skip van Klas I, II, IIA, V of VI en 'n „Hoofstuk VII-skip” beteken 'n skip waarop hierdie hoofstuk van toepassing is.

88. ANKERS EN ANKERKETTINGS.

Elke Hoofstuk VII-skip moet toegerus word met sodanige ankers en ankerkettings as wat voldoende is wat betref getal, gewig en sterkte, met inagneming van die grootte van die skip en die diens waarvoor dit bedoel is.

89. TROSSE EN VERHAALTOUE.

Elke Hoofstuk VII-skip moet toegerus word met sodanige trosse en verhaaltoue as wat voldoende is wat betref getal en sterkte met inagneming van die grootte van die skip en die diens waarvoor dit bedoel is.

90. NOODUITGANGE.

(1) Elke Hoofstuk VII-skip wat nie 'n oop of gedeeltelik gedekte skip van Klas V of VI is nie, moet voorsien wees van sodanige deure, trappe, lere en ander nooduitgange wat gereedlik toeganklike nooduitgange vir alle persone aan boord die skip sal verskaf. Die nooduitgange moet so ontwerp en gebou wees dat hulle maklik 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.

(2) In elke skip van Klas I, II of IIA moet daar onder die beskotdek minstens twee nooduitgange vanaf elke afdeling wat deur waterdigte beskotte begrens word, of van elke dergelike beperkte ruimte of groep ruimtes voorsien word en minstens een van die nooduitgange wat uit elke sodanige afdeling, of uit elke sodanige ruimte of groep ruimtes voorsien word, moet onafhanklik van waterdigte deure wees.

(3) In elke skip van Klas I, II of IIA moet daar bo die beskotdek minstens twee nooduitgange uit elke ruimte wat deur vertikale hoofsonebeskotte begrens word, of uit elke dergelike beperkte ruimte of groep ruimtes voorsien word, en een van die nooduitgange wat uit elke ruimte of groep ruimtes voorsien word, moet toegang verleen tot die reddingsboot- of reddingsvlotingskepingsdek of -dekke, of tot 'n trap wat na sodanige dekke lei.

(4) In elke skip van Klas I, II of IIA moet minstens een van die nooduitgange wat voorsien word, ingesluit wees ten einde sover doenlik, deurlopende brandskuiling

ship, means shall be provided by which the ship can be steered from a position aft.

(b) In every Chapter VI ship, the remote steering control systems from the principal and alternative steering stations shall be so arranged that failure of either system will not result in inability to steer the ship by means of the other systems. Means of communication shall be provided to enable orders to be transmitted from the bridge to the alternative steering station.

(4) In every Chapter VI ship which is fitted with power operated steering gear, the position of the rudder shall be indicated at the principal steering station.

86. SPARE GEAR.

Every ship of Class I, II or IIA shall be provided with sufficient spare gear having regard to the intended service of the ship.

CHAPTER VII: MISCELLANEOUS.

87. APPLICATION OF CHAPTER VII.

Unless otherwise indicated in this Chapter, this Chapter applies to every ship of Class I, II, IIA, V or VI, and „Chapter VII ship” means a ship to which this Chapter applies.

88. ANCHORS AND CHAIN CABLES.

Every Chapter VII 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.

89. HAWSERS AND WARPS.

Every Chapter VII 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.

90. MEANS OF ESCAPE.

(1) Every Chapter VII ship, not being an open or partially-decked ship of Class V or 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.

(2) In every ship of Class I, II or IIA, there shall be provided below the bulkhead deck at least two means of escape from each compartment bounded by watertight bulkheads or from each similarly restricted space or group of spaces, and at least one of the means of escape provided from each such compartment or from each such space or group of spaces shall be independent of watertight doors.

(3) In every ship of Class I, II or IIA, there shall be provided above the bulkhead deck at least two means of escape from each space bounded by main vertical or bulkheads or from each similarly restricted space or group of spaces, and one of the means of escape provided from each space or group of spaces shall give access to the lifeboat or liferaft embarkation deck or decks or to a stairway leading to such decks.

(4) In every ship of Class I, II or IIA, at least one of the means of escape so provided shall be enclosed so as to afford, as far as practicable, continuous fire shelter

te bied vanaf die hoogte waar dit begin tot by die reddingsboot- en reddingsvlotingskepingssdek of -dekke.

(5) In elke skip van Klas V of VI wat nie 'n oop of gedeeltelik gedekte skip is nie, moet die nooduitgange lei na 'n oop dek met 'n groot genoeg oppervlakte met inagneming van die getal persone wat die skip mag vervoer.

(6) Elke skip van Klas V of VI wat 'n oop of gedeeltelik gedekte skip is, moet voorsien wees van maklik toeganklike nooduitgange uit alle ingeslote ruimtes in die skip. Sulke nooduitgange moet voldoende wees wat getal en wydte betref met inagneming van die getal persone wat in genoemde ruimtes mag wees.

(7) In die masjinerieruimtes in elke Hoofstuk VII-skip wat nie 'n skip is wat ongedek is waar die masjinerieruimte is nie, moet daar uit elke enjinkamer, astonnell en ketelkamer twee nooduitgange so ver doenlik van mekaar af voorsien word waarvan een 'n waterdigte deur mag wees indien so 'n deur as 'n nooduitgang beskikbaar is. Wanneer daar nie so 'n waterdigte deur beskikbaar is nie, moet die twee nooduitgange bestaan uit twee stelle staallere wat na afsonderlike deure in die omhulsel of elders lei vanwaar daar toegang na die reddingsboot- of reddingsvlotingskepingssdek of -dekke is.

(8) In elke skip van Klas I moet geskikte tekens in gange en op trappe vertoon word wat die rigting van vlugroetes na passasiermonsterposte aandui. Sulke tekens moet voortdurend verlig wees en moet voldoende wees wat getal en verspreiding betref. Hulle moet deur die skip se noodverligtingstelsel verlig kan word.

(9) In elke Hoofstuk VII-skip moet die nooduitgange uit enige openbare kamer wat vir konserte, rolprentvertonings of dergelike vorms van vermaak gebruik mag word, voldoende wees met inagneming van die getal persone wat in die gehoor mag wees en die sitplekke moet in rye gerangskik wees om vrye toegang tot die uitgange te verseker. Wanneer in enige sodanige openbare kamer getemperde verligting gebruik word, moet die uitgange duidelik met verligte tekens gemerk word en enige deure moet gebou word om na buite oop te maak.

91. RELINGS, STUTTE EN VERSKANSINGS.

(1) In elke Hoofstuk VII-skip moet verskansings of relings voorsien word op elke blootgestelde dek waartoe enige persone of voertuie toegang mag hê. Sulke verskansings of relings, tesame met stutte wat die relings steun, moet so geplaas, ontwerp en gebou wees en veral so hoog bo die dek wees dat dit voorkom dat enige persoon wat toegang tot daardie dek mag hê, of enige voertuig per ongeluk daarvan kan afval. Enige waterafvoerpoorte wat in so 'n verskansing aangebring is, moet 'n rooster of tralies voor hê om te verhoed dat enige persoon deur die poort val.

(2) In enige oop of gedeeltelik gedekte skip van klas V of VI moet elke watergang, dekplank en luikhoof so geleë, ontwerp en gebou wees en veral so hoog bokant die vloerplanke wees dat dit verhoed dat enige persoon per ongeluk oorboord val.

HOOFSTUK VIII: EKWIVALENTE EN VRYSTELLINGS.

92. EKWIVALENTE.

Waar hierdie Deel vereis dat die romp of masjinerie van 'n skip op 'n bepaalde manier gebou moet word, of dat bepaalde uitrusting verskaf moet word of bepaalde voorsiening gemaak moet word, kan die Owerheid toelaat dat die romp of masjinerie van die skip op enige ander manier gebou word, of enige ander uitrusting ver-

from the level of its origin to the lifeboat and liferaft embarkation deck or decks.

(5) In every ship of Class V or 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 which the ship may carry.

(6) Every ship of Class V or 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.

(7) In the machinery spaces in every Chapter VII ship, not being a ship undecked in way of the machinery space, there shall be provided from each engine room, shaft tunnel and boiler room two means of escape as widely separated as practicable, one of which may be a watertight door if such a door is available as a means of escape. Where no such watertight door is available, the two means of escape shall consist of two sets of steel ladders leading to separate doors in the casing or elsewhere from which there is access to the lifeboat or liferaft embarkation deck or decks.

(8) In every ship of Class I, suitable signs shall be displayed in corridors and stairways indicating the direction of escape routes to passenger muster stations. Such signs shall be continuously illuminated and shall be adequate in number and distribution. They shall be capable of being illuminated by the ship's emergency lighting system.

(9) In every Chapter VII ship, the means of escape from any public room which may be used for the purpose of concerts, cinema shows or similar forms of entertainment, shall be adequate having regard to the number of persons who may be in the audience, and the seating shall be arranged in rows to ensure free access to the exits. Where in any such public rooms subdued lighting is used, the exits shall be clearly marked with illuminated signs, and any doors shall be constructed to open outwards.

91. GUARD RAILS, STANCHIONS AND BULWARKS.

(1) In every Chapter VII ship, bulwarks or guard rails shall be provided on every exposed deck to which any persons or vehicles 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 or any vehicle 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 V or 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.

92. 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 that particular provision shall be made, the Authority may allow the hull or machinery of the ship to be constructed in any other manner, or any other equipment to be provided or

skap word, of ander voorsiening gemaak word, indien hy tevrede is dat daardie ander konstruksie, uitrusting of voorsiening minstens net so doeltreffend is as die wat by hierdie Deel vereis word.

93. ALGEMENE VRYSTELLING.

Die Owerheid kan enige skip wat voor die datum van inwerkingtreding van hierdie Deel gebou is en nie 'n skip is wat op of na daardie datum vir diens as 'n passasierskip omskep is nie, vrystel van die vereistes van hierdie Deel vir sover hy tevrede is dat voldoening daaraan onredelik of onprakties is onder die omstandighede.

94. VRYSTELLING VIR SEKERE SKEPE OP BEPERKTE DIENS.

Die Owerheid kan enige skip van Klas II of IIA wat nie verder as 20 myl van die naaste land af vaar nie, vrystel van die vereistes van hierdie Deel vir sover hy tevrede is dat voldoening daaraan vanweë die beskutte aard en toestande van die diens waarvoor die skip bedoel is, onredelik of onprakties is.

95. VRYSTELLING TEN OPSIGTE VAN DUBBELE BOME.

(1) Die Owerheid kan enige skip van Klas I, II of IIA vrystel van die vereistes van regulasie 10 (4) ten opsigte van enige put wat hy tevrede is dat dit nie die beskerming wat deur die dubbele boom verleen word, sal verminder nie.

(2) Die Owerheid kan enige skip van Klas II of IIA vrystel van die vereistes van regulasie 10 ten opsigte van 'n dubbele boom in enige gedeelte van die skip wat ingedeel is deur die toepassing van 'n indelingsfaktor van hoogstens 0.5, indien hy tevrede is dat die aanbring van 'n dubbele boom in daardie gedeelte van die skip nie verenigbaar met die ontwerp en behoorlike werking van die skip is nie.

96. VRYSTELLING TEN OPSIGTE VAN OPENINGS IN DIE HUIDBEPLATING ONDERKANT DIE INDOMPELINGS- GRENSLYN.

Die Owerheid kan enige Hoofstuk II-skip van Klas V of VI vrystel van die vereistes van regulasie 19 (8) vir sover hy tevrede is dat voldoening daaraan onder die omstandighede onredelik of onprakties is.

97. VRYSTELLING TEN OPSIGTE VAN BRANDBEVEILIGINGS- METODES.

Die Owerheid kan enige Hoofstuk V-skip van Klas I, II of IIA vrystel van die vereistes van regulasie 50 vir sover hy tevrede is dat voldoening daaraan onverenigbaar is met die doel waarvoor die skip ontwerp is en dat ander ewe doeltreffende brandbeveiligingsmetodes in die skip toegepas is.

98. VRYSTELLING TEN OPSIGTE VAN KLAS A- EN KLAS B- VERDELINGS.

Die Owerheid kan enige Hoofstuk V-skip van Klas I, II of IIA vrystel van die vereistes van regulasie 51 betreffende isolering vir sover hy tevrede is dat voldoening daaraan onnodig is met inagneming van die mate van brandgevaar wat bestaan.

99. VRYSTELLING TEN OPSIGTE VAN OUTOMATIESE BRAND-ALARM- EN BRANDVERKLIKSTELS: METODE I EN III.

Die Owerheid kan enige Hoofstuk V-skip van Klas I, II of IIA vrystel van die vereistes van regulasie 56 vir sover hy tevrede is dat die akkommodasie- en diensruimtes daarin geen wesentlike brandgevaar skep nie.

other provision made, if he is satisfied that such other construction, equipment or provision is at least as effective as that required by this Part.

93. GENERAL EXEMPTION.

The Authority 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.

94. EXEMPTION FOR CERTAIN SHIPS ON LIMITED SERVICE.

The Authority may exempt any ship of Class II or IIA which does not proceed more than 20 miles from the nearest land from the requirements of this Part to the extent that he is satisfied that compliance therewith is unreasonable or impracticable by reason of the sheltered nature and conditions of the intended service of the ship.

95. EXEMPTION IN RESPECT OF DOUBLE BOTTOMS.

(1) The Authority may exempt any ship of Class I, II or IIA from the requirements of regulation 10 (4) in respect of any well which he is satisfied will not diminish the protection given by the double bottom.

(2) The Authority may exempt any ship of Class II or IIA from the requirements or regulation 10 in respect of a double bottom in any portion of the ship which is subdivided by application 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.

96. EXEMPTION IN RESPECT OF OPENINGS IN THE SHELL PLATING BELOW THE MARGIN LINE.

The Authority may exempt any Chapter II ship of Class V or VI from the requirements of regulation 19 (8) to the extent to which he is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.

97. EXEMPTION IN RESPECT OF METHODS OF FIRE PROTECTION.

The Authority may exempt any Chapter V ship of Class I, II or IIA from the requirements of regulation 50 to the extent that 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.

98. EXEMPTION IN RESPECT OF "A" AND "B" CLASS DIVISIONS.

The Authority may exempt any Chapter V ship of Class I, II or IIA from the requirements of regulation 51 relating to insulation, to the extent that he is satisfied that compliance therewith is unnecessary having regard to the degree of fire hazard present.

99. EXEMPTION IN RESPECT OF AUTOMATIC FIRE ALARM AND FIRE DETECTION SYSTEMS: METHODS I AND III.

The Authority may exempt any Chapter V ship of Class I, II or IIA from the requirements of regulation 56 to the extent that he is satisfied that the accommodation spaces and service spaces therein afford no substantial fire risk.

100. VRYSTELLING TEN OPSIGTE VAN OUTOMATIESE SPRINKELBLUS-, BRANDALARM- EN BRANDVERKLIKSTELS.

Die Owerheid kan enige Hoofstuk V-skip van Klas I, II of IIA vrystel van die vereistes van regulasie 57 (1)—

- (a) vir sover hy tevrede is dat die akkommodasie- en diensruimtes daarin geen wesenlike brandgevaar skep nie;
- (b) ten opsigte van enige bagasie- of pakkamer wat hy tevrede is dat dit van toereikende reëlins vir die verklik van 'n brand en die smoor van brand deur gas of ander geskikte middels voorsien is.

101. VRYSTELLING TEN OPSIGTE VAN BEVEILIGING VAN TRAPPE.

Die Owerheid kan enige Hoofstuk V-skip van Klas I, II of IIA vrystel van die vereistes van regulasie 58 (2) met betrekking tot enige trap wat hy tevrede is dat dit 'n hulptrap is wat behoorlik deur sprinkelblussers beveilig is.

102. VRYSTELLING TEN OPSIGTE VAN DIVERSE BRANDBEVEILIGINGSITEMS.

Die Owerheid kan enige Hoofstuk V-skip van Klas I, II of IIA vrystel van die vereistes van regulasie 64 (2) (b) indien hy tevrede is dat geen brandgevaar sy voorsprong in die ruimtes wat in daardie regulasie genoem word, sal hê nie.

103. VRYSTELLING TEN OPSIGTE VAN DIE BOU VAN 'N KLAS V- OF KLAS VI-SKIP.

Die Owerheid kan enige skip van Klas V of VI geheel en al of gedeeltelik van die vereistes van regulasie 68 vrystel.

104. VRYSTELLING TEN OPSIGTE VAN NOODUITGANGE.

Die Owerheid kan enige skip van Klas I, II, IIA, V of VI wat 'n skip van minder as 2,000 ton is, vrystel van die vereistes van regulasie 90 (7).

DEEL II.

(Vragskepe.)

HOOFSTUK I—ALGEMEEN.

105. 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—

„akkommodasie-ruimtes” passasiersruimtes, gange, toiletkamers, kajuite, kantore, bemanningsruimtes, barbierswinkels, geïsoleerde aanrekgamers en sluitkaste en dergelike ruimtes;

† „Owerheid” enige persoon of liggaam van persone wat deur die Minister goedgekeur is;

„Klas B-paneel” 'n paneel wat aan die vereistes van regulasie 117 (1) voldoen;

„beskotdek” die dek tot waar die meeste van die waterdigte dwarsbeskotte opgetrek is;

„beheerposte” ruimtes waarin radio-, hoofnavigasie- of sentrale brandverkluiustrusting of die noodgenerator geleë is;

100. EXEMPTION IN RESPECT OF AUTOMATIC SPRINKLER, FIRE ALARM AND FIRE DETECTION SYSTEMS.

The Authority may exempt any Chapter V ship of Class I, II or IIA from the requirements of regulation 57 (1):—

- (a) to the extent that he is satisfied that the accommodation spaces and service spaces therein afford no substantial fire risk;
- (b) 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 other suitable means.

101. EXEMPTION IN RESPECT OF PROTECTION OF STAIRWAYS.

The Authority may exempt any Chapter V ship of Class I, II or IIA from the requirements of regulation 58 (2) in relation to any stairway which he is satisfied is an auxiliary stairway adequately protected by sprinklers.

102. EXEMPTION IN RESPECT OF MISCELLANEOUS ITEMS OF FIRE PROTECTION.

The Authority may exempt any Chapter V ship of Class I, II or IIA from the requirements of regulation 64 (2) (b) if he is satisfied that there is no risk of fire originating in the spaces mentioned in that regulation.

103. EXEMPTION IN RESPECT OF STRUCTURE OF CLASS V OR VI SHIP.

The Authority may exempt any ship of Class V or VI wholly or in part from the requirements of regulation 68.

104. EXEMPTION IN RESPECT OF MEANS OF ESCAPE.

The Authority may exempt any ship of Class I, II, IIA, V or VI, being a ship of less than 2,000 tons, from the requirements of regulation 90 (7).

PART II.

(Cargo ships.)

CHAPTER I—GENERAL.

105. 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—

“accommodation spaces” means passenger spaces, corridors, lavatories, cabins, offices, crew spaces, barber shops, isolated pantries and lockers and similar spaces;

† “Authority” means any person or body of persons approved by the Minister;

“B Class panel” means a panel complying with the requirements of regulation 117 (1);

“bulkhead deck” means the deck up to which the majority of transverse watertight bulkheads are carried;

“control stations” means spaces in which radio, main navigating or central fire-recording equipment, or the emergency generator, are located;

„ekwivalente materiaal” waar die woorde in die uitdrukking „staal of ander ekwivalente materiaal” gebruik word, enige materiaal wat op sigself of vanweë isolering wat voorsien is, struktuur- en integriteitseienskappe het wat na afloop van ’n toepaslike brandtoets gelykstaan met staal;

„bruto tonnemaat” in die geval van ’n skip met ’n dubbele tonnemaat, die grootste van die twee bruto tonnemaatsyfers;

„onbrandbare materiaal” materiaal wat wanneer dit tot ’n temperatuur van 1,382° F (750° C.) verhit word, nie brand of ontlambare dampe in genoegsame hoeveelheid afgee om by ’n aansteekvlam te ontvlam, of die temperatuur van die toetsoond met 90° F (50° C.) of meer bo 1,382° F (750° C.) laat styg wanneer dit ooreenkomstig die Britse Standaardspesifikasie 476: Deel I: 1953 getoets word nie en die uitdrukking „brandbare materiaal” moet dienoooreenkomstig vertolk word;

„lengte”, met betrekking tot die lengte van ’n skip, (a) die lengte in voet op die somerlaswaterlyn vanaf die voorkant van die voorstewe tot by die agterkant van die roerpos, of (b) vir ’n skip sonder ’n roerpos, die lengte in voet vanaf die voorkant van die voorstewe tot by die as van die roerkoning of (c) vir ’n skip met ’n kruiseragterstewe, die lengte in voet wat geneem moet word as 96 persent van die totale lengte op die somerlaswaterlyn, of as die lengte vanaf die voorkant van die voorstewe tot by die as van die roerkoning, watter ook al die grootste is;

„masjineriebeheerkamer” ’n kamer vanwaar die aandrywingsmasjinerie en stoomketels wat in die aandrywingsbehoefte voorsien, beheer kan word;

„masjinerieruimte” enige ruimte wat gebruik word vir aandryf-, hulp- of verkoelingsmasjinerie, ketels, pompe, ingenieurswerkinkels, generators, ventilasie- of lugversorgingsmasjinerie, olievluposte en dergelike ruimtes en verkeerskokers na sulke ruimtes;

„maksimum diensnelheid” die hoogste snelheid wat die skip ontwerp is om op see op sy diepste seevarende diepgang te handhaaf;

„bestuurbare snelheid” die minimum snelheid waarteen die skip doeltreffend vorentoe gestuur kan word;

„oliebrandstofeenheid” die uitrusting wat gebruik word vir die gereedmaking van oliebrandstof vir lewering aan die oliebranders van ’n oliegestookte ketel en dit sluit die oliedrukpompe, filters en verhitters in;

„besinktenk” ’n olieopgaartenk met ’n verwarmingsoppervlakte van minstens 2 vierkante voet per ton olieinhoudsmaat;

„standaardbrandtoets” ’n toets waarin ’n monster van die materiaal wat getoets moet word met ’n oppervlakte van minstens 50 vierkante voet en ’n hoogte van 8 voet in ’n toetsoond blootgestel word aan ’n reeks tydtemperatuurverhoudings ongeveer soos volg:

aan die einde van die eerste 5 minute—1,000° F. (538° C.);

aan die einde van die eerste 10 minute—1,300° F. (704° C.);

aan die einde van die eerste 30 minute—1,550° F. (843° C.);

„stuurinrigtingkrageneheid”—

(a) in die geval van ’n elektriese stuurinrigting, die elektriese motor en die elektriese uitrusting wat daaraan verbonde is;

(b) in die geval van ’n elektrohidrouliese stuurinrigting, die elektriese motor, die elektriese uitrusting daaraan verbonde en die pomp wat daaraan verbind is; of

(c) in die geval van ’n stoomhidrouliese of ’n pneumatieshidrouliese stuurinrigting die dryfenjin en die pomp wat daaraan verbind is;

„equivalent material” where the words are used in the expression “steel or other equivalent material”, means any material which, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of an appropriate fire test;

„gross tonnage” in the case of a ship having dual tonnage, means the larger of the two gross tonnage figures;

„incombustible material” means material which when heated to a temperature of 1,382° F. (750° C.) neither burns nor gives off inflammable vapours in sufficient quantity to ignite at a pilot flame nor raises the temperature of the test furnace 90° F. (50° C.) or more above 1,382° F. (750° C.) when tested in accordance with British Standard Specification 476: Part 1: 1953, and the expression “combustible material” shall be construed accordingly;

„length”, in relation to the length of a ship, means (a) the length in feet on the summer load water-line from the foreside of the stem to the afterside of the rudder post, or (b) for a ship with no rudder post, the length in feet from the foreside of the stem to the axis of the rudder stock, or (c) for a ship with a cruiser stern, the length in feet which shall be taken as 96 per cent of the total length on the summer load water-line or as the length from the foreside of the stem to the axis of the rudder stock, whichever is the greater;

„machinery control room” means a room from which the propelling machinery and boilers serving the needs of propulsion may be controlled;

„machinery space” means any space used for propelling, auxiliary or refrigerating machinery, boilers, pumps, engineers’ workshops, generators, ventilation or air conditioning machinery, oil filling stations and similar spaces and trunkways to such spaces;

„maximum service speed” means the greatest speed which the ship is designed to maintain at sea at her deepest seagoing draught;

„navigable speed” means the minimum speed at which the ship can be effectively steered in the ahead direction;

„oil fuel unit” means the equipment used for the preparation of oil fuel for delivery to the oil burners of an oil-fired boiler, and includes the oil pressure pumps, filters and heaters;

„settling tank” means an oil storage tank having a heating surface of not less than 2 square feet per ton of oil capacity;

„standard fire test” means a test in which a specimen of the material to be tested has a surface area of not less than 50 square feet and a height of 8 feet and is exposed in a test furnace to a series of time-temperature relationships approximately 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.);

„steering gear power unit” means—

(a) in the case of electric steering gear, the electric motor and its associated electrical equipment;

(b) in the case of electro-hydraulic steering gear, the electric motor, its associated electrical equipment and connected pump; or

(c) in the case of steam-hydraulic or pneumatic-hydraulic steering gear, the driving engine and connected pump;

„geskik” met betrekking tot materiaal, deur die Minister goedgekeur as geskik vir die doel waarvoor dit gebruik word;

„tenkskip” ’n skip behalwe ’n passasierskip wat gebou of omskep is vir die massavervoer van vloeibare vragte van ’n ontvlambare aard;

„ton” bruto ton.

*Vir die toepassing van hierdie Deel het die Minister die volgende beamptes as „bevoegde beamptes” in die Republiek aangewys—

Te Kaapstad, Durban, Port Elizabeth en Walvisbaai:
Die Eerste Beampte van die Marine-afdeling.

†Die Minister het die volgende Owerhede vir die doeleindes van hierdie Deel goedgekeur:

Lloyds’ Register of Shipping;
Bureau Veritas;
American Bureau of Shipping;
Germanischer Lloyd;
Hellenic Register of Shipping;
Det Norske Veritas.

106. TOEPASSING VAN DEEL II.

(1) Onderworpe aan die bepalings van subregulasie (2), is hierdie Deel van toepassing op—

(a) elke skip van 500 ton of meer wat in die Republiek geregistreer is, of wat kragtens die Wet vereis word om aldus geregistreer te wees; en

(b) elke skip van 500 ton of meer wat in ’n ander land behalwe die Republiek geregistreer is,

en wat internasionale reise onderneem, of bedoel is om sulke reise te onderneem en nie ’n passasierskip, vissersboot, robbevaarder, walvisvaarder, plesierjag of ’n skip wat nie deur meganiese middels aangedryf word, is nie.

(2) Regulasie 109 (2), (3), (4) en (5), regulasies 111 tot en met 118, regulasies 119 (2), 124 (2), 126 (2) (c) en (d), 130, 131 (2) en (3) en regulasie 134 (2) is nie van toepassing op ’n skip waarvan die kiel voor 26 Mei 1965 gelê is nie.

HOOFSTUK II—KONSTRUKSIE.

107. BOUSTERKTE.

Die bousterkte van elke skip en die getal en plasing van waterdigte dwarsbeskotte moet voldoende wees vir die diens waarvoor die skip bedoel is.

108. VOORLEGGING EN GOEDKEURING VAN PLANNE.

Voordat daar met die bou van enige skip begin word, moet die bouer of eienaar daarvan sodanige planne en besonderhede as wat die Minister of Owerheid mag vereis, in duplo vir goedkeuring aan die Minister of Owerheid, na gelang van die geval, voorlê.

109. WATERDIGTE DEURE.

(1) In elke skip waarin ’n waterdigte deur aangebring word om die waterdigte integriteit van ’n beskot te handhaaf, moet elke sodanige waterdigte deur van geskikte materiaal gemaak word en doeltreffend gebou wees vir die diens waarvoor dit bedoel is.

(2) In elke skip waarop hierdie subregulasie van toepassing is, moet—

(a) elke waterdigte deur van die skuiftipe bedien kan word deur ’n doeltreffende handinrigting sowel by die deur self as van ’n toeganklike plek bokant die beskotdek vandaan; en

(b) die bedieningsinrigting om enige waterdigte skuifdeur wat in die beskot van ’n masjinerieruimte aangebring is, van bokant die beskotdek vandaan te bedien, buite die masjinerieruimte geleë wees, tensy so ’n plek nie met die doeltreffende inrigting van die nodige ratwerk verenigbaar is nie.

„suitable” in relation to materials, means approved by the Minister as suitable for the purpose for which it is used;

„tanker” means a ship, other than a passenger ship, constructed or adapted for the carriage in bulk of liquid cargoes of an inflammable nature;

„tons” means gross tons.

*For the purposes of this Part, the Minister has designated the following officers as “proper officers” in the Republic:—

At Cape Town, Durban, Port Elizabeth and Walvis Bay:

The Principal Officer of the Marine Division.

†For the purposes of this Part, the Minister has approved the following Authorities:—

Lloyd’s Register of Shipping;
Bureau Veritas;
American Bureau of Shipping;
Germanischer Lloyd;
Hellenic Register of Shipping;
Det Norske Veritas.

106. APPLICATION OF PART II.

(1) Subject to the provisions of sub-regulation (2), this Part applies to—

(a) every ship of 500 tons or over which is registered in the Republic or which is, in terms of the Act, required to be so registered; and

(b) every ship of 500 tons or over which is registered in a country other than the Republic,

and which plies or is intended to ply on international voyages, not being a passenger ship, fishing boat, sealing boat, whaling boat, pleasure yacht or a ship which is not propelled by mechanical means.

(2) Regulation 109 (2), (3), (4) and (5), regulations 111 to 118 inclusive, regulations 119 (2), 124 (2), 126 (2) (c) and (d), 130, 131 (2) and (3) and regulation 134 (2) do not apply to a ship the keel of which was laid before 26th May, 1965.

CHAPTER II—CONSTRUCTION.

107. STRUCTURAL STRENGTH.

The structural strength of every ship and the number and disposition of transverse watertight bulkheads, shall be adequate for the service for which the ship is intended.

108. SUBMISSION AND APPROVAL OF PLANS.

Before the construction of any ship is commenced, the builder or owner thereof shall submit in duplicate to the Minister or Authority for approval such plans and particulars as may be required by the Minister or Authority, as the case may be.

109. WATERTIGHT DOORS.

(1) In every ship in which a watertight door is provided to maintain the watertight integrity of a bulkhead, every such watertight door shall be made of suitable material and shall be efficiently constructed for its intended duty.

(2) In every ship to which this sub-regulation applies—

(a) every watertight door of the sliding type, shall be capable of being operated by efficient hand operated gear both at the door itself and from an accessible position above the bulkhead deck; and

(b) the operating gear for operating from above the bulkhead deck any sliding watertight door fitted in the bulkhead of a machinery space, shall be situated outside the machinery space, unless such a position is inconsistent with the efficient arrangement of the necessary gearing.

(3) In elke skip waarop hierdie subregulasie van toepassing is, moet die toegangsopening, wanneer daar toegang van die onderste gedeelte van die masjinerieruimte na 'n waterdigte astonneel is, voorsien wees van 'n waterdigte skuifdeur wat plaaslik van weerskante van die deur vandaan bedien kan word.

(4) In elke skip waarop hierdie subregulasie van toepassing is, moet daar by afstandsbedieningsplekke middels voorsien word om aan te dui wanneer 'n skuifdeur toe is.

(5) In elke skip waarop hierdie subregulasie van toepassing is, moet die waterdigte deure bedien kan word wanneer die skip 'n slagsy van tot 15 grade na enige kant toe het.

110. LENS POMP INRICHTINGS.

Elke skip moet voorsien wees van doeltreffende lenspompinstallasies en dreineermiddels wat so ingerig is dat water wat enige deel van die romp behalwe 'n ruimte wat permanent toegewys is vir die vervoer van vars water, waterballas, oliebrandstof of vloeibare vrag en waarvoor doeltreffende pomp- of dreineermiddels voorsien is, binnekom, deur minstens een suigleiding uitgepomp kan word wanneer die skip gelyklastig is of 'n slagsy van hoogstens 5 grade na enige kant toe het. Suigleidings na die kante moet aangebring word waar dit vir die doel nodig is. Doeltreffende middels moet voorsien word waardeer water maklik na die suigleidings kan vloei.

Met die voorbehoud dat die Minister kan toelaat dat daar in bepaalde afdelings van enige skip of klas skepe sonder pomp of dreineermiddels klaargekom word, indien hy tevrede is dat die veiligheid van die skip nie daardeur benadeel word nie.

111. ELEKTRIESE UITRUSTING EN INSTALLASIES—ALGEMEEN.

(1) In elke skip waarop hierdie regulasie van toepassing is, moet die elektriese uitrusting en installasies, insluitend enige elektriese aandrywingsmiddels, sodanig wees dat die skip en alle persone aan boord teen elektriese gevare beskerm is.

(2) Elke skip waarop hierdie regulasie van toepassing is en wat 'n skip is waarin elektriese krag die enigste krag is vir die instandhouding van hulpdienste wat noodsaaklik vir die aandrywing en veiligheid van die skip is, moet voorsien wees van twee of meer ontwikkelstelle met so 'n krag dat die voormelde dienste in stand gehou kan word wanneer enigeen van die stelle buite werking is.

(3) In elke skip waarop hierdie regulasie van toepassing is, moet, wanneer die elektriese las dienste insluit wat noodsaaklik vir die aandrywing of veiligheid van die skip is en die normale seelas sodanig is dat twee of meer generators parallel moet werk, reëlins getref word om voldoende nie-noodsaaklike las outomaties uit te klink wanneer die totale stroom die verbonde generatorvermoë oorskry.

112. NOODBRON VAN ELEKTRIESE KRAG: SKEPE VAN 5,000 TON OF MEER.

(1) In elke skip waarop hierdie regulasie van toepassing is en wat 'n skip van 5,000 ton of meer is, moet op 'n plek bokant die boonste deurlopende dek en buitekant die masjineriekaste, 'n selfstandige noodbron van elektriese krag voorsien word wat so ingerig is dat dit sal verseker dat dit sal funksioneer in die geval van brand of 'n ander ongeluk wat veroorsaak dat die hoofelektrisiteitsinstallasie onklaar raak.

(2) In elke skip waarna in subregulasie (1) verwys word, moet die noodbron van elektriese krag wat by daardie subregulasie vereis word, die volgende dienste vir 'n

(3) In every ship to which this sub-regulation applies, where there is access from the lower part of the machinery space to a watertight shaft tunnel, the access opening shall be provided with a sliding watertight door which shall be capable of being operated locally on both sides of the door.

(4) In every ship to which this sub-regulation applies, means shall be provided at remote operating positions to indicate when a sliding door is closed.

(5) In every ship to which this sub-regulation applies, watertight doors shall be capable of being operated when the ship is listed up to 15 degrees either way.

110. BILGE PUMPING ARRANGEMENTS.

Every ship shall be provided with efficient bilge pumping plant and means for drainage so arranged that water entering any part of the hull, other than a space permanently appropriated for the carriage of fresh water, water ballast, oil fuel or liquid cargo and for which other efficient means of pumping or drainage are provided, can be pumped out through at least one suction pipe when the ship is on even keel or is listed not more than 5 degrees either way. Wing suction shall be provided where necessary for this purpose. Efficient means shall be provided whereby water may easily flow to the suction pipes.

Provided that the Minister may allow the means of pumping or drainage to be dispensed with in particular compartments of any ship or class of ships, if he is satisfied that the safety of the ship is not thereby impaired.

111. ELECTRICAL EQUIPMENT AND INSTALLATIONS—GENERAL.

(1) In every ship to which this regulation applies, the electrical equipment and installations including any electrical means of propulsion, shall be such that the ship and all persons on board are protected against electrical hazards.

(2) Every ship to which this regulation applies, being a ship in which electric power is the only power for maintaining auxiliary services essential for the propulsion or safety of the ship, shall be provided with two or more generating sets of such power that the aforesaid services can be operated when any one of the sets is out of service.

(3) In every ship to which this regulation applies where the electrical load includes services essential for the propulsion or safety of the ship and the normal sea load is such that two or more generators are required to operate in parallel, arrangements shall be made to trip automatically sufficient non-essential load when the total current exceeds the connected generator capacity.

112. EMERGENCY SOURCE OF ELECTRIC POWER: SHIPS OF 5,000 TONS OR OVER.

(1) In every ship to which this regulation applies being a ship of 5,000 tons or over, there shall be provided in a position above the uppermost continuous deck and outside the machinery casings, a self-contained emergency source of electric power so arranged as to ensure it functioning in the event of fire or other casualty causing failure of the main electrical installation.

(2) In every ship referred to in sub-regulation (1), the emergency source of electric power required by that sub-

periode van minstens 6 uur gelyktydig in stand kan hou—

- (a) die noodverligting wat vereis word by regulasie 45 (3) (a) en (b) van die Regulasies betreffende Reddingsuitrusting, 1968;
 - (b) 'n noodverligtingstelsel wat in die hoofmasjinerie-ruimte, die ruimte wat die skip se hoofelektrisiteitsontwikkelinginstallasie bevat, op die navigasiebrug en in die kaartkamer voorsien moet word;
 - (c) die algemene alarm, indien dit elektries werk;
 - (d) die skip se navigasieligte, indien dit uitsluitlik elektries is en;
 - (e) die dagseinlamp indien dit deur die skip se hoofbron van elektriese krag bedien word.
- (3) In elke skip waarna in subregulasie (1) verwys word, moet—
- (a) die noodbron van elektriese krag of opgaarbatterye wees wat in staat is om aan die vereistes van subregulasie (2) te voldoen sonder dat dit weer gelaai word, of dat daar 'n oormatige spanningsval plaasvind, of 'n generator wat aangedryf word deur binnebrandmasjinerie met 'n onafhanklike brandstoftoevoer en met doeltreffende aansitirigtings en die brandstof wat vir sodanige masjinerie voorsien word, moet 'n ontvlammingspunt van minstens 110° F. (43° C.) hê;
 - (b) die noodbron van elektriese krag so ingerig wees dat dit doeltreffend sal werk wanneer die skip 'n slagsy van 22½ grade het en wanneer die trim van die skip 10 grade van gelyklastigheid afwyk;
 - (c) voorsiening gemaak word vir die periodieke toetsing van die noodbron van elektriese krag en die kringe daaraan verbonde.

113. NOODBRON VAN ELEKTRIESE KRAAG: SKEPE VAN 1,600 TON OF MEER MAAR MINDER AS 5,000 TON.

(1) In elke skip waarop hierdie regulasie van toepassing is en wat 'n skip van 1,600 ton of meer maar minder as 5,000 ton is, moet daar op 'n plek bokant die boonste deurlopende dek of verhoogde kwarddek en buitekant die masjineriekaste, 'n selfstandige noodbron van elektriese krag voorsien word wat so ingerig is dat dit sal verseker dat dit sal funksioneer in die geval van brand of 'n ander ongeluk wat veroorsaak dat die hoofelektrisiteitsinstallasie onklaar raak.

(2) In elke skip waarna in subregulasie (1) verwys word, moet die noodbron van elektriese krag wat by daardie subregulasie vereis word, die volgende dienste vir 'n periode van minstens 3 uur gelyktydig in stand kan hou—

- (a) die noodverligting wat vereis word by regulasie 45 (3) (a) en (b) van die Regulasies betreffende Reddingsuitrusting, 1968;
 - (b) die algemene alarm, indien dit elektries werk; en
 - (c) die skip se navigasieligte indien dit uitsluitlik elektries is.
- (3) In elke skip waarna in subregulasie (1) verwys word, moet—
- (a) die noodbron van elektriese krag of opgaarbatterye wees wat in staat is om aan die vereistes van subregulasie (2) te voldoen sonder dat dit weer gelaai word, of dat daar 'n oormatige spanningsval plaasvind, of 'n generator wat aangedryf word deur binnebrandmasjinerie met 'n onafhanklike brandstoftoevoer en met doeltreffende aansitirigtings en die brandstof wat vir sodanige masjinerie voorsien word, moet 'n ontvlammingspunt van minstens 110° F. (43° C.) hê;
 - (b) die noodbron van elektriese krag so ingerig wees dat dit doeltreffend sal werk wanneer die skip 'n slagsy van 22½ grade het en wanneer die trim van die skip 10 grade van gelyklastigheid afwyk;

regulation shall be capable of operating simultaneously for a period of at least 6 hours the following services—

- (a) the emergency lighting required by regulation 45 (3) (a) and (b) of the Life-Saving Equipment Regulation, 1968;
 - (b) an emergency lighting system which shall be provided in the main machinery space, the space containing the ship's main electrical generating plant, on the navigating bridge and in the chartroom;
 - (c) the general alarm, if electrically operated;
 - (d) the ship's navigation lights, if solely electric; and
 - (e) the daylight signalling lamp, if it is operated by the ship's main source of electric power.
- (3) In every ship referred to in sub-regulation (1)—
- (a) the emergency source of electric power shall be either accumulator (storage) batteries capable of complying with the requirements of sub-regulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements, and the fuel provided for such machinery shall have a flash point of not less than 110° F. (43° C.);
 - (b) the emergency source of electric power shall be so arranged that it will operate efficiently when the ship is listed 22½ degrees and when the trim of the ship is 10 degrees from an even keel;
 - (c) provision shall be made for the periodical testing of the emergency source of electric power and its associated circuits.

113. EMERGENCY SOURCE OF ELECTRIC POWER: SHIPS OF 1,600 TONS OR OVER BUT UNDER 5,000 TONS.

(1) In every ship to which this regulation applies being a ship of 1,600 tons or over but under 5,000 tons, there shall be provided in a position above the uppermost continuous deck or raised quarter-deck and outside machinery casings, a self-contained emergency source of electric power so arranged as to ensure its functioning in the event of fire or other casualty causing failure of the main electrical installation.

(2) In every ship referred to in sub-regulation (1), the emergency source of electric power required by that sub-regulation shall be capable of operating simultaneously for a period of at least 3 hours the following services—

- (a) the emergency lighting required by regulation 45 (3) (a) and (b) of the Life-Saving Equipment Regulation, 1968;
 - (b) the general alarm, if electrically operated; and
 - (c) the ship's navigation lights, if solely electric.
- (3) In every ship referred to in sub-regulation (1)—
- (a) the emergency source of electric power shall be either accumulator (storage) batteries capable of complying with the requirements of sub-regulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements, and the fuel provided for such machinery shall have a flash point of not less than 110° F. (43° C.);
 - (b) the emergency source of electric power shall be so arranged that it will operate efficiently when the ship is listed 22½ degrees and when the trim of the ship is 10 degrees from an even keel;

- (c) voorsiening gemaak word vir die periodieke toetsing van die noodbron van elektriese krag en die kringe daaraan verbonde.

114. NOODBRON VAN ELEKTRIESE KRAG: SKEPE VAN MINDER AS 1,600 TON.

(1) In elke skip waarop hierdie regulasie van toepassing is en wat 'n skip van minder as 1,600 ton is waarvan die hoofbron van elektriese krag nie bokant die boonste deurlopende dek of verhoogde kwartdek en buitekant die masjineriekaste geleë is nie, moet op 'n plek bokant die boonste deurlopende dek of verhoogde kwartdek en buitekant die masjineriekaste, 'n selfstandige noodbron van elektriese krag voorsien word wat so ingerig is dat dit sal verseker dat dit sal funksioneer in die geval van brand of 'n ander ongeluk wat veroorsaak dat die hoof-elektrisiteitsinstallasie onklaar raak.

(2) In elke skip waarna in subregulasie (1) verwys word, moet die noodbron van elektriese krag wat by daardie subregulasie vereis word, die volgende dienste vir 'n periode van minstens 3 uur gelyktydig in stand kan hou—

(a) die noodverligting wat vereis word by regulasie 45 (3) (a) en (b) van die Regulasies betreffende Reddingsuitrusting, 1968;

(b) die algemene alarm, indien dit elektries werk; en

(c) die skip se navigasieligte indien dit uitsluitlik elektries is.

(3) In elke skip waarna in subregulasie (1) verwys word, moet—

(a) die noodbron van elektriese krag of opgaarbatterye wees wat in staat is om aan die vereistes van subregulasie (2) te voldoen sonder dat dit weer gelaai word of dat daar 'n oormatige spanningsval plaasvind, of 'n generator wat aangedryf word deur binnebrandmasjinerie met 'n onafhanklike brandstof-toevoer en met doeltreffende aansluitings en die brandstof wat vir sodanige masjinerie voorsien word, moet 'n ontvlammingspunt van minstens 110° F. (43°C.) hê;

(b) die noodbron van elektriese krag so ingerig wees dat dit doeltreffend sal werk wanneer die skip 'n slagsy van 22½ grade het en wanneer die trim van die skip 10 grade van gelyklastigheid afwyk;

(c) voorsiening gemaak word vir die periodieke toetsing van die noodbron van elektriese krag en die kringe daaraan verbonde.

115. ELEKTRIESE EN ELEKTROHIDROULIESE STUUR-INRIGTING.

(1) Elke skip waarop hierdie regulasie van toepassing is en wat toegerus is met 'n elektriese of elektrohidrouliese stuurinrigting moet voorsien wees van aanwysers om aan te dui wanneer die kragenhede van sodanige stuurinrigtings loop. Hierdie aanwysers moet in die masjineri ruimte, by voorkeur in die beheerkamer as daar een is, en op die navigasiebrug geleë wees.

(2) Die volgende bepalinge geld vir elke skip waarop hierdie regulasie van toepassing is en wat 'n skip van 5,000 ton of meer is—

(a) elektriese en elektrohidrouliese stuurinrigtings moet bedien word deur twee kringe wat vanaf die hoofskakelbord gevoer word en waarvan een deur die noodskakelbord kan loop indien dié voorsien is. Elke kring moet voldoende vermoë hê om al die motore wat normaalweg daarmee verbind is en gelyktydig werk, van krag te voorsien en indien oorskakelingsinrigtings in die stuurinrigtingskamer aangebring is om toe te laat dat enigeen van die kringe enige motor of kombinasie motore van krag voorsien, moet elke kring se vermoë voldoende wees vir die strafste lastoestand. Die kringe

- (c) provision shall be made for the periodical testing of the emergency source of electric power and its associated circuits.

114. EMERGENCY SOURCE OF ELECTRIC POWER: SHIPS OF UNDER 1,600 TONS.

(1) In every ship to which this regulation applies being a ship of under 1,600 tons not having its main source of electric power situated above the uppermost continuous deck or raised quarter-deck and outside the machinery casings, there shall be provided in a position above the uppermost continuous deck or raised quarter-deck and outside the machinery casings, a self-contained emergency source of electric power so arranged as to ensure its functioning in the event of fire or other casualty causing failure of the main electrical installation.

(2) In every ship referred to in sub-regulation (1), the emergency source of electric power required by that sub-regulation shall be capable of operating simultaneously for a period of at least 3 hours the following services—

(a) the emergency lighting required by regulation 45 (3) (a) and (b) of the Life-Saving Equipment Regulations, 1968;

(b) the general alarm, if electrically operated; and

(c) the ship's navigation lights, if solely electric.

(3) In every ship referred to in sub-regulation (1)—

(a) the emergency source of electric power shall be either accumulator (storage) batteries capable of complying with the requirements of sub-regulation (2) without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements, and the fuel provided for such machinery shall have a flash point of not less than 110° F. (43° C.);

(b) the emergency source of electric power shall be so arranged that it will operate efficiently when the ship is listed 22½ degrees and when the trim of the ship is 10 degrees from an even keel;

(c) provision shall be made for the periodical testing of the emergency source of electric power and its associated circuits.

115. ELECTRIC AND ELECTRO-HYDRAULIC STEERING GEAR.

(1) Every ship to which this regulation applies which is fitted with electric or electro-hydraulic steering gear, shall be provided with indicators which will show when the power units of such steering gear are running. These indicators shall be situated in the machinery space, preferably in the control room if any, and on the navigating bridge.

(2) In every ship to which this regulation applies being a ship of 5,000 tons or over, the following provisions shall apply:—

(a) electric and electro-hydraulic steering gear shall be served by two circuits fed from the main switchboard, one of which may pass through the emergency switchboard, if one is provided. Each circuit shall have adequate capacity for supplying all the motors which are normally connected to it and which operate simultaneously, and if transfer arrangements are provided in the steering gear room to permit either circuit to supply any motor or combination of motors, the capacity of each circuit shall be adequate for the most severe load

moet oor hul hele lengte so ver doenlik van mekaar verwyder wees;

(b) slegs beskerming teen kortsluiting moet vir die kringe en motore verskaf word.

(3) In elke skip waarop hierdie regulasie van toepassing is en wat 'n skip van minder as 5,000 ton is waarin elektriese krag die enigste kragbron vir sowel die hoof- as die hulpstuurinrigting is, moet die inrigtings voldoen aan die vereistes van subregulasie (2) behalwe dat geskikte beskerming teen oorbelasting aangebring moet word indien die hulpstuurinrigting aangedryf word deur 'n motor wat in die eerste plek vir ander dienste bedoel is. Slegs beskerming teen kortsluiting moet verskaf word vir motore en kragringe van elektrisies of elektrohidroulies bediende hoofstuurinrigting wat in enige skip van minder as 5,000 ton aangebring is.

116. VOORSORGMATREËLS TEEN SKOK, BRAND EN ANDER GEVARE VAN ELEKTRIESE OORSPRONG.

(1) In elke skip waarop hierdie regulasie van toepassing is, moet alle elektriese uitrusting so gebou en geïnstalleer wees dat daar geen gevaar van besering vir enige persoon wat dit op die regte manier hanteer, sal wees nie. Onderworpe aan die bepalings van subregulasie (2) moet, wanneer elektriese uitrusting wat as skeepsuitrusting voorsien word, onder 'n spanning van meer as 55 volt moet werk, die blootgestelde dele van sodanige uitrusting wat nie bedoel is om 'n hoër spanning as die aarde te hê nie, maar as gevolg van 'n fout so 'n spanning kan hê, geaard word.

(2) In elke skip waarop hierdie regulasie van toepassing is, moet blootgestelde metaaldele van draagbare elektriese lampe, gereedskap en soortgelyke apparate wat as skeepsuitrusting voorsien word wat onder 'n spanning van meer as 55 volt moet werk, geaard moet word deur 'n geleier in die toevoerkabel tensy deur die gebruik van 'n dubbele isolering of 'n geskikte afsondertransformator beskerming verleen word wat minstens net so doeltreffend as aarding deur 'n geleier is. Wanneer elektriese lampe, gereedskap en ander apparate in klam ruimtes gebruik word, moet voorsorg getref word om sover doenlik te verseker dat die gevaar van elektriese skok tot 'n minimum beperk word.

(3) In elke skip waarop hierdie regulasie van toepassing is, moet elke hoof- en noodskakelbord so ingerig wees dat hulle van voor en van agter maklik toeganklik is sonder gevaar vir enige persoon. Elke sodanige skakelbord moet op geskikte wyse beskerm word en 'n nie-geleidende mat of rooster moet waar nodig voor en agter voorsien word. Geen blootgestelde dele wat 'n spanning van meer as 250 volt gelykstroom of 55 volt wisselstroom tussen die geleiers of na die aarde mag hê nie, moet aan die voorkant van enige skakelbord of kontrolepaneel geïnstalleer word nie.

(4) Die verspreidingsstelsel van terugleiding deur die romp mag in geen skip waarop hierdie regulasie van toepassing is, gebruik word nie.

(5) In elke skip waarop hierdie regulasie van toepassing is, moet elke elektriese kabel op elke plek waar 'n elektriese fout 'n brand kan veroorsaak, 'n vlamvertragende mantel of pantsering hê of anders ewe doeltreffend beskerm word. Alle metaalmantels en -pantsering van elektriese kables in elke sodanige skip moet elektrisies deurlopend en geaard wees.

(6) In elke skip waarop hierdie regulasie van toepassing is, moet ligtoebehore ingerig word om temperatuurstygings wat vir die elektriese bedrading daarvan skadelik sal wees of 'n brandgevaar in die omringende materiaal sal veroorsaak, te verhoed.

(7) In elke skip waarop hierdie regulasie van toepassing is, moet die bedrading op so 'n wyse ondersteun word dat dit nie kan skaaf of anders beskadig kan word nie.

condition. The circuits shall be separated as widely as practicable throughout their length;

(b) short circuit protection only shall be provided for the circuits and motors.

(3) In every ship to which this regulation applies being a ship of under 5,000 tons in which electric power is the sole source of power for both main and auxiliary steering gear, the arrangements shall comply with the requirements of sub-regulation (2) except that if the auxiliary steering gear is powered by a motor primarily intended for other services, suitable overload protection may be fitted. Short circuit protection only shall be provided for motors and power circuits of electrically or electrohydraulically operated main steering gear fitted in any ship of less than 5,000 tons.

116. PRECAUTIONS AGAINST SHOCK, FIRE AND OTHER HAZARDS OF ELECTRICAL ORIGIN.

(1) In every ship to which this regulation applies, all electrical equipment shall be so constructed and installed that there will be no danger of injury to any person handling it in a proper manner. Subject to the provisions of sub-regulation (2), where electrical equipment supplied as ships' equipment is to be operated at a voltage in excess of 55 volts, the exposed metal parts of such 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.

(2) In every ship to which this regulation applies, exposed metal parts of portable electric lamps, tools and similar apparatus, supplied as ships' equipment to be operated at a voltage in excess of 55 volts, shall be earthed through a conductor in the supply cable, unless by the use of a double insulation or a suitable isolating transformer, protection at least as effective as earthing through a conductor is provided. When electric lamps, tools or other apparatus are used in damp spaces, provision shall be made, so far as practicable, to ensure that the danger of electric shock is reduced to a minimum.

(3) In every ship to which this regulation applies, every main and emergency switchboard shall be so arranged as to give easy access to the back and front thereof without danger to any person. Every such switchboard shall be suitably guarded, and a non-conducting mat or grating shall be provided at the back and the front where necessary. No exposed parts which may have a voltage between conductors or to earth exceeding 250 volts direct current or 55 volts alternating current, shall be installed on the face of any switchboard or control panel.

(4) The hull return system of distribution shall not be used in any ship to which this regulation applies.

(5) In every ship to which this regulation applies, every electric cable shall, at every position at which an electrical fault may cause a fire, be flame-retardant sheathed or armoured or otherwise equally effectively protected. All metal sheaths and metal armour of electrical cables in every such ship shall be electrically continuous and shall be earthed.

(6) In every ship to which this regulation applies, lighting fittings shall be arranged 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.

(7) In every ship to which this regulation applies, wiring shall be supported in such a manner as to avoid chafing and other injury.

(8) In elke skip waarop hierdie regulasie van toepassing is, moet elke afsonderlike elektriese kring teen kortsluiting beskerm word.

(9) In elke skip waarop hierdie regulasie van toepassing is, moet elke afsonderlike elektriese kring behalwe 'n kring wat die skip se stuurinrigting bedien, of enige ander kring ten opsigte waarvan die Minister vrystelling verleen, teen oorbelasting beskerm word. Die stroomdravermoë van die kring wat dit beskerm en die ontwerpvermoë of stelling van die toestel moet duidelik en blywend op of naby elke oorlasbeveiligingstoestel aangedui word.

(10) In elke skip waarop hierdie regulasie van toepassing is, moet alle opgaarbatterye gehuisves wees in kaste of afdelings wat gebou is om die batterye teen beskadiging te beskerm en geventileer is om die versameling van ontplofbare gas tot 'n minimum te beperk. Toestelle wat kan oorvonk, moet nie geïnstalleer word in 'n afdeling wat hoofsaaklik vir opgaarbatterye bedoel is nie.

(11) Elke elektriese ruimteverwarmer wat deel uitmaak van die uitrusting van 'n skip waarop hierdie regulasie van toepassing is, moet op sy plek bevestig word en moet so gebou 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 materiaal deur die hitte van die element geskroei of aan die brand gestee kan word nie.

117. BRANDBEVEILIGING: SKEPE VAN 4,000 TON OF MEER.

(1) In elke skip waarop hierdie regulasie van toepassing is en wat 'n skip van 4,000 ton of meer is, moet, wanneer 'n beskot by hierdie Deel vereis word om van klas „B”-panele gebou te wees, sodanige panele die deurgang van vlamme tot aan die einde van 'n standaardbrandtoets van 30 minute kan verhoed. Elke klas „B”-paneel moet sodanig wees dat indien enige vlak daarvan aan 'n standaardbrandtoets van 30 minute blootgestel word, die gemiddelde temperatuur aan die kant van die paneel wat nie blootgestel is nie, op geen tydstip gedurende die eerste 15 minute van die toets in die geval van 'n onbrandbare paneel, of vir die duur van die toets in die geval van 'n brandbare paneel, met meer as 250° F. (139° C.) bo die aanvangstemperatuur aan daardie kant sal styg nie en die temperatuur op geen plek op daardie vlak met meer as 405° F. (225° C.) bo die aanvangstemperatuur sal styg nie.

(2) In elke skip waarna in subregulasie (1) verwys word, moet die romp, insluitend die bobou, boubeskotte, dekke en dekhuse gebou word van staal of sodanige ander geskikte materiaal as wat die Minister van tyd tot tyd in spesiale gevalle mag toelaat met inagneming van die gevaar van brand.

(3) In elke skip waarna in subregulasie (1) verwys word, moet die gangbeskotte wat akkommodasieruimtes en beheerposte bedien, gebou word van staal of van onbrandbare klas „B”-panele, behalwe dat brandbare klas „B”-panele aangebring mag word—

(a) in enige gedeelte van 'n gangbeskot wat grens aan ruimtes wat geen noemenswaardige brandvrag bevat nie; en

(b) waar 'n gang twee of meer uitgange het deur deure wat regstreeks na 'n oop dek op dieselfde vlak lei, in die eindgedeeltes van die gangbeskotte oor 'n afstand van hoogstens 20 voet gemeet vanaf sodanige uitgang.

(4) In elke skip waarna in subregulasie (1) verwys word, moet deur- en soortgelyke openings in gangbeskotte gesluit kan word deur middel van deure wat blywend daaraan bevestig is, of luike.

(5) In elke skip waarna in subregulasie (1) verwys word, moet die getal ventilasieopenings in die gangbeskotte tot 'n minimum beperk word. Sulke openings

(8) In every ship to which this regulation applies, every separate electrical circuit shall be protected against short circuit.

(9) In every ship to which this regulation applies, each separate electrical circuit, other than a circuit which operates the ship's steering gear or any other circuit in respect of which the Minister grants an exemption, 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.

(10) In every ship to which this regulation applies, all accumulator (storage) batteries shall be housed in boxes or compartments which are constructed to protect the batteries from damage and are ventilated to minimize the accumulation of explosive gas. Devices liable to arc shall not be installed in any compartment assigned principally to accumulator batteries.

(11) Every electric space-heater forming part of the equipment of a ship to which this regulation applies, 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 material can be scorched or set on fire by heat from the element.

117. FIRE PROTECTION: SHIPS OF 4,000 TONS OR OVER.

(1) In every ship to which this regulation applies being a ship of 4,000 tons or over, where a bulkhead is required by this Part to be constructed of “B” Class panels, such panels shall be capable of preventing the passage of flame throughout a standard fire test of 30 minutes duration. Every “B” Class panel shall be such 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 panel will not increase at any time during the first 15 minutes of the test in the case of an incombustible panel or the duration of the test in the case of a combustible panel 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 405° F. (225° C.) above the initial temperature.

(2) In every ship referred to in sub-regulation (1), the hull, including the superstructure, structural bulkheads, decks and deckhouses, shall be constructed of steel or of such other suitable materials as the Minister may permit in special cases, having regard to the risk of fire.

(3) In every ship referred to in sub-regulation (1), the corridor bulkheads serving accommodation spaces and control stations, shall be constructed of steel or of incombustible “B” Class panels, except that combustible “B” Class panels may be fitted—

(a) in any portion of a corridor bulkhead which abuts on spaces containing no significant fire load; and

(b) where a corridor is provided with two or more exits through doors leading directly to an open deck on the same level, in the end portions of the corridor bulkheads over a distance not exceeding 20 feet measured from any such exit.

(4) In every ship referred to in sub-regulation (1), doorways and similar openings in corridor bulkheads, shall be capable of being closed by permanently attached doors or by shutters.

(5) In every ship referred to in sub-regulation (1), the number of ventilation openings in the corridor bulkheads shall be kept to a minimum. Such openings shall, so far as

moet, sover redelik moontlik, slegs in of onder deure aangebring word en moet waar dit prakties uitvoerbaar is in die onderste gedeelte van die deur aangebring word.

(6) In elke skip waarna in subregulasie (1) verwys word, moet binnetrappe, lere en bemanningshysbakkers binne akkommodasieruimtes van staal of ander ekwivalente materiaal gebou word.

(7) In elke skip waarna in subregulasie (1) verwys word, moet die grensbeskotte van enige noodgenerator-kamer en die beskotte wat 'n skeeps kombuis, verfkamer, lampkamer of bootsmanstoor van 'n akkommodasie-ruimte skei, van staal of ander ekwivalente materiaal gebou word.

(8) In elke skip waarna in subregulasie (1) verwys word, moet die dekbedekkings binne akkommodasie-ruimtes en beheerposte op die dek wat die kruin van masjinerie- en vragruimtes uitmaak, 'n tipe wees wat nie maklik sal ontvlam nie.

(9) In elke skip waarna in subregulasie (1) verwys word, moet verf, vernis en ander oppervlakmateriaal met 'n nitrosellulose- of ander hoogs ontvlambare basis, nie in akkommodasieruimtes, masjinerieruimtes en beheerposte gebruik word nie.

(10) In elke skip waarna in subregulasie (1) verwys word, moet pype wat vir die vervoer van olie of ander brandbare vloeistowwe bedoel is, van materiaal wees wat vir die Minister of Owerheid aanneemlik is met inagting van die gevaar van brand.

(11) In elke skip waarna in subregulasie (1) verwys word, mag buiteboordse spuipype, sanitêre afvoerpype en ander uitlate naby die waterlyn nie van 'n materiaal wees wat in die geval van brand moontlik sal faal en daardeur die gevaar van oorstroming laat ontstaan nie.

(12) In elke skip waarna in subregulasie (1) verwys word, mag films met 'n sellulosenitraatbasis nie in rolprentinstallasies gebruik word nie.

118. BRANDBEVEILIGING: ALGEMEEN.

(1) In elke skip waarop hierdie regulasie van toepassing is, moet die dakvensters in ruimtes wat hoof-aandrywingsmasjinerie of oliegestookte ketels of hulpbinnebrandmasjinerie met 'n totale perdekrag van 1,000 of meer bevat, van buitekant die ruimte vandaan gesluit en, waar doenlik, oopgemaak kan word in die geval van brand en, wanneer hulle glaspanele bevat, moet sulke panele 'n brandwerende konstruksie met draadversterkte glas hê en aan die buitekant toegerus wees met luike van staal of ander ekwivalente materiaal wat blywend bevestig is.

(2) In elke skip waarop hierdie regulasie van toepassing is, mag vensters nie in masjienkaste aangebring word nie behalwe waar die Minister tevrede is dat hulle noodsaaklik is en nie 'n brandgevaar sal uitmaak nie. Waar sulke vensters aangebring word, moet hulle 'n tipe wees wat nie oopgemaak kan word nie en 'n brandwerende konstruksie met draadversterkte glas hê en aan die buitekant toegerus wees met luike van staal of ander ekwivalente materiaal wat blywend bevestig is.

119. KETELS EN MASJINERIE: ALGEMEEN.

(1) In elke skip moet die ontwerp en bou van die masjinerie, ketels en ander drukhouers toereikend wees vir die diens waarvoor hulle bedoel is, en moet hulle so aangebring en beskerm word dat enige gevaar vir persone aan boord tot 'n minimum beperk word.

(2) Sonder benadeling van die algemeenheid van subregulasie (1) moet middels in elke skip waarop hierdie subregulasie van toepassing is, voorsien word om oordruk in enige deel van die masjinerie, ketels en ander drukhouers te voorkom en in die besonder moet elke

is reasonably practicable, be provided only in or under doors and shall, wherever practicable, be in the lower part of the door.

(6) In every ship referred to in sub-regulation (1), interior stairways, ladders and crew lift trunks within accommodation spaces, shall be constructed of steel or other equivalent material.

(7) In every ship referred to in sub-regulation (1), the boundary bulkheads of any emergency generator room and the bulkheads separating a galley, paint-room, lamp-room or boatswain's store from an accommodation space, shall be constructed of steel or other equivalent material.

(8) In every ship referred to in sub-regulation (1), deck coverings within accommodation spaces and control stations on the deck forming the crown of machinery and cargo spaces, shall be of a type which will not readily ignite.

(9) In every ship referred to in sub-regulation (1), paints, varnishes and other surface materials having a nitrocellulose or other highly inflammable base, shall not be used in accommodation spaces, machinery spaces and control stations.

(10) In every ship referred to in sub-regulation (1), pipes intended to convey oil or other combustible liquids, shall be of a material acceptable to the Minister of Authority having regard to the risk of fire.

(11) In every ship referred to in sub-regulation (1), overboard scuppers, sanitary discharges or other outlets close to the waterline, shall not be of a material likely to fail in the event of fire and thereby give rise to a danger of flooding.

(12) In every ship referred to in sub-regulation (1), cellulosenitrate-based film shall not be used in cinematograph installations.

118. FIRE PROTECTION: GENERAL.

(1) In every ship to which this regulation applies, the skylights to spaces containing main propulsion machinery or oil-fired boilers or auxiliary internal combustion type machinery of a total horse-power of 1,000 or over, shall be capable of being closed and, where practicable, opened from outside the space in the event of fire and, where they contain glass panels, such panels shall be of fire resisting construction fitted with wire reinforced glass and shall have external, permanently attached shutters of steel or other equivalent material.

(2) In every ship to which this regulation applies, windows shall not be fitted in engine casings except where the Minister is satisfied that they are necessary and will not constitute a fire hazard. Where such windows are fitted, they shall be of a non-opening type and shall be of a fire resisting construction fitted with wire reinforced glass and shall have external, permanently attached shutters of steel or other equivalent material.

119. BOILERS AND MACHINERY: GENERAL.

(1) In every ship, the machinery, boilers and other pressure vessels shall be of a design and construction adequate for the service for which they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board.

(2) Without prejudice to the generality of sub-regulation (1), means shall be provided in every ship to which this sub-regulation applies which will prevent overpressure in any part of the machinery, boilers and other pressure vessels, and in particular every boiler and every unfired

ketel en ongestookte stoomgenerator van minstens twee veiligheidskleppe voorsien wees: met die voorbehoud dat die Minister met inagneming van die lewering of enige ander eienskappe van enige ketel of ongestookte stoomgenerator kan toelaat dat slegs een veiligheidsklep aangebring word indien hy tevrede is dat voldoende beskerming teen oordruk daardeur verleen word.

120. KETELS EN ANDER DRUKHOUSERS.

(1) In elke skip moet elke ketel of ander drukhouer met hul onderskeie monterings voordat dit die eerste maal in gebruik geneem word, aan 'n hidrouliese toets onderwerp word onder 'n druk wat voldoende hoër as die werkdruk is, wat sal verseker dat die ketel of ander drukhouer en sy monterings sterk genoeg en behoorlik ontwerp is vir die bedoelde diens met inagneming van—

- (a) die ontwerp en die materiaal waarvan dit gebou is;
- (b) die doel waarvoor dit bedoel is om gebruik te word; en
- (c) die werksomstandighede waaronder dit bedoel is om gebruik te word,

en elke sodanige ketel of ander drukhouer en hul onderskeie monterings moet in 'n doeltreffende toestand gehou word.

(2) In elke skip moet voorsiening gemaak word wat die skoonmaak en inspeksie van elke drukhouer sal vergemaklik.

121. MASJINERIE.

(1) In elke skip moet hoof- en hulpmasjinerie wat vir die aandrywing en veiligheid van die skip nodig is, van doeltreffende kontrolemiddels voorsien wees en die masjinerie moet in werking gestel kan word wanneer daar aanvanklik geen krag in die skip beskikbaar is nie.

(2) In elke skip waar die gevaar van oorjaging van die masjinerie bestaan, moet daar middels voorsien word om te verseker dat die veilige spoed nie oorskry word nie.

(3) In elke skip waar hoof- of hulpmasjinerie, of enige deel van sulke masjinerie aan binnedruk onderwerp word, moet daardie dele, voordat hulle die eerste maal in gebruik geneem word, onderwerp word aan 'n hidrouliese toets onder 'n druk wat voldoende hoër as die werkdruk is met inagneming van—

- (a) die 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,
- en sulke dele moet in 'n doeltreffende toestand gehou word.

122. MIDDELS OM AGTERUIT TE VAAR.

Elke skip moet voldoende krag hê om agteruit te vaar sodat behoorlike beheer oor die skip in alle normale omstandighede verseker kan word.

123. ASSE.

In elke skip moet elke as so ontwerp en gebou wees dat dit die maksimum werkspannings waaraan dit onderwerp 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 masjien waardeur dit aangedryf word, of waarvan dit deel uitmaak.

124. KETELVOEDINGSTELSELS.

(1) In elke skip moet elke ketel wat dienste voorsien wat noodsaaklik vir die veiligheid van die skip is en wat

steam generator shall be provided with not less than two safety valves: Provided that the Minister may, having regard to the output or any other features of any boiler or unfired steam generator, permit only one safety valve to be fitted if he is satisfied that adequate protection against overpressure is provided.

120. BOILERS AND OTHER PRESSURE VESSELS.

(1) In every ship, every boiler or other pressure vessel and its respective mountings shall, before being put into service for the first time, be subjected to a hydraulic test to a pressure suitably in excess of the working pressure, which will ensure that the boiler or other pressure vessel and its mountings are adequate in strength and design for the service for which it is intended having regard to—

- (a) the design and the material of which it is constructed;
- (b) the purpose for which it is intended to be used; and
- (c) the working conditions under which it is intended to be used,

and every such boiler or other pressure vessel and its respective mountings shall be maintained in an efficient condition.

(2) In every ship, provision shall be made which will facilitate the cleaning and inspection of every pressure vessel.

121. MACHINERY.

(1) In every ship, main and auxiliary machinery essential for the propulsion and safety of the ship, shall be provided with effective means of control, and the machinery shall be capable of being brought into operation when initially no power is available in the ship.

(2) In every ship where risk from over-speeding of machinery exists, means shall be provided to ensure that the safe speed is not exceeded.

(3) In every ship where main or auxiliary machinery or any parts of such machinery are subject to internal pressure, those parts shall, before being put into service for the first time, be subjected to a hydraulic test to a pressure suitably in excess of the working pressure having regard to—

- (a) the 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,

and such parts shall be maintained in an efficient condition.

122. MEANS FOR GOING ASTERN.

Every ship shall have sufficient power for going astern to secure proper control of the ship in all normal circumstances.

123. 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 engines by which it is driven or of which it forms a part.

124. BOILER FEED SYSTEMS.

(1) In every ship, every boiler which provides services essential for the safety of the ship and which could be

gevaarlik kan word as gevolg van 'n faling van sy voedingswatertoevoer, voorsien wees van minstens twee doeltreffende en afsonderlike voedingswaterstelsels wat so ingerig is dat enigeen van sodanige stelsels vir inspeksie of opknapping oopgemaak kan word sonder dat dit die doeltreffendheid van die ander stelsel raak. Middels moet voorsien word om oordruk in enige deel van die stelsels te voorkom.

(2) Indien dit in enige skip waarop hierdie subregulasie van toepassing is, moontlik is dat olie in die voedingswaterstelsel van 'n ketel kan kom, moet die inrigtings vir die voorsiening van ketelvoedingswater voorsiening maak vir die opvang van die olie in die voedingswater.

(3) Elke voedingskeerklep, -inrigting of -pyp waardeur voedingswater van 'n pomp na die ketels in enige skip loop, moet ontwerp en gebou wees om die maksimum werkspannings waaraan dit onderwerp mag word, te weerstaan met 'n veiligheidsfaktor wat voldoende is met inagneming van die materiaal waarvan dit gebou is en die werkomstandighede waaronder dit gebruik sal word. Elke sodanige klep, inrigting of pyp moet voordat dit die eerste maal in gebruik geneem word, onderwerp word aan 'n hidrouliese toets onder 'n druk wat voldoende hoër is as die maksimum werkdruk van die ketel waaraan dit verbind is, of die maksimum werkdruk waaraan die voedingspyp onderwerp mag word, watter een ook al die grootste is en moet in 'n doeltreffende toestand gehou word. Die voedingspype moet voldoende gesteun word.

125. STOOMPYPSTELSLS.

(1) In elke skip moet elke stoompyp en elke inrigting wat daaraan verbind is 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 werkomstandighede waaronder dit gebruik sal word.

(2) Sonder benadeling van die algemeenheid van subregulasie (1) moet elke stoompyp of inrigting in elke skip voordat dit die eerste maal gebruik word, onderwerp word aan 'n toets onder 'n hidrouliese druk wat voldoende hoër as die werkdruk is en wat bepaal moet word met inagneming van die vereistes van subregulasie (1) (a) en (b) en elke sodanige stoompyp of inrigting moet in 'n doeltreffende toestand gehou word.

(3) Stoompype moet in elke skip voldoende gesteun word.

(4) In elke skip moet voorsiening gemaak word om oormatige spanning te verhoed wat moontlik tot die faling van enige stoompyp of inrigting kan lei, hetsy as gevolg van temperatuurverandering, vibrasie of andersins.

(5) In elke skip moet doeltreffende middels voorsien word om elke stoompyp te dreineer ten einde te verseker dat die binnekant van die pyp geen water bevat nie en dat waterslag nie sal voorkom nie onder enige omstandighede wat moontlik in die loop van die voorgename diens van die skip kan voorkom.

(6) Indien 'n stoompyp in enige skip stoom vanaf enige bron mag ontvang onder 'n hoër druk as wat dit met 'n voldoende veiligheidsfaktor kan weerstaan, moet 'n doeltreffende reduseerklep, ontflasklep en drukmeter aan so 'n pyp aangebring word.

126. LUGDRUKSTELSLS.

(1) In elke skip wat 'n skip is waarin masjinerie wat noodsaaklik vir die aandrywing en veiligheid van die skip of die mense aan boord is, uitsluitlik deur druklug aangesit, bedien of beheer moet word, moet daar 'n doel-

rendered dangerous by the failure of its feed water supply, shall be provided with not less than two efficient and separate feed water systems so arranged that either of such systems may be opened 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, in any ship to which this sub-regulation applies, it is possible for oil to enter the feed water system of a boiler, the arrangements for supplying boiler feed water shall provide for the interception of oil in the feed water.

(3) Every feed check valve, fitting, or pipe through which feed water passes from a pump to the boilers in any ship, shall be designed and constructed to withstand the maximum working stresses to which it may be subjected, with a factor of safety which is adequate having regard to the material of which it is constructed and the working conditions under which it will be used. Every such valve, fitting, or pipe, shall before being put into service for the first time, be subjected to a hydraulic test suitably in excess of the maximum working pressure of the boiler to which it is connected or of the maximum working pressure to which the feed line may be subjected, whichever shall be the greater, and shall be maintained in an efficient condition. The feed pipes shall be adequately supported.

125. 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.

(2) Without prejudice to the generality of sub-regulation (1), every steam pipe or fitting in every ship shall before being put into service for the first time, be subjected to a test by hydraulic pressure to a pressure suitably in excess of the working pressure to be determined having regard to the requirements of sub-regulation (1) (a) and (b), and every such steam pipe or fitting shall be maintained in an efficient condition.

(3) In every ship, steam pipes shall be adequately supported.

(4) In every ship, provision shall be made which will avoid excessive stress likely to lead to the failure of any steam pipe or fitting, whether by reason of variation in temperature, vibration or otherwise.

(5) In every ship, 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.

(6) If, in any ship, 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 gauge shall be fitted to such pipe.

126. AIR PRESSURE SYSTEMS.

(1) In every ship being a ship in which machinery essential for the propulsion and safety of the ship or of persons on board is required to be started, operated or controlled solely by compressed air, there shall be provided an effi-

treffende lugstelsel voorsien word wat 'n voldoende getal lugkompressors en druklughouers insluit om te verseker dat daar in alle moontlike diensomstandighede 'n voldoende toevoer druklug beskikbaar is.

(2) (a) In elke skip moet die dele van die druklugstelsel, behalwe 'n pneumatiese kontrolestelsel, wat aan lugdruk onderhewig is, ontwerp en gebou wees om die maksimum werkspannings waaraan dit onderwerp mag word met 'n voldoende veiligheidsfaktor te weerstaan en elke lugdrukpyp of -inrigting in so 'n stelsel moet, voordat dit die eerste maal gebruik word, onderwerp word aan 'n hidrouliese toets twee maal sy maksimum werkdruk, en moet in 'n doeltreffende toestand gehou word.

(b) Middels moet in elke skip voorsien word om oordruk in enige deel van die druklugstelsel te voorkom en wanneer watermantels en omhulsels van lugkompressors en verkoelers aan gevaarlike oordruk onderwerp mag word as gevolg van 'n lekkasie vanaf lugdrukdele in hulle in, moet geskikte drukontlastingsvoorsiening word.

(c) In elke skip waarop hierdie paragraaf van toepassing is, moet voorsiening gemaak word om die indringing van olie in die lugdrukstelsel tot 'n minimum te beperk en om die stelsel te dreineer. Voorsiening moet ook gemaak word om die stelsel teen die uitwerking van 'n inwendige ontploffing te beskerm.

(d) In elke skip waarop hierdie paragraaf van toepassing is, moet alle afvoerpype van aansitlugkompressors regstreeks na die aansitlughouers lei en alle aansitlugpype van die lughouers na hoof- of hulpenjins moet geheel en al afsonderlik van die kompressorafvoerpypstelsel gehou word.

127. VERKOELINGSWATERSTELSEL.

In elke skip waarin verkoelingswaterdienste noodsaaklik is vir die loop van die aandryfmasjinerie moet daar minstens twee middels wees om sodanige waterdienste te voorsien.

128. SMEER- EN ANDER OLIESTELS.

In elke skip waarin olie vir smering, verkoeling of die werking van die hoofaandrywingsmasjinerie en sy hulpdienste onder druk gesirkuleer word, moet voorsiening gemaak word sodat ingeval 'n pomp defek raak, daar 'n alternatiewe manier om sodanige olie te sirkuleer, beskikbaar is.

129. OLIE- EN GASBRANDSTOFINSTALLASIES.

(1) In elke skip moet oliebrandstof wat vir gebruik in ketels of masjinerie voorsien word, 'n ontvlammingspunt van minstens 150° F. (toe toets) hê: met die voorbehoud dat die Minister, onderworpe aan sodanige voorwaardes as wat hy mag stel—

(a) enige skip kan toelaat om oliebrandstof met 'n ontvlammingspunt van minstens 130° F. in ketels of oliebrandstof met 'n ontvlammingspunt van minstens 110° F. in binnebrandmasjinerie te gebruik;

(b) die gebruik van gasbrandstof kan toelaat in 'n skip wat ontwerp is vir die vervoer van vloeibare gas, indien sodanige brandstof uitsluitlik die gevolg van verdamping van die vrag wat vervoer word, is.

Niks in hierdie subregulasie is van toepassing op brandstof vir masjinerie wat by regulasie 112 (3) (a), 113 (3) (a) of 114 (3) (a) toegelaat word nie.

(2) In elke skip wat 'n skip is waarin olie- of gasbrandstof gebruik word, moet die inrigtings vir die bewaring, verspreiding en gebruik van die brandstof sodanig wees dat die veiligheid van die skip en persone aan boord met inagneming van die gevaar van brand of ontploffing

cient air system which shall include a sufficient number of air compressors and compressed air storage vessels to ensure that an adequate supply of compressed air is available under all conditions likely to be met in service.

(2) (a) In every ship, the parts of the compressed air system, other than a pneumatic control system, which are subjected to air pressure, shall be designed and constructed to withstand, with an adequate factor of safety, the maximum working stresses to which they may be subjected and every air pressure pipe or fitting in such system shall, before being put into service for the first time be subjected to a hydraulic test to twice its maximum working pressure and be maintained in an efficient condition.

(b) Means shall be provided in every ship to prevent over-pressure in any part of the compressed air system and, where water jackets or casings of air compressors and coolers might be subjected to dangerous over-pressure due to leakage into them from air pressure parts, suitable pressure relief arrangements shall be provided.

(c) In every ship to which this paragraph applies, provision shall be made to reduce to a minimum entry of oil into the air pressure system and to drain the system. Provision shall also be made to protect the system from the effects of internal explosion.

(d) In every ship to which this paragraph applies, all discharge pipes from starting air compressors shall lead directly to the starting air receivers, and all starting air pipes from the air receivers to main or auxiliary engines shall be entirely separate from the compressor discharge pipe system.

127. COOLING WATER SYSTEM.

In every ship in which cooling water services are essential for the running of the propelling machinery, there shall be at least two means of operating such water services.

128. LUBRICATING AND OTHER OIL SYSTEMS.

In every ship in which oil for lubrication, cooling or operation of the main propelling machinery and its ancillary services is circulated under pressure, provision shall be made so that in the event of the failure of a pump, an alternative means of circulating such oil is available.

129. OIL AND GASEOUS FUEL INSTALLATIONS.

(1) In every ship, oil fuel provided for use in boilers or machinery, shall have a flash point of not less than 150° F. (closed test): Provided that the Minister may, subject to such conditions as he may impose—

(a) permit any ship to use oil fuel having a flash point of not less than 130° F. in boilers, or oil fuel having a flash point of not less than 110° F. in internal combustion type machinery;

(b) permit the use of gaseous fuel in a ship designed for the carriage of liquefied gas if such fuel results solely from evaporation of cargo carried.

Nothing in this sub-regulation shall apply to fuel provided for machinery permitted by regulation 112 (3) (a), 113 (3) (a) or 114 (3) (a).

(2) In every ship being a ship in which oil or gaseous fuel is used, the arrangements for the storage, distribution and utilization of the fuel shall be such that, having regard to the hazards of fire and explosion which the use of such

wat die gebruik van sodanige brandstof mag inhou, be-
waar word.

(3) In elke skip wat 'n skip is waarin olie of gasbrand-
stof in masjiene of ketels vir die aandrywing of veilig-
heid van die skip gebruik word, moet die inrigtings vir
die opberging, verspreiding en gebruik van die brandstof
sodanig wees dat die doeltreffende gebruik van die mas-
jiene onder alle diensomstandighede wat die skip moont-
lik kan teëkom, gehandhaaf kan word.

(4) In elke skip moet elke oliebrandstofinstallasie wat
'n ketel bedien wat stoom vir die aandrywing van die
skip voorsien, minstens twee oliebrandstofeenhede insluit.

130. KOMMUNIKASIE TUSSEN BRUG EN ENJINKAMER.

Elke skip waarop hierdie regulasie van toepassing is,
moet voorsien wees van twee middels om bevele van die
navigasiebrug na die enjinkamerbeheerplatform oor te
stuur. Een van die middels moet die enjinkamertelegraaf
wees.

131. STUURINRIGTING.

(1) Elke skip moet voorsien wees van 'n doeltreffende
hoof- en hulpstuurinrigting: met die voorbehoud dat in-
dien die stuurinrigting se kragenehede en hul verbindings
in tweevoud aangebring word en elke kragenehede aan
die vereistes van subregulasie (2) (c) voldoen en die dupli-
kaateenhede en verbindings wat saamwerk aan die ver-
eistes van subregulasie (2) (b) voldoen, geen hulpstuurin-
rigting vereis sal word nie.

(2) In elke skip waarop hierdie subregulasie van toe-
passing is, moet—

- (a) die hoofstuurinrigting, insluitend die roer en die
inrigtings daaraan verbonde sterk genoeg en vol-
doende wees om die skip teen die maksimum
dienssnelheid te stuur. Die hoofstuurinrigting en
roerkoning moet so ontwerp wees dat hulle nie
beskadig sal word as teen die maksimum snelheid
agter toe gevaar word nie;
- (b) die hoofstuurinrigting in staat wees om die roer
van 35 grade aan die een kant na 35 grade aan
die ander kant oor te bring terwyl die skip teen
die maksimum dienssnelheid vorentoe vaar. Die
roer moet binne 28 sekondes teen die maksimum
dienssnelheid van 35 grade aan enige kant na 30
grade aan die ander kant oorgebring kan word; en
- (c) die hulpstuurinrigting vinnig in werking gebring kan
word en sterk genoeg en voldoende wees om die
skip teen 'n vaarbare snelheid te kan stuur en in
enige skip waarin 'n roerkoning met 'n deursnee
van meer as 14 duim op die plek waar die roerpen
is, vereis word om aan die vereistes van paragraaf
(a) te voldoen, moet die hulpstuurinrigting krag-
bediening hê.

(3) In elke skip waarop hierdie subregulasie van toe-
passing is en wat toegerus is met 'n kragaangedrewe
stuurinrigting, moet die posisie van die roer by die hoof-
stuurpos aangedui word.

132. RESERWE-INRIGTINGS.

Elke skip moet voorsien wees van voldoende reserwe-
inrigtings met inagneming van die diens waarvoor die
skip bedoel is.

133. ANKERS EN ANKERKETTINGS.

Elke skip moet toegerus wees met sodanige ankers en
ankerkettings as wat voldoende is wat betref getal, gewig
en sterkte met inagneming van die grootte van die skip
en die diens waarvoor dit bedoel is.

fuel may entail, the safety of the ship and of persons on
board is preserved.

(3) In every ship being a ship in which oil or gaseous
fuel is used in engines or boilers for the propulsion or
safety of the ship, the arrangements for the storage, dis-
tribution and utilization of the fuel, shall be such that the
effective use of the engines can be maintained under all
conditions likely to be met by the ship in service.

(4) In every ship, every oil fuel installation which
serves a boiler supplying steam for the propulsion of the
ship, shall include not less than two oil fuel units.

130. COMMUNICATION BETWEEN BRIDGE AND ENGINE ROOM.

Every ship to which this regulation applies, shall be pro-
vided with two means of communicating orders from the
navigating bridge to the engine room control platform.
One of the means shall be an engine room telegraph.

131. STEERING GEAR.

(1) Every ship shall be provided with efficient main and
auxiliary steering gear: Provided that, if duplicate steering
gear power units and their connections are fitted and each
power unit complies with the requirements of sub-regula-
tion (2) (c) and the duplicate units and connections
operating together comply with the requirements of sub-
regulation (2) (b), no auxiliary steering gear shall be re-
quired.

(2) In every ship to which this sub-regulation applies—

- (a) the main steering gear, including the rudder and
associated fittings, shall be of adequate strength
and sufficient to steer the ship at maximum service
speed. The main steering gear and rudder stock
shall be so designed that they are not damaged at
maximum astern speed;
- (b) the main steering gear shall be capable of putting
the rudder over from 35 degrees on one side to 35
degrees on the other side with the ship running
ahead at maximum service speed. The rudder shall
be capable of being put over from 35 degrees on
either side to 30 degrees on the other side in 28
seconds at maximum service speed; and
- (c) the auxiliary steering gear shall be capable of being
brought rapidly into action and shall be of ade-
quate strength and of sufficient power to enable
the ship to be steered at navigable speed, and in
any ship in which a rudder stock of over 14 inches
diameter in way of the tiller is required to comply
with the requirements of paragraph (a), the auxili-
ary steering gear shall be operated by power.

(3) In every ship to which this sub-regulation applies
which is fitted with power operated steering gear, the posi-
tion of the rudder shall be indicated at the principal steer-
ing station.

132. SPARE GEAR.

Every ship shall be provided with sufficient spare gear
having regard to the intended service of the ship.

133. 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.

134. NOODUITGANGE.

(1) In elke skip moet trappe en lere so ingerig wees dat hulle 'n maklike nooduitgang na die reddingsbootinskepingsdek vanaf alle bemanningsruimtes, passasiersruimtes en ander ruimtes waarin die bemanning normaalweg werk, voorsien.

(2) In elke skip waarop hierdie subregulasie van toepassing is, moet daar uit elke enjinkamer, astonneel en ketelkamer twee nooduitgange so ver doenlik van mekaar af, voorsien word waarvan een 'n waterdigte deur mag wees indien so 'n deur as 'n nooduitgang beskikbaar is. Waar geen sodanige waterdigte deur beskikbaar is nie, moet die twee nooduitgange bestaan uit twee stelle staalere wat na afsonderlike deure in die omhulsel of elders lei vanwaar daar toegang tot die reddingsboot- of reddingsvlotinskepingsdek of -dekke is.

135. MIDDELS OM MASJINERIE TOT STILSTAND TE BRING, BRANDSTOFSUIGPIPE AF TE SLUIT EN OPENINGS TE SLUIT.

(1) Middels moet in elke skip verskaf word om ventilasiewaaiers wat masjinerie-, akkommodasie- en vragruimtes bedien, tot stilstand te bring. Vir masjinerie- en vragruimtes moet middels voorsien word om alle dakvensters, deuopenings, lugkokers, ringvormige ruimtes om skoorstene en ander openings na sulke ruimtes te sluit. Sulke middels moet bedien kan word vanaf plekke buite genoemde ruimtes wat nie deur 'n brand in sulke ruimtes ontoeganklik gemaak sal word nie.

(2) In elke skip moet masjinerie wat geforseerde en geïnduseerde trekwaaiers, oliebrandstofvoerpompe, oliebrandstofeenheidpompe en ander soortgelyke brandstofpompe aandryf, met afstandsbeheermiddels buite die ruimtes waarin sodanige masjinerie of pompe geleë is, toegerus word. Sulke beheermiddels moet sodanige masjinerie of pompe in die geval van 'n brand in genoemde ruimtes tot stilstand kan bring.

(3) In elke skip moet elke pyp wat aan enige oliebrandstofopgaard- besink- of daaglikse dienstenk wat nie 'n dubbelboomtenk is nie, verbind is en indien dit beskadig word die inhoud kan laat uitloop en so 'n brandgevaar skep, toegerus word met 'n klep of kraan wat aan die tenk waaraan dit verbind is, bevestig is en vanaf 'n maklik toeganklike plek buite die ruimte waarin die tenk geleë is, toegemaak kan word: met die voorbehoud dat in die geval van eie inlaatpyp na so 'n tenk, 'n terugslagklep wat op dieselfde manier aan die tenk bevestig is in plaas daarvan gebruik kan word. In die geval van 'n oliebrandstofdieptenk waardeur 'n as- of pyptunnel loop kan daar benewens die klep wat aan die tenk aangebring moet word, 'n klep of kleppe aan die pyplyn of -lyne buitekant die tunnel of tunnels aangebring word om in die geval van 'n brand beheer te kan uitoefen.

HOOFSTUK III—ONDERSOEK VOOR DIE UITREIKING VAN 'N VRAGSKIPVEILIGHEIDSKONSTRUKSIESERTIFIKAAT, EN AANSOEK OM DIE UITREIKING VAN DIE SERTIFIKAAT.

136. AANSOEK OM ONDERSOEK VOOR DIE UITREIKING VAN 'N VRAGSKIPVEILIGHEIDSKONSTRUKSIESERTIFIKAAT.

Elke aansoek om die ondersoek van 'n skip voor die uitreiking van 'n vragskipveiligheidskonstruksiesertifikaat moet by die Owerheid of bevoegde beampte gedoen word en moet vergesel word deur sodanige inligting ten opsigte van die skip as wat die Owerheid of bevoegde beampte mag verlang.

134. MEANS OF ESCAPE.

(1) In every ship, stairways and ladderways shall be arranged so as to provide ready means of escape to the lifeboat embarkation deck from all crew spaces, passenger spaces and other spaces in which the crew are normally employed.

(2) In every ship to which this sub-regulation applies, there shall be provided from each engine room, shaft tunnel and boiler room two means of escape as widely separated as practicable, one of which may be a watertight door if such a door is available as a means of escape. Where no such watertight door is available, the two means of escape shall consist of two sets of steel ladders leading to separate doors in the casing or elsewhere from which there is access to the lifeboat or liferaft embarkation deck or decks.

135. MEANS FOR STOPPING MACHINERY, SHUTTING OFF FUEL SUCTION PIPES AND CLOSING OF OPENINGS.

(1) In every ship, there shall be provided means for stopping ventilating fans serving machinery, accommodation and cargo spaces. For machinery and cargo spaces, there shall be provided means for closing all skylights, doorways, ventilators, annular spaces around funnels and other openings to such spaces. Such means shall be capable of being operated from positions outside the said spaces which would not be made inaccessible by a fire within such spaces.

(2) In every ship, machinery driving forced and induced draught fans, oil fuel transfer pumps, oil fuel unit pumps and other similar fuel pumps, shall be fitted with remote controls situated outside the spaces in which such machinery or pumps are situated. Such controls shall be capable of stopping such machinery or pumps in the event of fire in the said spaces.

(3) In every ship, every pipe connected to any oil fuel storage, settling, or daily service tank, not being a double bottom tank, which if damaged would permit discharge of the contents so as to cause a fire hazard, shall be fitted with a valve or cock which shall be secured to the tank to which it is connected and be capable of being closed from a readily accessible position outside the space in which the tank is situated: Provided that in the case of any inlet pipe to such a tank, a non-return valve similarly secured to the tank may be substituted. In the case of an oil fuel deep tank traversed by any shaft or pipe tunnel, in addition to the valve which shall be fitted on the tank, a valve or valves may be fitted on the pipe line or lines outside the tunnel or tunnels to enable control to be exercised in the event of fire.

CHAPTER III—SURVEY PRIOR TO THE ISSUE OF A CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE, AND APPLICATION FOR THE ISSUE OF THE CERTIFICATE.

136. APPLICATION FOR SURVEY PRIOR TO THE ISSUE OF A CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE.

Every application for the survey of a ship prior to the issue of a cargo ship safety construction certificate shall be made to the Authority or proper officer and shall be accompanied by such information relating to the ship as the Authority or proper officer may require.

137. ONDERSOEK VAN 'N SKIP VOOR DIE UITREIKING VAN 'N VRAGSKIPVEILIGHEIDSKONSTRUKSIESERTIFIKAAT.

(1) By ontvangs van die inspeksie-aansoek laat die Owerheid of bevoegde beampte, na gelang van die geval, die skip ondersoek deur 'n bevoegde opnemer.

(2) Die opnemer moet die skip ondersoek en homself tevrede stel dat die inrigtings, materiaal en afmetings van die bouwerk, ketels en ander drukhouers en hul toebehore (behalwe huishoudelike ketels met 'n verwarmingsoppervlakte van 50 vierkante voet of minder en 'n werkdruk van 50 lb. per vierkante duim of minder en ander huishoudelike drukhouers wat so 'n werkdruk het), hoof- en hulpmasjinerie, elektriese installasies en ander uitrusting aan die vereistes van hoofstuk II voldoen en in alle opsigte bevredigend is vir die diens waarvoor die skip bedoel is met inagneming van die tydperk waarvoor die vragskipveiligheidskonstruksiesertifikaat ten opsigte van die skip uitgereik gaan word.

138. AANSOEK OM DIE UITREIKING VAN 'N VRAGSKIPVEILIGHEIDSKONSTRUKSIESERTIFIKAAT.

Aansoek om die uitreiking van 'n vragskipveiligheidskonstruksiesertifikaat moet by die bevoegde beampte by die registrasiehawer van die betrokke skip gedoen word.

HOOFSTUK IV—TUSSENTYDSE ONDERSOEKE.

139. ALGEMEEN.

(1) Die eienaar van elke skip ten opsigte waarvan 'n vragskipveiligheidskonstruksiesertifikaat uitgereik is, moet so lank die sertifikaat van krag bly, die skip op die wyse en met die tussenpose in subregulasie (3) gespesifiseer, laat ondersoek om te sien of die sertifikaat van krag moet bly.

(2) Elke aansoek om die ondersoek van 'n skip ooreenkomstig hierdie regulasie moet by die Owerheid gedoen word wat die vragskipveiligheidskonstruksiesertifikaat ten opsigte van die betrokke skip uitgereik het of by die bevoegde beampte. By ontvangs van die aansoek, laat die Owerheid of bevoegde beampte na gelang van die geval, die skip deur 'n bevoegde opnemer ondersoek.

(3) Die ondersoeke wat kragtens subregulasie (1) uitgevoer moet word, moet tensy die Minister anders besluit, soos volg wees—

- (a) die romp en die skip se syhegstukke moet elke twee jaar in 'n droogdok ondersoek word en die skip se syuitrusting moet elke vier jaar deeglik ondersoek word;
- (b) alle ketels, insluitend uitlaatgas- of stoomverhitte stoomgenerators, bespaarders en huishoudelike ketels (behalwe huishoudelike ketels met 'n verwarmingsoppervlakte van 50 vierkante voet of minder en 'n werkdruk van 50 lb. per vierkante duim of minder) moet elke twee jaar totdat hul ag jaar oud is en daarna jaarliks van binne en van buite ondersoek word;
- (c) skroef- en hol-asse wat van deurlopende voerings voorsien is, of in olie loop, moet elke drie jaar uitgetrek en ondersoek word en ander skroef- en hol-asse moet elke twee jaar uitgetrek en ondersoek word; en
- (d) drukhouers (behalwe huishoudelike drukhouers met 'n werkdruk van 50 lb. per vierkante duim of minder) moet elke 5 jaar inwendig ondersoek word: Met die voorbehoud dat klein houers wat ontoeganklik is getoets mag word onder 'n druk wat gelyk is aan twee maal die werkdruk in die plek van inwendige ondersoek.

137. SURVEY OF A SHIP PRIOR TO THE ISSUE OF A CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE.

(1) The Authority or proper officer, as the case may be, shall upon receipt of the application for survey, cause the ship to be surveyed by a qualified surveyor.

(2) The surveyor shall survey the ship and shall satisfy himself that the arrangements, materials and scantlings of the structure, boilers and other pressure vessels and their appurtenances (other than domestic boilers having a heating surface of 50 square feet or less and a working pressure of 50 lb. per square inch or less and other domestic pressure vessels having such a working pressure), main and auxiliary machinery, electrical installations and other equipment comply with the requirements of Chapter II and are in all respects satisfactory for the service for which the ship is intended, having regard to the period for which the cargo ship safety construction certificate in respect of the ship is to be issued.

138. APPLICATION FOR THE ISSUE OF A CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE.

Application for the issue of a cargo ship safety construction certificate shall be made to the proper officer at the port of registry of the ship concerned.

CHAPTER IV—INTERMEDIATE SURVEYS.

139. GENERAL.

(1) The owner of every ship in respect of which a cargo ship safety construction certificate has been issued shall, so long as the certificate remains in force, cause the ship to be surveyed in the manner and at the intervals specified in sub-regulation (3) for the purpose of seeing whether the certificate should remain in force.

(2) Every application for the survey of a ship in accordance with this regulation shall be made to the Authority who issued the cargo ship safety construction certificate in respect of the ship concerned or to the proper officer. Upon receipt of the application, the Authority or proper officer as the case may be, shall cause the ship to be surveyed by a qualified surveyor.

(3) The surveys to be carried out under sub-regulation (1) shall be as follows unless the Minister decides otherwise—

- (a) the hull and the ship's side fastenings shall be examined in dry dock every two years and the ship's side fittings shall be thoroughly examined every four years;
- (b) all boilers, including exhaust gas or steam heated steam generators, economizers, and domestic boilers (other than domestic boilers having a heating surface of 50 square feet or less and a working pressure of 50 lb. per square inch or less) shall be examined internally and externally every two years until they are eight years old and thereafter annually;
- (c) screw shafts and tube shafts fitted with continuous liners or running in oil shall be withdrawn and surveyed every three years, and other screw and tube shafts shall be withdrawn and surveyed every two years; and
- (d) pressure vessels (other than domestic pressure vessels having a working pressure of 50 lb. per square inch or less) shall be examined internally every five years: Provided that small vessels which are inaccessible may be tested to a pressure equal to twice the working pressure in lieu of internal examination.

(4) Die opnemer moet die skip ondersoek en homself tevrede stel—

- (a) dat sodanige van die dele van die skip en sy uitrusting in subregulasie (3) gespesifiseer wat die onderwerp van die inspeksie-aansoek vorm steeds doeltreffend is; en
- (b) vir sover dit prakties uitvoerbaar is, dat geen belangrike veranderinge aan die romp, masjinerie of uitrusting van die skip waarop die vragskipveiligheidskonstruksiesertifikaat betrekking het sonder goedkeuring van die Minister of Owerheid aangebring is nie.

140. ADDISIONELE ONDERSOEKE.

Nieteenstaande die bepalings van regulasie 139, kan die Minister of Owerheid vereis dat enige skip sodanige addisionele ondersoeke ondergaan as wat hy nodig mag ag.

HOOFSTUK V—EKWIVALENTE EN VRYSTELLINGS.

141. EKWIVALENTE.

Wanneer hierdie Deel vereis dat die romp of masjinerie van 'n skip op 'n bepaalde manier gebou, of bepaalde uitrusting verskaf of bepaalde voorsiening gemaak moet word, kan die Minister toelaat dat die romp of masjinerie van die skip op enige ander manier gebou of enige ander uitrusting verskaf of ander voorsiening gemaak word, indien hy tevrede is dat sodanige ander konstruksie, uitrusting of voorsiening minstens net so doeltreffend is as dié wat by hierdie Deel vereis word.

142. VRYSTELLING TEN OPSIGTE VAN VOORSORGMAATREËLS TEEN SKOK, BRAND OF ANDER GEVARE VAN ELEKTRIESE OORSPRONG.

Die Minister kan enige skip behalwe 'n tenkskip van die vereistes van regulasie 116 (4) vrystel.

143. VRYSTELLING TEN OPSIGTE VAN NOODUITGANGE.

Die Minister kan enige skip van minder as 2,000 ton van die vereistes van regulasie 134 (2) vrystel.

144. ALGEMENE VRYSTELLING.

Die Minister kan enige skip wat nie normaalweg internasionale reise onderneem nie maar wat onder uitsonderlike omstandighede vereis word om 'n enkele internasionale reis te onderneem, vrystel van enige van die vereistes van hierdie Deel op voorwaarde dat dit voldoen aan veiligheidsvereistes wat na die mening van die Minister voldoende is vir die reis wat die skip gaan onderneem.

DEEL III.

(Bote.)

HOOFSTUK I—ALGEMEEN.

145. *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—

(4) The surveyor shall survey the ship with a view to satisfying himself—

- (a) that such of the parts of the ship and its equipment specified in sub-regulation (3) as are the subject of the application for survey remain efficient; and
- (b) so far as practicable, that no material alterations have been made in the hull, machinery or equipment of the ship to which the cargo ship safety construction certificate relates without the approval of the Minister or Authority.

140. ADDITIONAL SURVEYS.

Notwithstanding the provisions of regulation 139, the Minister or Authority may require any ship to undergo such additional surveys as he may deem necessary.

CHAPTER V—EQUIVALENTS AND EXEMPTIONS.

141. 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 that particular provision shall be made, the Minister 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 such other construction, equipment or provision is at least as effective as that required by this Part.

142. EXEMPTION IN RESPECT OF PRECAUTIONS AGAINST SHOCK, FIRE AND OTHER HAZARDS OF ELECTRICAL ORIGIN.

The Minister may exempt any ship, other than a tanker, from the requirements of regulation 116 (4).

143. EXEMPTION IN RESPECT OF MEANS OF ESCAPE.

The Minister may exempt any ship of less than 2,000 tons from the requirements of regulation 134 (2).

144. GENERAL EXEMPTION.

The Minister may exempt any ship which is not normally engaged on international voyages but which in exceptional circumstances, is required to undertake a single international voyage, from any of the requirements of this Part on condition that it complies with safety requirements which are adequate in the opinion of the Minister for the voyage which is to be undertaken by the ship.

PART III.

(Boats.)

CHAPTER I—GENERAL.

145. 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—

„boot” ’n vissersboot, robbevaarder of walvisvaarder of enige vaartuig waarop artikel 68 (1) (a) van die Wet van toepassing is en wat nie ’n passasierskip is nie;

„deurlopende ontwerpvermoë” die remperdekrag en spoed wat deur die fabrikant van die enjin aangegee word as die hoogste waarteen die enjin bevredigende diens sal lewer wanneer dit minstens 24 uur lank sonder onderbreking loop;

„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 ook al mag wees;

„bemanningsruimte” akkommodasie vir die bemanning;

„gelling” ’n imperiale gelling;

„lengte” die geregistreerde lengte in die geval van ’n geregistreerde boot en die totale lengte in die geval van ’n boot wat nie geregistreer is nie;

„susterboot” ’n boot met presies dieselfde ontwerp as een wat reeds ingevolge hierdie Deel behandel is; „ski- of brandingboot” ’n kragaangedrewe boot wat spesiaal vir landing op strande ontwerp is.

*Vir die toepassing van hierdie Deel het die Minister die volgende beamptes as „bevoegde beamptes” in die Republiek aangewys:—

Te Kaapstad, Durban, Port Elizabeth, Walvisbaai en Saldanhabaai: Die Eerstebeampte van die Marine-afdeling; te Oos-Londen, Mosselbaai, Port Nolloth en Luderitz: Die Koopvaardymeester.

146. TOEPASSING VAN DEEL III.

Hierdie Deel is van toepassing op elke boot wat in die Republiek geregistreer of gelisensieer is, of wat ingevolge die Wet vereis word om aldus geregistreer of gelisensieer te wees.

147. BOUSTERKTE.

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

HOOFSTUK II—KONSTRUKSIE VAN BOTE BEHALWE SKI-, BRANDING- EN JOLBOTE, EN ’ ALGEMENE ONDERSOEK.

148. TOEPASSING VAN HOOFSTUK II.

Hierdie Hoofstuk is van toepassing op elke boot behalwe ’n ski-, branding- of jolboot, en ’n „Hoofstuk II-boot” beteken ’n boot waarop hierdie Hoofstuk van toepassing is.

149. VOORLEGGING EN GOEDKEURING VAN PLANNE.

(1) Onderworpe aan die bepalinge van subregulasie (2), moet die bouer of eienaar van enige Hoofstuk II-boot van 30 voet of langer, alvorens daar met die bou daarvan begin word, of op ’n vroeë stadium daarna, die planne en besonderhede in Aanhangsel 6 uiteengesit, in duplo aan die bevoegde beampte voorlê vir goedkeuring deur die Sekretaris.

(2) In die geval van ’n Hoofstuk II-boot wat ’n susterboot is, moet die bouer of eienaar besonderhede van die spesifikasie en planne wat vroeër deur die Sekretaris goedgekeur is, aan die bevoegde beampte verstrek.

(3) Enige later wysigings van of veranderings aan die afmetings, inrigtings of uitrusting wat op die goedgekeurde planne aangegee word, moet aan die bevoegde beampte voorgelê word.

(4) Die Sekretaris mag na goeddunke vra om die voorlegging van bykomende of uitvoeriger planne of besonderhede en mag ook afsien van die vereiste dat sekere van hierdie planne voorgelê word.

„boat” means a fishing, sealing or whaling boat, or any vessel to which section 68 (1) (a) of the Act applies not being a passenger ship;

„continuous rating” means the brake horse power and speed stated by the manufacturer of the engine to be the highest at which the engine will give satisfactory service when operated continuously for not less than 24 hours;

„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 the registered length in the case of a registered boat and the overall length in the case of a boat not registered;

„sister boat” means a boat exactly similar in design to one already dealt with under this Part;

„ski or surf boat” means a powered boat specifically designed for landing on beaches.

* For the purposes of this Part, the Minister has designated the following officers as „proper officers” in the Republic—

At Cape Town, Durban, Port Elizabeth, Walvis Bay and Saldanha Bay: The Principal Officer of the Marine Division.

At East London, Mossel Bay, Port Nolloth and Luderitz: The Shipping Master.

146. APPLICATION OF PART III.

This Part applies to every boat registered or licensed in the Republic or which is, in terms of the Act, required to be so registered or licensed.

147. STRUCTURAL STRENGTH.

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

CHAPTER II—CONSTRUCTION OF BOATS, OTHER THAN SKI AND SURF BOATS AND DINGHIES, AND GENERAL SURVEYS.

148. APPLICATION OF CHAPTER II.

This Chapter applies to every boat other than a ski or surf boat or dinghy, and a „Chapter II boat” means a boat to which this Chapter applies.

149. SUBMISSION AND APPROVAL OF PLANS.

(1) Subject to the provisions of sub-regulation (2), before the construction of any Chapter II boat of 30 feet or over in length is commenced, or at an early stage thereafter, the builder or owner thereof shall submit in duplicate to the proper officer the plans and particulars set forth in Annex 6 for approval by the Secretary.

(2) In the case of a Chapter II boat which is a sister boat, the builder or owner shall furnish to the proper officer particulars of the specification and plans previously approved by the Secretary.

(3) Any subsequent modifications or additions to the scantlings, arrangements or equipment shown on approved plans shall be submitted to the proper officer.

(4) The Secretary may, in his discretion, call for the submission of additional or more detailed plans or particulars, and may also waive the requirement that certain of these plans be submitted.

(5) In die geval van 'n Hoofstuk II-boot wat minder as 30 voet lank is, mag die bevoegde beampte die bouer of eienaar daarvan versoek om sodanige planne en spesifikasies as wat hy mag voorskryf, aan hom voor te lê, en wanneer so 'n versoek tot hom gerig word, moet die bouer of eienaar daaraan voldoen.

150. INSPEKSIE EN TOETSE TYDENS KONSTRUKSIE.

Tydens die konstruksie van 'n Hoofstuk II-boot moet die opnemer nadat die Sekretaris die planne en besonderhede wat ooreenkomstig die bepalings van regulasie 149 voorgelê is, goedgekeur het, inspeksies en toetse uitvoer om te verseker dat die boot gebou word ooreenkomstig—

- (a) sodanige planne en besonderhede; en
- (b) die vereistes van hierdie Deel.

151. ONDERSOEK VAN NUWE KONSTRUKSIE.

(1) Die bouer of einaar van 'n Hoofstuk II-boot van 30 voet of langer, moet die opnemer minstens 'n week vooruit in kennis stel van—

- (a) die aanvang met die raamwerk;
- (b) die aanvang met die beplating, beplanking of lamellering;
- (c) die voltooiing van die aanbring van alle rompbodemtoebehore, die roer, skroefaskoker, as en skroef;
- (d) die tewaterlating; en
- (e) die dok- en seeproewe.

(2) Die dok- en seeproewe moet in die aanwesigheid van die opnemer uitgevoer word by welke geleentheid die pompinrigtings, stuurinrigting en hoof- en hulpmasjinerie tot tevredeheid van die opnemer getoets moet word. Enige sodanige verdere toetse moet uitgevoer word as wat die opnemer nodig ag om homself tevrede te stel dat die boot veilig en geskik is vir die gebruik waarvoor dit bedoel is.

152. HIDROULIESE TOETS VAN KETELS, ENS.

(1) Die opnemer moet deur sodanige ondersoek en berekening as wat nodig mag wees, tevrede gestel word dat alle drukdele in staat is om die werkdrukke waaraan hulle onderwerp mag word, te weerstaan, en hy moet verseker dat alle hidrouliese toetse op 'n bevredigende wyse uitgevoer word.

(2) Ketels moet hidroulies getoets word ooreenkomstig die volgende drukke:

- (a) Vir nuwe ketels—
toetsdruk = $1\frac{1}{2} \times \text{W.D.} + 50 \text{ lb.}$ per vierkante duim vir W.D. meer as 100 lb. per vierkante duim
en = $2 \times \text{W.D.}$ vir W.D. van 100 lb. per vierkante duim en minder.

- (b) vir ketels wat nie nuut is nie—
toetsdruk = $1\frac{1}{2} \times \text{W.D.}$

(3) Nadat die ondersoek van 'n nuwe ketel voltooi is, moet die ketel op 'n plek wat te alle tye duidelik sigbaar is, soos volg gestempel word:—

STEMPEL VAN TOETSOWERHEID.

W.D.
Getoets tot pond
W.D. pond
Datum
Opnemer se paraaf

(4) Drukdele, behalwe ketels, moet, wanneer hulle nuut is, hidroulies getoets word ooreenkomstig die volgende drukke:

(5) In the case of a Chapter II boat of under 30 feet in length, the proper officer may request the builder or owner thereof to submit to him such plans and specifications as he may specify, and upon such request being made, the said builder or owner shall comply therewith.

150. INSPECTION AND TESTS DURING CONSTRUCTION.

During the construction of a Chapter II boat, inspections and tests shall be conducted by the surveyor after the Secretary has approved of the plans and particulars submitted in accordance with the provisions of regulation 149, to ensure that the boat is constructed in accordance with—

- (a) such plans and particulars; and
- (b) the requirements of this Part.

151. SURVEY OF NEW CONSTRUCTION.

(1) The builder or owner of a Chapter II boat of 30 feet or over in length, shall notify the surveyor at least one week in advance of—

- (a) the commencement of framing;
- (b) the commencement of planking, plating or laminating;
- (c) the completion of the fitting of all underwater fittings, rudder, stern tube, shaft and propeller;
- (d) the launching; and
- (e) the dock and sea trials.

(2) Dock and sea trials shall be carried out in the presence of the surveyor, at which times the pumping arrangements, steering gear and main and auxiliary machinery shall be tested to the satisfaction of the surveyor. Any such further tests shall be made as the surveyor considers necessary to satisfy himself that the boat is safe and suitable for the purpose for which it is intended.

152. 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 = $1\frac{1}{2} \times \text{W.P.} + 50 \text{ lb.}$ per square inch for W.P.s in excess of 100 lb. per square inch
and = $2 \times \text{W.P.}$ for W.P.s of 100 lb. square inch and less.

- (b) for boilers which are not new—
test pressure = $1\frac{1}{2} \times \text{W.P.}$

(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 lb.
W.P. lb.
Date
Surveyor's initials

(4) Pressure parts, other than boilers, when new shall be hydraulically tested in accordance with the following pressures:

Ketelmonterings.

Voedingskeerkleppe	2½ × W.D.
Ander monterings	2 × W.D.
Stoompype	2 × W.D.
Voedingspype	2½ × W.D.
Voorverwarmers	2½ × W.D.
(rompe, buise of spoele).	

Oliebrandstofpype, -verwarmers, -spoele of -buis: 400 lb. per vierkante duim of twee maal die maksimum werkdruk waaraan hulle onderwerp word, watter ook al die grootste is.

Verdamperrampe: Twee maal die maksimum werkdruk van die verdamper.

Verdamperspoele of -buis: Twee maal die maksimum werkdruk waaraan hulle onderwerp mag word.

Lughouers: Soos vir ketels.

(5) In hierdie regulasie beteken „W.D.” die toegewysde werkdruk van die ketel.

153. VEILIGHEIDSKLEPPE.

(1) Elke ketel moet van minstens twee veiligheidskleppe voorsien word.

(2) Veiligheidskleppe van elke nuwe ketel moet, nadat dit op die toegewysde druk gestel is, soos volg aan 'n akkumulasietoets onderwerp word:—

Vir Silindriese Ketels.

Gedurende 'n toets van 15 minute met die afsluitkleppe gesluit en onder volle stooktoestande, mag die akkumulasie van druk nie 10 persent van die werkdruk oorskry nie en gedurende die toets moet nie meer voedingswater as wat nodig is om 'n veilige werkwatertepeil te handhaaf, voorsien word nie.

Vir Waterpypketels.

Gedurende 'n toets met die afsluitklep gesluit en onder volle stooktoestande vir solank as wat die watervoorraad in die ketel toelaat, moet die akkumulasie van druk nie 10 persent van die werkdruk oorskry nie, maar in geen geval hoef die toets langer as sewe minute te duur nie.

154. VOEDINGSPOMPE.

Elke Hoofstuk II-boot wat deur stoom aangedryf word, moet van minstens twee heeltemal afsonderlike kragvoedingspompe voorsien word. Een van hierdie voedingspompe mag vanaf die hoofenjins bedien word en die ander een moet 'n onafhanklike kragpomp wees.

155. HOOFENJINS.

(1) Die hoofenjin, asse en skroef moet van 'n beproefde kommersiële marineontwerp en -gehalte wees en krag hê wat geskik is vir die doel waarvoor die Hoofstuk II-boot ontwerp is. Die hoofenjin moet tot tevredenheid van die opnemer geïnstalleer word.

(2) In die geval van 'n Hoofstuk II-boot wat aangedryf word deur 'n enjin wat van druklug afhanklik is om aan die gang gesit te word, moet die opnemer deur sodanige ondersoek en berekening as wat nodig mag wees, tevrede gestel word dat—

(a) Lughouers en ander drukhouers in staat is om die druk wat aan hulle toegewys is, te weerstaan;

(b) die inhoudsmaat van sulke lughouers voldoende is om die hoofenjin twaalf keer agtereenvolgens aan die gang te sit indien dit 'n omstelbare enjin is, of ses keer agtereenvolgens indien dit 'n nie-omstelbare enjin is, sonder om die lug in die houters aan te vul;

Boiler mountings.

Feed check valves	2½ × W.P.
Other mountings	2 × W.P.
Steam pipes	2 × W.P.
Feed pipes	2½ × W.P.
Feed heaters	2½ × W.P.
(bodies, tubes or coils).	

Oil fuel pipes, heaters, coils or tubes: 400 lb. 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 evaporator.

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.

153. 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 15 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.

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.

154. FEED PUMPS.

Every Chapter II 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.

155. MAIN ENGINES.

(1) The main engine, shafting and propeller shall be of proved commercial marine design and quality and of a power suitable for the purpose for which the Chapter II boat is designed. The main engine shall be installed to the satisfaction of the surveyor.

(2) In the case of a Chapter II boat propelled by an engine depending on compressed air for starting, 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) the capacity of such air receivers is sufficient to provide the main engine with 12 consecutive starts if it is a reversible engine or six consecutive starts if it is a non-reversible engine, without replenishing the air in the receivers;

- (c) elke lughouer of die pype tussen elke lugkompressor en elke lughouer, voorsien is van 'n veiligheidsklep wat gestel is om by of onder die werkdruk wat daaraan toegewys is, te werk en dat elke lughouer van 'n smeltbare prop voorsien is indien die veiligheidskleppe aan die pypeleiding aangebring is; en
- (d) een lugkompressor met 'n primêre kragbron wat sonder die gebruik van druklug aan die gang gesit kan word, aangebring is: Met die voorbehoud dat die Sekretaris na goeddunke, die gebruik kan toelaat van 'n handlugkompressor wat in staat is om een leë aansitlughouer binne 30 minute tot die normale werkdruk te laai.
- (3) Waar die hoofenjins afhanklik is van 'n hulp-petrolaansitjins, moet die brandstoftenk vir laasgenoemde geleë wees op 'n plek buite die enjinkamer wat deur die opnemer goedgekeur is.
- (4) Waar die hoofenjins afhanklik is van elektriese aansitnrigtings moet 'n laaieenheid wat onafhanklik van die hoofenjins is, voorsien word, behalwe dat in die geval van 'n Hoofstuk II-boot met tweekingenjins, elk met 'n laaieenheid wat in staat is om albei stelle aansitbatterye te laai, dit aanvaar moet word.
- (5) Waar hoofenjins van ander middels as dié wat in subregulasies (2), (3) en (4) genoem word, afhanklik is vir die aansit daarvan, moet die opnemer tevrede wees dat sulke middels toereikend is vir alle omstandighede.

(6) Die installering van petrol- of paraffienenjins in 'n Hoofstuk II-boot sal slegs toegelaat word indien—

- (a) die enjins nie 'n deurlopende ontwerpvermoë van 50 remperdekrag oorskry nie; en
- (b) die boot nie met oop skeepskombuise of oop vure op die dek toegegerus is nie.

(7) Uitlaatpype en knaldempers moet doeltreffend waterverkoel, beklee of op so 'n wyse geïnstalleer wees dat hulle geen brandgevaar sal skep nie en hulle moet so ingerig wees dat daar geen gevaar bestaan dat water die enjin kan binnekom nie, of dat uitlaatdampe of water in die Hoofstuk II-boot in terugkeer nie.

(8) Elke moontlike voorsorgmaatreël moet getref word om te voorkom dat brandstof en smeerolie in die kimme inloop. Metaal- of loodvoeringbakke met behoorlike dreineermiddels moet onder brandstoftens en, waar moontlik, onder enjins aangebring word.

(9) Geskikte skerms moet, waar nodig, in die masjinerie-ruimtes vir die beskerming van die personeel aangebring word.

156. LENSPOMPINRIGTINGS.

(1) Elke Hoofstuk II-boot moet met lenspompe en -pypeleidings toegegerus word ooreenkomstig die volgende tabel:—

Lengte van boot in voet.		Minimum getal pompe.	Minimum vermoë van pompe in gellings per minuut.	Minimum binnedeursnee van hoofleiding en regstreekse lenspype.	Minimum binnedeursnee van newelensleidings.
Bote ontwerp om pelsers, maasbankers en makriel te vang.	Ander bote.				
(a)	(b)	(c)	(d)	(e)	(f)
—	30 en korter . . .	1 kragaangedrewe of handpomp	15	2"	1½"
30 en korter . . .	Bo 30 tot 65 . . .	2 (1 met kragaandrywing + 1 met kragaandrywing of met handbediening)	30 totaal	2"	1½"
Bo 30 tot 65 . . .	Bo 65 tot 80 . . .	2 (1 met kragaandrywing + 1 met kragaandrywing of met handbediening)	60 totaal	2"	2"
Bo 65 tot 80 . . .	Bo 80 tot 100 . . .	2 kragaangedrewe pompe (1 mag deur die hoof-enjin aangedryf word)	100 totaal	2"	2"
Bo 80 tot 100 . . .	Bo 100 tot 150 . . .	2 kragaangedrewe pompe (1 mag deur die hoof-enjin aangedryf word)	170 totaal	2½"	2"
Bo 100	Bo 150	2 kragaangedrewe pompe (1 mag deur die hoof-enjin aangedryf word)	220 totaal	3"	2½"

- (c) each air receiver, or the piping between each air compressor and each air receiver, is provided with a safety valve set to operate at or below the working pressure assigned, and if the safety valves are fitted on the piping, that each air receiver is fitted with a fusible plug; and
- (d) one air compressor, driven by a prime mover which can be started without the use of compressed air, is fitted: Provided that the Secretary may, in his discretion, allow the use of a hand operated air compressor capable of charging one empty starting air receiver to normal working pressure within 30 minutes.
- (3) Where main engines depend upon an auxiliary petrol driven starting engine, the fuel tank for the latter shall be situated in a position outside the engine room which is approved by the surveyor.
- (4) Where main engines depend upon electrical starting arrangements, a charging unit, independent of the main engines, shall be provided except that in the case of a Chapter II boat with twin engines, each with a charging unit capable of charging both sets of starting batteries, this shall be accepted.

(5) Where main engines depend upon means other than those mentioned in sub-regulations (2), (3) and (4) for starting, the surveyor shall be satisfied that such means are ample for all circumstances.

(6) Petrol or paraffin engines shall only be permitted to be installed in a Chapter II boat if—

- (a) the engines do not exceed 50 brake horse power continuous rating; and
- (b) the boat is not fitted with open galleys or open fires on deck.

(7) Exhaust pipes and silencers shall be efficiently water-cooled, lagged or installed in such a manner that they will create no fire hazard, and they shall be so arranged that there is no danger of water entering the engine or of exhaust fumes or water passing back into the Chapter II boat.

(8) Every possible precaution shall be taken to avoid fuel and lubricating oil running into the bilges. Metal or lead-lined trays with proper means of drainage shall be provided under fuel tanks and, where possible, under engines.

(9) Suitable guards shall, where necessary, be provided in the machinery spaces for the protection of personnel.

156. BILGE PUMPING ARRANGEMENTS.

(1) Every Chapter II boat shall be fitted with bilge pumps and piping in accordance with the following table:

Length of Boat in Feet.		Minimum Number of Pumps.	Minimum Capacity of Pumps in Gallons per Minute. (d)	Minimum Internal Diameter of Bilge Main and Direct Bilge Piping. (e)	Minimum Internal Diameter of Bilge Branch Piping. (f)
Boats Designed for Catching Pilchards, Maasbankers and Mackerel. (a)	Other Boats. (b)				
—	30 and under . . .	1 power driven or hand operated	15	2"	1½"
30 and under . . .	Over 30 to 65 . . .	2 (1 power driven + 1 power driven or hand operated)	30 total	2"	1½"
Over 30 to 65 . . .	Over 65 to 80 . . .	2 (1 power driven + 1 power driven or hand operated)	60 total	2"	2"
Over 65 to 80 . . .	Over 80 to 100 . . .	2 power driven (1 may be driven by main engine)	100 total	2"	2"
Over 80 to 100 . . .	Over 100 to 150 . . .	2 power driven (1 may be driven by main engine)	170 total	2½"	2"
Over 100 . . .	Over 150 . . .	2 power driven (1 may be driven by main engine)	220 total	3"	2½"

(2) Handlenspompe moet vanaf 'n plek bokant die beskotdek bedien kan word.

(3) Waar twee kragaangedrewe lenspompe aangebring moet word, moet hul primêre kragbronne geheel en al onafhanklik van mekaar wees, met die voorbehoud dat indien meer as twee pompe aangebring word om die vereiste vermoë te voorsien, twee onafhanklike primêre kragbronne as voldoende beskou sal word.

(4) In 'n Hoofstuk II-boot wat vereis word om met minstens twee kragaangedrewe pompe toegerus te word, mag geen kragaangedrewe pomp wat voorsien word, 'n vermoë van minder as 25 persent van die totale vereiste vermoë hê nie en minstens een kragaangedrewe pomp wat onafhanklik van die hoofenjins is, moet 'n vermoë van minstens 50 persent van die vereiste totaal hê.

(5) Onderworpe aan die bepalings van subregulasie (8) moet lenssuigpype, -pypleidings en dreineermiddels so ingerig wees dat enige water wat in 'n hoofafdeling mag inloop, deur minstens een lenssuigpyp wat in so 'n afdeling geleë is, uitgepomp kan word en alle afdelings binne elke hoofafdeling moet so ingerig wees dat hulle na daardie lenssuigpyp dreineer wanneer die boot gelyklastig is en regop is of 'n slagsy van hoogstens 5 grade het.

(6) Elke onafhanklike kragpomp moet 'n regstreekse suigpyp uit die ruimte waarin dit geleë is, hê met die voorbehoud dat hoogstens twee regstreekse suigpype in enige enkele ruimte vereis word. Elke sodanige suigpyp moet 'n deursnee hê van nie minder as die Hoofstuk II-boot se hoofstroomleiding se deursnee nie. Die regstreekse suigpype in die boot se masjinerieruimte moet so ingerig wees dat water vanaf enige kant van die ruimte deur regstreekse suigpype na onafhanklike lenspompe gepomp kan word.

(7) 'n Stoom- of luglensejekteursuijpyp met dieselfde grootte as die kragpomp se regstreekse suigpyp waarna in subregulasie (6) verwys is, mag in plaas van een van laasgenoemde aangebring word.

(8) In 'n Hoofstuk II-boot wat langer as 80 voet is, mag die volgende afdelings indien hulle nie vir die vervoer van waterballas gebruik word nie, soos volg van lensdreineerinrigtings voorsien word:

- in die geval van afdelings wat voor die aanvarings-beskat geleë is, van 'n handpomp;
- in die geval van afdelings wat voor die aanvarings-beskat geleë is op 'n boot wat 'n waterdigte beskat tussen die aanvarings- en masjinerieruimte-

(2) Hand bilge pumps shall be capable of being worked from a position above the bulkhead deck.

(3) Where two power driven bilge pumps are required to be fitted, the prime movers for these shall be entirely independent of each other, provided that, if more than two pumps are fitted to supply the required capacity, two independent prime movers shall be considered adequate.

(4) In a Chapter II boat required to be provided with not less than two power driven pumps, no power pump provided shall have a capacity less than 25 per cent of the total capacity required, and at least one power driven pump independent of the main engines shall have a capacity of not less than 50 per cent of the total required.

(5) Subject to the provisions of sub-regulation (8), bilge suction, piping and means for drainage shall be so arranged that any water which may enter a main compartment can be pumped out through at least one bilge suction situated in such compartment, and all compartments within each main division shall be so arranged to drain to that bilge suction, when the boat is on an even keel and is either upright or has a list of not more than 5 degrees.

(6) Every independent power pump shall have a direct suction from the space in which it is situated, provided that not more than two direct suction shall be required in any one space. Every such suction shall be of a diameter not less than that of the Chapter II boat's main bilge pipe. The direct suction in the boat's machinery space shall be so arranged that water may be pumped from each side of the space through direct suction to independent bilge pumps.

(7) A steam or air bilge ejector suction of similar size to the power pump direct suction referred to in sub-regulation (6), may be substituted for one of the latter.

(8) In a Chapter II boat exceeding 80 feet in length, the following compartments, if not used for carrying water ballast, may be provided with bilge drainage arrangements as follows:

- in the case of compartments situated forward of the collision bulkhead, with a manual pump;
- in the case of compartments situated forward of the collision bulkhead on a boat which has a watertight bulkhead between the collision and ma-

beskot het, van 'n handpomp of 'n dreineerkraan wat aan die aanvaringsbeskot bevestig is en van bo die hoofdek vandaan bedien word;

- (c) in die geval van waterdigte afdelings wat oor die drukasnis steek van 'n handpomp, of van 'n selfsluitende dreineerkraan 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 dreineerkraan wat vanaf die enjinkamer of van bo die hoofdek vandaan bedien word.

(9) Handpompe wat ooreenkomstig subregulasie (8) voorsien word, moet 'n vermoë van minstens 15 gelling per minuut hê en toegerus wees met 'n suigpyp met 'n binnedeursnee van minstens 2 duim. Sulke handpompe moet van 'n plek bokant die beskotdek vandaan bedien kan word.

(10) Lenssuigpype en dreineermiddels in 'n Hoofstuk II-boot wat nie in waterdigte afdelings ingedeel is nie, moet op so 'n wyse ingerig wees dat enige water wat in die boot inloop, na minstens een lenssuigpyp kan dreineer.

(11) Dreineerkrane wat ooreenkomstig subregulasie (8) voorsien is, moet 'n binnedeursnee van minstens 1½ duim hê en moet te alle tye toeganklik wees.

(12) Lenspypinrigtings moet sodanig wees dat elkeen van die pompe wat ooreenkomstig subregulasie (1) voorsien is, water vanaf elkeen van die lenssuigpype waarna in subregulasies (5) en (10) verwys word, kan trek.

(13) Kragaangedrewe lenspompe moet selflaaiend wees, of op so 'n wyse geïnstalleer wees dat hulle van die see af gelaai kan word sonder dat die kimme oorstroom word.

(14) Elke newelenssuigpyp, behalwe handpompe met slegs een suigpyp, moet toegerus word met 'n afsluitklep wat te alle tye maklik toeganklik is.

(15) Wanneer 'n lenspomp voorsien is van 'n verbinding met die see, moet 'n terugslagklep wat te alle tye maklik toeganklik is, op so 'n wyse tussen die verbinding met die see en die hoofleiding aangebring word dat seewater nie in die kimme kan inloop wanneer die verbinding met die see en die lenskleppe gelyktydig oop is nie.

(16) Wanneer ruime van 'n sementvulling voorsien is, moet die sementvlak tot by die bokant van die vloere reik en 'n lensput met 'n inhoudsmaat van minstens 4 kubieke voet moet by die agterent van die ruim geleë wees. 'n Geskikte sif moet oor die put geplaas word en die lenssuigpyp moet voorsien wees van 'n geskikte sif waarin die oppervlakte van die openings minstens drie maal die deursneeoppervlakte van die lenssuigpyp moet wees.

(17) Lenssuigpype moet oor die algemeen voorsien wees van siwwe en die oppervlakte van die openings van sulke siwwe moet minstens twee maal die deursneeoppervlakte van die lenspyp wees.

(18) Alle lensuitlaatpype moet voorsien wees van kleppe of krane wat aan die romp bevestig is op die wyse wat in regulasie 158 voorgeskryf word, of op 'n ander ewe doeltreffende wyse wat deur die Sekretaris goedgekeur is nadat volledige besonderhede aan hom voorgelê is.

(19) Lenspype moet gemaak wees van staal, koper of ander materiaal wat die opnemer as geskik vir die doel beskou, maar kort lengtes van rubber- of plastiekslang wat te alle tye duidelik sigbaar is, mag aangebring word waar nodig om die uitwerking van vibrasie te verminder; enige slang wat aldus aangebring word, moet sterk genoeg wees om die inmekaarvou as gevolg van die suiging te weerstaan en die lasse moet gemaak word met klampe wat geskik vir die doel is.

chinery 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.

(9) Manual pumps provided in accordance with sub-regulation (8), 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 bulkhead deck.

(10) Bilge suction and means for drainage on a Chapter II 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.

(11) Drain cocks provided in accordance with sub-regulation (8), shall have an internal diameter of not less than 1½ inches and shall be accessible at all times.

(12) Bilge piping arrangements shall be such that each of the pumps provided in accordance with sub-regulation (1), shall be able to draw water from each of the bilge suction referred to in sub-regulations (5) and (10).

(13) Power-driven bilge pumps shall be self-priming or installed in such a manner that they can be primed from the sea without flooding the bilges.

(14) 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.

(15) 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.

(16) Where holds are provided with cement filling, the cement level shall be to the top of the floors and a well or dill of not less than 4 cubic feet capacity shall be situated at the after end of the hold. A suitable strainer shall be placed over the well and the bilge suction shall be fitted with a suitable strainer, the area of the openings in which shall be at least three times the cross-sectional area of the bilge suction pipe.

(17) Bilge suction 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.

(18) All bilge discharge pipes shall be fitted with valves or cocks attached to the hull in the manner prescribed in regulation 158 or by other equally efficient means approved by the Secretary after full particulars have been submitted to him.

(19) Bilge piping shall be of steel, copper or other material considered by the surveyor to be suitable for the purpose, but short lengths of rubber or plastic hose, clearly visible at all times, may be fitted where necessary to reduce the effects of vibration; any hose so installed shall be of sufficient strength to withstand collapsing due to suction, and joints shall be made with clamps suitable for the purpose.

(20) In 'n steenkoolgestookte Hoofstuk II-boot moet 'n stuk buigbare suigslang met 'n geskikte skroefverbinding na die lensleiding van die masjinerieruimte verskaf word, sodat die enjin- en ketelruimtekinne leeggepomp kan word ingeval die suigsif verstop sou raak. Die verbinding aan die lensleiding moet van 'n gevoegde metaaldop voorsien word.

157. BRANDSTOFTENKS.

(1) In 'n Hoofstuk II-boot moet 'n brandstoftenk wat van die romp geskei is, aan die volgende vereistes voldoen:

- (a) Dit moet gemaak wees van staal of ander materiaal wat na die mening van die opnemer, geskik vir die doel is.
- (b) Indien dit van staal is, moet die minimum dikte soos volg wees:

Inhoudsmaat van tenk in gellings.	Minimum dikte in duime.
Meer as 25 maar minder as 300	$\frac{1}{8}$ "
Meer as 300 maar minder as 1,000	$\frac{3}{16}$ "
Meer as 1,000	$\frac{1}{4}$ "

(c) Wanneer die inhoudsmaat van die brandstoftenk nie meer as 25 gelling is nie, mag die materiaal minder as $\frac{1}{8}$ duim dik wees: Met die voorbehoud dat indien so 'n tenk vir petrol gebruik gaan word en van materiaal is wat minder as $\frac{1}{8}$ duim dik en nie korrosiebestand is nie, dit, nadat dit klaar gebou is, van binne en van buite volgens die warmdompelproses gegalvaniseer moet word.

(d) Tenks met 'n inhoudsmaat van meer as 25 gelling moet soos volg van verstewers voorsien word:

Dikte van tenkbeplating in duime.	Maksimum ongesteunde plat oppervlakte in vierkante voete.
$\frac{1}{8}$ "	3
$\frac{3}{16}$ "	6
$\frac{1}{4}$ "	9
$\frac{5}{16}$ "	12

Vir ander diktes van die beplating moet die toelaatbare ongesteunde plat oppervlakte deur interpolasie bepaal word.

- (e) In die geval van brandstoftenks wat van ander materiaal as staal gebou is, moet die afmetings sodanig wees dat dit sterkte verleen wat gelykstaan met dié van staal.
- (f) Indien die opnemer dit nodig ag moet keerplate binnekant die tenks aangebring word.
- (g) 'n Brandstoftenk met 'n inhoudsmaat van meer as 300 gelling maar nie meer as 1,000 gelling nie, moet voorsien word van 'n geskikte deur vir skoonmaakdoeleindes. Vir tenks met 'n inhoudsmaat van meer as 1,000 gelling moet 'n mangatdeksel aangebring word.
- (h) Die nate van metaaltenks moet gesweis, gesweis-soldeer of dubbelgeklink word, maar gesoldeerde nate mag vir 'n tenk met 'n inhoudsmaat van hoogstens 25 gelling gebruik word, mits die soldeersel 'n smeltpunt van minstens 800° F. het.
- (i) Alle tenks moet by voltooiing met hidrouliese druk getoets word tot 'n drukhoogte wat minstens die maksimum drukhoogte is waaraan die tenk onderwerp kan word, of 8 voet bo die bokant van die tenk, watter ook al die grootste is. Die opnemer moet by sulke toetse aanwesig wees, maar in die geval van enige tenk met 'n inhoudsmaat van hoogstens 300 gellings, mag die opnemer, wanneer

(20) In a coal-fired Chapter II 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.

157. FUEL TANKS.

(1) In a Chapter II boat, a fuel tank which is separate from the hull shall comply with the following requirements:

- (a) it shall be constructed of steel or other material which, in the opinion of the surveyor, is suitable for the purpose.
- (b) If constructed of steel, the minimum thickness shall be as follows:

Capacity of Tank in Gallons.	Minimum Thickness in Inches.
Over 25 but not over 300	$\frac{1}{8}$ "
Over 300 but not over 1,000	$\frac{3}{16}$ "
Over 1,000	$\frac{1}{4}$ "

(c) 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 galvanized inside and outside by the hot dipped process after construction is completed.

(d) 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.

- (e) In the case of fuel tanks constructed of materials other than steel, the scantlings shall be such as to provide strength equivalent to that of steel.
- (f) If the surveyor considers it necessary, baffle plates shall be fitted inside tanks.
- (g) 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.
- (h) Metal tank seams shall be welded, brazed or double riveted, but soldered seams may be used for a tank having a capacity of not more than 25 gallons if the solder has a melting point of not less than 800° F.
- (i) All 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 above the top of the tank, whichever is the greater. Such tests shall be witnessed by the surveyor, but, in the case of any tank having a capacity of not

dit vir hom onmoontlik is om by die toets aanwesig te wees, 'n skriftelike verklaring van die fabrikant aanvaar waarin hy sertifiseer dat die hidrouliese druktoets wat in hierdie paragraaf beskryf word, uitgevoer is en dat geen gebreke aan die lig gekom het nie.

(2) Wanneer die inhoudsmaat van 'n brandstoftenk 25 oorskrei, moet dit van die volgende voorsien word:—

(a) 'n Vulpyp wat—

- (i) 'n binne deursnee van minstens $1\frac{1}{2}$ duim het;
- (ii) van die bokant van die tenk na die oop dek lei, met die verbinding deur die dek waterdig;
- (iii) voorsien is van 'n geelkoperskroefprop of dop; en
- (iv) buigbaar genoeg is om enige vibrasie of inlating van die tenk op te neem; en

(b) 'n Lugpyp met minstens dieselfde binnedeursnee as die vulpyp wat van die bokant van die tenk na 'n feilige hoogte en plek bokant die oop dek lei deur 'n waterdigte dekverbinding en weg van alle openings in die romp of dekhuis. Die ent van die pyp moet met gaas bedek wees en met 'n hoek van 180 grade afgebui wees. Twee of meer lugpype mag aftak van die pyp wat na die dek lei, met die voorbehoud dat die deursnee van die dekpyp vergroot word om die vereiste deursneeoppervlakte te handhaaf. Die gaas moet van korrosievrye materiaal wees en moet so aangebring word dat dit maklik verwyder kan word om skoongemaak of vervang te word.

(3) (a) Elke brandstoftenk moet voorsien wees van geskikte middels om die stand van die brandstof te bepaal. Indien peilkokers aangebring word, moet hulle na 'n toeganklike plek bokant die beskotdek lei. Wanneer hierdie reëling nie prakties uitvoerbaar is nie, mag kort peilkokers in die masjinerieruimtes aangebring word, mits hulle na maklik toeganklike plekke bokant die platforms lei en voorsien is van selfsluitende krane of kleppe. Aanslagplate moet onder alle peilkokers aangebring word.

(b) Glas- of plastiekpype mag slegs onder die volgende omstandighede as peilmeettoestelle gebruik word:

- (i) aan 'n tenk met 'n inhoudsmaat van minder as 25 gelling wat brandstof bevat met 'n ontvlammingspunt hoër as 125° F. (toe toets); en
- (ii) aan 'n tenk met 'n inhoudsmaat van 25 gelling of meer, wat brandstof bevat met 'n ontvlammingspunt hoër as 125° F. (toe toets) met die meettoestelle bo en onder voorsien van selfsluitende kleppe of krane; en

(iii) indien die pype behoorlik teen skok beskerm is.

(4) Wanneer 'n dreineerkraan of -klep aan 'n brandstoftenk aangebring is, moet dit 'n standardskroefuitlaat hê wat met 'n skroefprop toegeprop gehou word wanneer die kraan of klep nie gebruik word nie.

(5) Alle uitlaatpype van 'n brandstoftenk moet by sodanige tenk voorsien wees van krane of kleppe wat te alle tye maklik toeganklik is en van buite die afdeling waarin die tenk geleë is, vandaan bedien kan word.

(6) Elke brandstoftenk moet op 'n plek aangebring word wat van verhitte oppervlakte verwyder is.

(7) Brandstoftens wat nie van die romp geskei is nie, moet as 'n deel van die romp beskou word, met inagneming van die sterktevereistes van die Hoofstuk II-boat en die moontlikheid van die besoedeling van die oliebrandstof met water, maar die konstruksie- en toetsstandaarde mag nie laer wees as dié wat vir tenks wat van die romp geskei is, vereis word nie.

158. ROMPBODEMTOEBEHORE.

(1) Kleppe of krane moet aangebring word aan alle suig- en uitlaatpype wat onderkant die oop dek deur die

more than 300 gallons, the surveyor may, when it is not possible for him to witness the test, accept a written statement from the manufacturer certifying that the hydraulic pressure test described in this paragraph has been carried out and that no defects were revealed.

(2) Where the capacity of a fuel tank exceeds 25 gallons, it shall be provided with the following:

(a) a filling pipe that—

- (i) is at least $1\frac{1}{2}$ inches in internal diameter;
- (ii) leads from the top of the tank to the weather-deck, the connection through the deck being watertight;
- (iii) is fitted with a screwed brass plug or cap; and
- (iv) is made sufficiently flexible to absorb any vibration or sinkage of the tank; and

(b) a vent pipe of at least the same internal diameter as the filling pipe leading from the top of the tank to a safe height and location above the weather-deck through a watertight deck connection and clear of all openings into the hull or deck-house. The end of the vent pipe shall be covered with gauze and turned down through an angle of 180 degrees. Two or more vent pipes may be branched off from the pipe leading to the deck, provided the deck pipe is increased in diameter to maintain the required cross-sectional area. The gauze shall be made of incorrodible material and shall be so fitted that it can readily be removed for cleaning or renewal.

(3) (a) Every fuel tank shall be provided with a suitable means for ascertaining the level of the fuel. If sounding pipes are fitted, they shall be led to an accessible position above the bulkhead deck. Where this arrangement is not practicable, short sounding pipes may be fitted in the machinery spaces if they are led to readily accessible positions above the platforms and fitted with self-closing cocks or valves. Striking plates shall be fitted under all sounding pipes.

(b) Glass or plastic tubing may be used as level gauges only under the following circumstances:

- (i) on a tank of under 25 gallons capacity containing fuel having a close test flash point of over 125° F.; and
- (ii) on a tank of 25 gallons capacity or over, containing fuel having a close test flash point of over 125° F. with gauges fitted with self-closing valves or cocks top and bottom; and
- (iii) if the tubing is suitably protected against impact.

(4) Where a drain cock or valve is fitted to a fuel tank, it shall have a standard screwed outlet which shall be kept plugged with a screwed plug whenever the cock or valve is not in use.

(5) All outlet pipes from a fuel tank shall at such tank be fitted with cocks or valves which are readily accessible at all times and are capable of being operated from outside the compartment in which the tank is situated.

(6) Every fuel tank shall be fitted in a position remote from heated surfaces.

(7) 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 Chapter II 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.

158. UNDERWATER FITTINGS.

(1) Valves or cocks shall be fitted to all suction and discharge pipes which pass through the hull below the

romp gaan; met die voorbehoud dat hierdie paragraaf nie van toepassing sal wees nie op—

- (a) pompuitleattype met 'n binnedeursnee van $1\frac{1}{2}$ " of minder wat bokant die laswaterlyn geleë is;
- (b) kielverkoelingsstelsels; of
- (c) spuigate wat van die oop dek na die Hoofstuk II-boat se kant bokant die laswaterlyn loop.

Kleppe of krane moet so na moontlik aan die romp aangebring word.

(2) Suig- en uitlaatkleppe en -krane aan 'n Hoofstuk II-boat van staal moet aan die romp of aan die beplating van gefabriceerde waterkaste bevestig word deur middel van—

- (a) boute met versinkkoppe wat 'n moerdraad deur die beplating sny, of
- (b) tapbante wat in swaar staalblokke wat aan die beplating gesweis of geklink word, ingeskrœf word maar nie deur die beplating dring nie,

en sulke kleppe of krane moet voorsien wees van tappe wat deur die beplating gaan.

(3) Suig- en uitlaatkleppe en -krane aan 'n Hoofstuk II-boat van hout moet geïnsien wees en voorsien wees van tappe wat deur die beplanking gaan en bevestig is deur middel van deurloopboute met 'n buitering of flens tussen die houtkoppe en die beplanking: Met die voorbehoud dat die opnemer enige ander doeltreffende manier om sulke toebehoere te bevestig mag toelaat na oorweging van volledige besonderhede wat aan hom voorgelê is.

(4) Suig- en uitlaatkleppe en -krane van 'n Hoofstuk II-boat met 'n gewapende plastiekkonstruksie moet aan die romp bevestig word met middels wat deur die opnemer goedgekeur is nadat volledige besonderhede aan hom voorgelê is.

(5) Uitblaaskleppe of -krane aan die kant van 'n Hoofstuk II-boat moet op 'n toeganklike plek aangebring word en moet op so 'n wyse geplaas word dat 'n mens maklik kan sien of hulle oop of toe is; die handvatsels mag nie verwyder kan word nie, tensy die kleppe of krane toe is.

159. SKEEPSKOMBUISE.

(1) In 'n Hoofstuk II-boat mag steenkool, olie of elektrisiteit vir die verwarmings- en kookinrigtings gebruik word. In 'n boat van 100 bruto registerton of meer mag vloeibare petroleumgas toegelaat word, maar slegs onder die volgende omstandighede—

- (a) die installasie moet deur die opnemer goedgekeur word;
- (b) geen deel van die installasie mag in die masjinerie-ruimte geleë wees nie;
- (c) die silinders, reguleerders en laedrukveiligheidstoestelle moet bokant die dek geplaas wees in 'n geskikte, goed geventileerde metaalkabinet wat van die woonruimtes en ander ingeslote ruimtes geskei is deur 'n gasdigte afskorting en van hittebronne, elektriese kables, ens. verwyder is, en moet doeltreffend geaard wees;
- (d) die silinders moet in 'n regop posisie bevestig word en die bedieningsuitrusting moet te alle tye maklik toeganklik wees;
- (e) goedgekeurde veiligheidsstoestelle moet voorsien word om die laedrukstadiums van die apparaat teen hoë druk te beskerm en enige lekkasie van so 'n toestel moet ver van enige hittebron na die buitelug gelei word;
- (f) die installasie moet voorsien wees van 'n afsluitklep onmiddellik binnekant die afdeling wat die kook- of verwarmingstoestelle bevat, benewens 'n klep aan elke toestel met die voorbehoud dat, in-

weatherdeck; provided that this paragraph shall not apply to—

- (a) pump discharges of $1\frac{1}{2}$ " internal diameter or less, which are situated above the load water line;
- (b) keel cooling systems; or
- (c) scuppers which pass from the weatherdeck to the Chapter II boat's side above the load water line.

Valves or cocks shall be fitted as close to the hull as possible.

(2) Suction and discharge valves and cocks on a steel Chapter II 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 Chapter II boat shall be flanged and provided with spigots passing through the planking and secured by means of through bolts having an outer ring or flange between bolt heads and planking: Provided that the surveyor may allow any other efficient means of securing such fittings after consideration of full particulars submitted to him.

(4) Suction and discharge valves and cocks of a Chapter II boat of reinforced plastic construction, shall be attached to the hull by means approved by the surveyor after full particulars have been submitted to him.

(5) Blow-down valves or cocks on the Chapter II 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.

159. GALLEYS.

(1) In a Chapter II boat, the heating and cooking arrangements may be by means of coal, oil or electricity. In a boat of 100 gross register tons or over, liquid petroleum gas may be permitted, but only under the following conditions—

- (a) the installation shall be as approved by the surveyor;
- (b) no part of the installation shall be situated in machinery spaces;
- (c) the cylinders, regulators and low pressure safety devices, shall be placed above deck in a suitable, well ventilated metal cabinet separated from living spaces and other closed spaces by a gas tight partition and removed from sources of heat, electric cable, etc., and shall be effectively earthed;
- (d) the cylinders shall be secured in an upright position, and the operating equipment shall at all times be readily accessible;
- (e) approved safety devices shall be provided to protect the low pressure stages of the apparatus from high pressure, and any leak off from such a device shall be conducted to the open air remote from any source of heat;
- (f) the installation shall be provided with a stop valve immediately inside the compartment containing the cooking or heating appliances in addition to a valve on each appliance, provided that, if there is

dien daar slegs een toestel deur middel van 'n kort laedrukleiding verbind is, dit voldoende sal wees om slegs een klep te hê waar die leiding die afdeling waarin die toestel geleë is, binnegaan;

- (g) die laedrukleidings moet van naatlose staal of koper wees en moet behoorlik teen beskadiging en die gevolge van vibrasie, uitsetting en krimpings beskerm wees. Die gebruik van 'n kort stuk hoë-drukslang mag aan 'n laedrukleiding toegelaat word, met die voorbehoud dat die opnemer met die inrigting tevrede is;
- (h) alle toestelle moet voorsien wees van uitrusting deur middel waarvan die gastoevoer geheel en al afgesny word wanneer die vlam, om watter rede ook al, uitgedoof word; en
- (i) die hoë-, medium- en laedrukleidings moet tydens die installasie en daarna met tussenpose van vier jaar soos volg in die aanwesigheid van die opnemer getoets word—
 - (i) hoë- en mediumdrukleidings tot 'n druk van 425 lb./dm.²;
 - (ii) laedrukleidings tot 'n druk van 5 lb./dm.²;
 - (iii) die drukke wat in subparagraaf (i) en (ii) genoem word, moet minstens 15 minute lank gehandhaaf word en gedurende daardie periode mag daar geen drukval op 'n akkurate manometer of drukmeter geregistreer word nie; en
 - (iv) die buigbare gedeeltes van koperleidings moet onder druk getoets en ooruitgegloeï word.

(2) Na voltooiing van die installasie, moet die hele installasie vir lekplekke getoets word deur die gebruik van seepwater, of 'n vloeibare reinigingsmiddel, of volgens 'n ander metode wat deur die Sekretaris goedgekeur is.

(3) In 'n Hoofstuk II-boot van minder as 100 bruto-registerton is die gebruik van vloeibare petroleumgas verbode.

(4) In elke Hoofstuk II-boot van hout moet die kombuisstoom bevestig wees aan 'n blok van beton of ander geskikte materiaal wat minstens 2 duim dik is. Beskotte waar die stoom is, moet beklee wees met asbes wat met plaatstaal bedek is en die kombuisskroosteen moet doeltreffend geïsoleer wees waar dit deur die deksoldering gaan.

160. VERKOELINGSTELSLS.

(1) Volledige besonderhede van verkoelingsinstallasies (behalwe huishoudelike koelkaste) moet vir goedkeuring aan die Sekretaris voorgelê word.

(2) Wanneer ammoniak gebruik word, moet die masjinerie in 'n doeltreffend geventileerde afdeling wees wat van die aandryfmasjinerieruimtes geïsoleer is.

(3) Die verkoelingsmasjinerie, pypleidings, kleppe en drukhouers moet van 'n beproefde ontwerp en gehalte wees en moet tot tevredeheid van die opnemer geïnstalleer word.

(4) Verkoelingsmasjiene wat metielchloried gebruik, mag nie toegelaat word nie.

161. BESKOTTE.

(1) Elke oordekte of gedeeltelik oordekte Hoofstuk II-boot wat langer as 30 voet is, maar nie langer as 80 voet nie, moet toegerus wees met minstens twee behoorlik gespasiëerde waterdigte beskotte. Die spasiëring van hierdie beskotte is onderhewig aan goedkeuring deur die opnemer met inagneming van die boot se tipe konstruksie en die diens waarvoor dit bedoel is.

only one appliance connected by a short low pressure lead, it will be sufficient to have one valve only where the lead enters the compartment in which the appliance is situated;

- (g) the low pressure leads shall be of seamless steel or copper and suitably protected from damage and the effects of vibration, expansion and contraction. The use of a short length of high pressure hose may be permitted on a low pressure lead, provided the arrangement is to the satisfaction of the surveyor;
- (h) all appliances shall be provided with equipment by means of which the gas supply is completely cut off when the flame, through whatever cause, is extinguished; and
- (i) the high, medium and low pressure leads shall be tested during the installation and at four yearly intervals thereafter, in the presence of the surveyor as follows—
 - (i) high and medium pressure leads to a pressure of 425 lb./in.²;
 - (ii) low pressure leads to a pressure of 5 lb./in.²;
 - (iii) the pressures mentioned in sub-paragraphs (i) and (ii) shall be maintained for not less than 15 minutes, during which period no drop in pressure shall be recorded on an accurate manometer or pressure gauge; and
 - (iv) the flexible portions of copper leads shall be pressure tested and re-annealed.

(2) After installation is complete, the whole installation shall be tested for leaks by the use of soapy water or liquid detergent or by some other method approved by the Secretary.

(3) In a Chapter II boat of less than 100 gross register tons, the use of liquid petroleum gas is prohibited.

(4) In every wooden Chapter II boat, the galley stove shall be secured to a pad of concrete or other suitable material at least 2 inches thick. Bulkheads in way of the stove shall be lined with asbestos covered with sheet steel, and the galley funnel shall be effectively insulated where it passes through the deck head.

160. REFRIGERATING SYSTEMS.

(1) Full particulars of refrigeration installations (other than domestic refrigerators) shall be submitted to the Secretary for approval.

(2) When ammonia is used, the machinery shall be in an efficiently ventilated compartment isolated from the propelling machinery spaces.

(3) The refrigerating machinery, piping, valves and pressure vessels, shall be of proved design and quality and shall be installed to the satisfaction of the surveyor.

(4) Refrigerating machines using methyl chloride shall not be allowed.

161. BULKHEADS.

(1) Every decked or partially decked Chapter II boat over 30 feet but not exceeding 80 feet in length, shall be fitted with not less than two suitably spaced watertight bulkheads. The spacing of these bulkheads shall be subject to approval by the surveyor, having regard to the type of construction of the boat and to the duties for which it is intended.

(2) Elke Hoofstuk II-boot wat langer as 80 voet is, moet toegerus wees met minstens drie behoorlik gespaasieerde waterdigte beskotte wat vanaf die kiel of horing-rib tot by die oop dek strek. Die voorste beskot moet 'n redelike afstand vanaf die boeg van die boot aangebring word onderworpe aan 'n minimum van een-twintigste van die lengte. Die posisies van die beskotte moet in ooreenstemming wees met die planne wat ingevolge regulasie 149 voorgelê en goedgekeur is.

(3) Openings in waterdigte beskotte moet geskikte waterdigte deure of ander sluitmiddels hê wat te alle tye maklik en vinnig aangebring kan word. Sulke sluittoestelle moet sterk genoeg en styfpassend wees tot tevreidenheid van die opnemer.

(4) Waterdigte beskotte van hout, staal en gewapende plastiek moet ooreenkomstig planne wat deur die Sekretaris goedgekeur is, gebou en verstyf word. Waterdigte houtbeskotte mag bestaan uit—

- (a) dubbele diagonale bekleding of beplanking met geverfde of behandelde stof tussen die lae en verstywers aan die een kant;
- (b) twee diktes tong-en-groefplanke wat verstywers en isolering bevat; of
- (c) enkelbekleding of -beplanking behoorlik verstyf en gekalfater,

en die afmetings moet bepaal word ooreenkomstig die tabel in Aanhangsel 7.

(5) In 'n Hoofstuk II-boot wat langer as 50 voet is, moet die beskot tussen die enjinkamer en visruim gebou word op die wyse wat in subregulasie (4) (a) en (b) voorgeskryf word.

(6) (a) In die geval van 'n Hoofstuk II-boot wat ontwerp is vir pelagiese skoolvisvang, moet die visruim verdeel word deur een langsbeskot wat hoogstens 5 persent van die geregistreerde breedte van die boot vanaf die middellyn geleë is of deur twee langsbeskotte indien die afstand tussen hulle nie 60 persent van die geregistreerde breedte van die boot te bowe gaan nie.

(b) Sulke beskotte moet blywend wees en moet gebou en verstyf wees tot tevreidenheid van die opnemer: Met die voorbehoud dat styfpassende gevelings by die luik toegelaat kan word indien die doeltreffendheid van die beskot of beskotte, na die mening van die opnemer, nie benadeel sal word nie.

162. LUIKE.

(1) In 'n Hoofstuk II-boot mag die afmetings van luikhoofde, -balke en -deksels nie minder wees as wat in Aanhangsel 8 aangegee word nie.

(2) Luike moet voorsien word van doeltreffende middele om hulle met klamplatte te bevestig.

(3) Gladdedekpoortdeksels moet stewig van staal of brons gemaak wees met 'n skroef- of bajonetsluiting en moet deur middel van 'n permanente ketting bevestig of vasgeheg word.

163. DEURE, DRUMPELS, PATRYSPOORTE EN NOODLUIKE.

(1) In elke Hoofstuk II-boot moet die drumpels van leure wat toegang tot die hoofromp verleen 'n minimum hoogte van 12 duim hê, maar deure wat bo-op enige boudekhuis of verhoogde voorkasteel geleë is, mag drumpels hê wat minstens 6 duim hoog is.

(2) Patryspoorte wat onder die oopdek of aan die kante of ente van die masjienomhulsel, of aan die kante of ente van enige eerste verdiepingstruktuur wat toegang tot die hoofromp verleen, aangebring is, moet van doeltreffende stormklappe voorsien wees.

(2) Every Chapter II boat exceeding 80 feet in length shall be fitted with not less than three suitably spaced watertight bulkheads extending from the keel or horn timber to the weatherdeck. The forward bulkhead shall be located at a reasonable distance from the bow of the boat subject to a minimum of one-twentieth of the length. The positions of the bulkheads shall be in accordance with the plans submitted and approved in terms of regulation 149.

(3) 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.

(4) Wood, steel and reinforced plastic watertight bulkheads shall be constructed and stiffened in accordance with plans approved by the Secretary. Wood watertight bulkheads may consist of either—

- (a) double diagonal sheathing or planking with painted or treated fabric between the layers and stiffeners on one side;
- (b) two thicknesses of tongued and grooved planking containing stiffeners and insulation; or
- (c) single sheathing or planking suitably stiffened and caulked

and the scantlings shall be determined by the table in Annex 7.

(5) In a Chapter II boat exceeding 50 feet in length, the bulkhead between the engine room and fish hold shall be constructed in the manner prescribed in sub-regulation (4) (a) and (b).

(6) (a) In the case of a Chapter II boat designed for pelagic shoal fishing, the fish hold shall be divided by either one longitudinal bulkhead situated not more than 5 per cent of the registered breadth or the boat from the centre line or two longitudinal bulkheads if the distance between them does not exceed 60 per cent of the registered breadth of the boat.

(b) Such bulkheads shall be permanent and shall be constructed and stiffened to the satisfaction of the surveyor: Provided that, in way of the hatch, close-fitting shifting boards may be allowed if, in the opinion of the surveyor, the efficiency of the bulkhead or bulkheads will not be impaired.

162. HATCHES.

(1) In a Chapter II boat, scantlings of hatch coamings, beams and covers shall be not less than as set out in Annex 8.

(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.

163. DOORS, SILLS, SIDE SCUTTLES AND ESCAPE HATCHES.

(1) In every Chapter II boat, 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 forecabin, may have sills of not less than 6 inches in height.

(2) Side scuttles fitted below the weatherdeck or on the sides or ends of the engine casing or on the sides or ends of any first tier structure giving access to the main hull, shall be fitted with efficient deadlights.

(3) Soliede getemperde glas wat minstens een kwart-duim dik is, moet in stuurhuisvensters met 'n dagligmaat van tot 30 duim vierkant aangebring word. Vir venster-groottes van meer as 30 duim vierkant moet die minimum glasdikte drie-agstes van 'n duim wees.

(4) Wanneer getemperde lamelglas in stuurhuisvensters aangebring word, moet die glas 1/16" dikker wees as die diktes wat in subregulasie (3) aangegee word.

(5) Wanneer dit nodig word om stuurhuisvensters in 'n bestaande Hoofstuk II-boot te vervang, geld die glasdiktes wat in subregulasies (3) en (4) voorgeskryf word.

(6) Deure wat toegang tot die hoofromp verleen, moet sterk gebou en aan stewige skarniere gehang wees en die sluitinrigtings moet sodanig wees dat 'n deur van weers-kante oopgemaak kan word.

(7) Waar die toegang tot die bemanningsruimte deur die enjinkamer gaan, moet 'n noodluik van so 'n ruimte na die oop dek aangebring word.

(8) Twee enjinkameringsange wat maklike toegang en uitgang verleen en elkeen minstens 22 duim vierkant moet wees, moet in elke Hoofstuk II boot van 25 bruto register-ton of meer aangebring word. Elke oordekte Hoofstuk II-boot van minder as 25 bruto registerton, moet twee ingange van 22 duim vierkant hê, of een ingang wat minstens 36 duim by 24 duim groot is.

(9) Wanneer daar slaapplek vir meer as 10 man in 'n bemanningsruimte is, moet 'n ingang wat ruim genoeg is, so na moontlik aan die hartlyn aangebring word. 'n Afsonderlike noodluik moet ook voorsien word.

164. VERSKANSINGS.

(1) Onderworpe aan die bepalings van subregulasies (2) en (3) moet verskansings, relings, kettings, draadtoue of enige kombinasie daarvan om die oopdek van enige Hoofstuk II-boot en minstens 30 duim hoog bokant daardie dek aangebring word. Indien soliede verskansings aangebring word, moet die maksimum hoogte 39 duim wees.

(2) Indien die opnemer van mening is dat die permanente verskansings, relings, kettings en draadtoue wat in subregulasie (1) genoem word, die visvangbedrywighede van die boot sal belemmer, mag hy toelaat dat daarsonder klaargekom word op die plekke waar die belemmering sou plaasgevind het: Met die voorbehoud dat draagbare verskansings, relings, kettings of draadtoue op sulke plekke aangebring moet word.

(3) Die verskansings, relings, kettings en draadtoue wat in subregulasie (1) genoem word mag by dekhuse minder as 30 duim hoog wees indien geskikte handrelings aan die kante van sulke dekhuse aangebring word.

(4) Waterafvoerpoorte moet voldoende wees vir die doeltreffende dreinerings van water op die dek en moet op die regte plekke geleë wees. Die oppervlakte van waterafvoerpoorte moet minstens een vierkante voet per 6 voet lengte van verskansings wat 30 duim hoog is, wees; vir groter hoogtes moet die oppervlakte in direkte verhouding vergroot word.

165. VENTILASIE.

(1) In elke Hoofstuk II-boot moet die ventilators voldoende in getal en grootte wees om genoegsame ventilasie te verskaf vir alle ruimtes wat na die mening van die opnemer ventilasie nodig het.

(2) Slaapruimtes vir die bemanning op 'n Hoofstuk II-boot moet van voldoende in- en uitlaatventilators voorsien word om 3 vierkante duim inlaattoepervlakte en 3 vierkante duim uitlaattoepervlakte te verskaf vir elke bemanningslid wat daardie ruimtes vir slaapdoeleindes gebruik, onderworpe aan 'n minimum van 12 vierkante duim vir enige enkele ruimte.

(3) Solid toughened glass of not less than one-quarter of an inch thick, shall be fitted to wheelhouse windows of up to 30 inches square clear light size. For window sizes greater than 30 inches square, the minimum thickness of glass shall be three-eighths of an inch.

(4) Where laminated toughened glass is fitted to wheelhouse windows, the thickness shall be increased by one-sixteenth inch over the thicknesses indicated in sub-regulation (3).

(5) Where, in an existing Chapter II boat, replacements to wheelhouse windows become necessary, the thicknesses of glass specified in sub-regulations (3) and (4) shall apply.

(6) 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.

(7) 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.

(8) Two engine room entrances, providing easy access and exit, each measuring at least 22 inches square, shall be provided in every Chapter II boat of 25 gross register tons or over. Every decked Chapter II boat of less than 25 gross register tons, shall have two entrances measuring 22 inches square or one entrance measuring not less than 36 inches by 24 inches.

(9) Where more than 10 men are berthed in a crew space, an entrance of ample size shall be fitted as near as practicable to the centre line. A separate escape hatch shall also be provided.

164. BULWORKS.

(1) Subject to the provisions of sub-regulations (2) and (3), bulwarks, rails, chains, wire ropes, or any combination thereof, shall be fitted around the weather deck of every Chapter II boat, at least 30 inches in height above that deck. If solid bulwarks are fitted, the maximum height shall be 39 inches.

(2) If the surveyor considers that permanent bulwarks rails, chains and wire ropes mentioned in sub-regulation (1) would interfere with the fishing operations of the boat he may allow them to be dispensed with at places where interference would occur: Provided that portable bulwarks rails, chains or wire ropes shall be fitted at such places.

(3) The bulwarks, rails, chains and wire ropes mentioned in sub-regulation (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. The area of freeing ports shall be at least one square foot per 6 feet length of bulwarks which are 3 inches high; for greater heights the area shall be increased in direct proportion.

165. VENTILATION.

(1) In every Chapter II boat, 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 Chapter II 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, subject to a minimum of 12 square inches for any one space.

(3) Minstens twee ventilators, elk minstens 6 duim in deursnee, moet aangebring word in die enjinkamer van 'n Hoofstuk II-boot wanneer die perdekrug van die hoof-enjin 100 of minder is. Vir 'n hoofenjin met 'n perdekrug van meer as 100, moet die deursnee van die ventilators met 1 duim vermeerder word vir elke bykomende 50 perdekrug of gedeelte daarvan.

(4) Die luikhoof van enige ventilator met 'n deursnee van tot 6 duim wat op die hoofdek aangebring is, moet minstens 12 duim hoog en minstens $\frac{1}{4}$ duim dik wees indien dit van staal gemaak is. Die dikte van die luikhoof van enige ventilator met 'n deursnee van meer as 6 duim moet minstens vyf-sestiende duim wees indien dit van staal gemaak is.

(5) Enjinkamerventilators moet van doeltreffende klappe of proppe voorsien wees.

(6) Wanneer slaapplekke onder dekke en langs masjinerieruimtes geleë is, moet doeltreffende middels voorsien word om te verhoed dat dampe vanaf die masjinerieruimtes binnedring.

166. SKROEFASLAERS.

Skroefaslaerinrigtings in 'n Hoofstuk II-boot moet bestaan uit of—

- (a) (i) 'n skroefaslaer wat minstens drie en 'n half maal die deursnee van die as in lengte is;
- (ii) 'n drukstuk wat binne die vaartuig geleë is; en
- (iii) 'n waterdigte buis wat tussen die laer en die drukstuk aangebring is; of
- (b) enige ander tipe wat deur die opnemer goedgekeur is.

167. TOETS VAN WATERDIGTE AFDELINGS.

(1) Die beskotte van 'n Hoofstuk II-boot van hout of gewapende plastiek moet, voordat die boot te water gelaat word, deur slangdruk of ander geskikte middels tot tevredenheid van die opnemer getoets word: Met die voorbehoud dat hierdie vereiste slegs van toepassing is op beskotte wat bedoel is om waterdig te wees.

(2) Voordat 'n Hoofstuk II-boot van staal te water gelaat word, moet die afdelings in die hoofromp, voordat daar met enige sementering begin word, soos volg aan slang- of druktoetse onderwerp word—

- (a) dubbele bome wat nie vir die vervoer van olie gebruik gaan word nie, moet getoets word tot by 'n waterdrukhoogte gelyk aan die maksimum drukhoogte wat tydens gebruik verwag kan word;
- (b) diep- en piektenks wat vir die vervoer van water gebruik word en dieptenks en dubbelboomtenks wat vir die vervoer van oliebrandstof ingerig is, moet getoets word tot by 'n waterdrukhoogte wat gelyk is aan die maksimum drukhoogte waaraan die tenks tydens gebruik onderwerp kan word, maar minstens 8 voet bokant die koepel van die tenks waar die holte tot by die sterkte deks 16 voet oorskry, en 3 voet waar die holte hoogstens 10 voet is. Tussendrukhoogtes mag deur interpolasie bepaal 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 tonnells, oop dekke en waterleiers moet met 'n slang getoets word met 'n spuitstuk met 'n deursnee van hoogstens half duim; die waterdruk in die slang moet minstens 30 lb. per vierkante duim wees; en
- (e) waterdigte deure moet onder gebruikstoestande op die proef gestel word en met 'n slang getoets word soos in paragraaf (d) beskryf.

(3) At least two ventilators, each not less than 6 inches in diameter, shall be provided to the engine room of a Chapter II boat where the horse power of the main engine is 100 or less. For a main engine of over 100 horse power, the diameter of the ventilators shall be increased by 1 inch for every additional 50 horse power or part thereof.

(4) The coaming of any ventilator up to 6 inches in diameter fitted on the main deck shall be not less than 12 inches in height and not less than $\frac{1}{4}$ inch in thickness if made of steel. The thickness of the coaming of any ventilator over 6 inches in diameter shall not be less than 5/16 inch if made of steel.

(5) Engine room ventilators shall be fitted with efficient flaps or plugs.

(6) Where sleeping accommodation is situated below decks and adjoining the machinery spaces, means shall be provided to prevent fumes from the machinery spaces from infiltrating into the crew spaces.

166. STERN BEARINGS.

Stern bearing assemblies in a Chapter II boat shall consist of either—

- (a) (i) a stern bearing of not less than three and one half shaft diameters in length;
- (ii) a gland situated inside the vessel; and
- (iii) a watertight tube fitted between the bearing and the gland; or
- (b) any other type approved by the surveyor.

167. TESTING OF WATERTIGHT COMPARTMENTS.

(1) The bulkheads of a wooden or reinforced plastic Chapter II 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) Before a steel Chapter II 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 using a nozzle not greater than $\frac{1}{2}$ inch diameter; the pressure of water in the hose shall be not less than 30 lb. per square inch; and
- (e) watertight doors shall be tried under working conditions and hose tested in the manner described in paragraph (d).

168. ANKERS EN ANKERKETTINGS.

(1) Elke Hoofstuk II-boot van minder as 25 bruto registerton moet 'n anker hê wat 15 lb. weeg vir elke 10 voet of gedeelte van 10 voet van sy totale lengte. Die anker moet bevestig wees aan 'n ankerketting of draad-, manilla- of nylontou wat so groot is dat dit die opnemer tevrede stel. Die lengte van die ketting, draad of tou moet

minstens drie maal die lengte van die boot wees.

(2) Elke Hoofstuk II-boot van 25 bruto registerton of meer, maar nie meer as 100 bruto registerton nie, moet ankers en ankerkettings ooreenkomstig die vereistes van onderstaande tabel hê:

Bruto Registerton.	Boegankers.		Ankerketting.	
	Getal.	Min. gewig van elkeen in lbs.	Getal lengtes van 15 vaam.	Deursnee duime.
25 of meer, maar onder 40	1	100	2	$\frac{3}{8}$
40 of meer, maar onder 60	2	120 en 80	3	$\frac{7}{16}$
60 of meer, maar onder 80	2	180 en 100	4	$\frac{1}{2}$
80 of meer, maar onder 90	2	180 en 120	4	$\frac{5}{8}$
90 of meer, maar nie meer as 100 nie	2	240 en 160	4	$\frac{5}{8}$

168. ANCHORS AND CABLES.

(1) Every Chapter II boat of under 25 gross register tons shall carry an anchor weighing 15 lb. for every 10 feet or part of 10 feet of overall length. The anchor shall be attached to a chain cable or wire, manila or nylon rope of such a size as shall be to the satisfaction of the surveyor. The length of the cable, wire or rope

shall not be less than three times the length of the boat.

(2) Every Chapter II boat of 25 gross register tons or over but not over 100 gross register tons, shall carry anchors and cables in accordance with the requirements of the following table:—

Gross Register Tons.	Bow Anchors.		Chain Cable.	
	Number.	Min. Weight of each in Lbs.	No. of 15 Fathom Lengths.	Diameter Inches.
25 or over but under 40	1	100	2	$\frac{3}{8}$
40 or over but under 60	2	120 and 80	3	$\frac{7}{16}$
60 or over but under 80	2	180 and 100	4	$\frac{1}{2}$
80 or over but under 90	2	180 and 120	4	$\frac{5}{8}$
90 or over but not over 100	2	240 and 160	4	$\frac{5}{8}$

(3) Elke Hoofstuk II-boot van meer as 100 registerton moet minstens twee ankers hê, een met 'n gewig wat nie minder is nie as dié wat van onderstaande formule verkry word, en een met 'n gewig wat nie minder as twee-derdes van dié van onderstaande formule verkry, is nie:

$$W = 0.15 (L \times (B + D)) + 100$$

waar W = gewig van die anker in lbs.

L = geregistreerde lengte van die boot in voete

B = grootste breedte van die boot in voete, gemeet tot aan die binnekant van die beplanking of beplating.

D = diepte van die boot in voete, midskeeps gemeet vanaf die bokant van die kiel tot by die bokant van die dekbalk aan die kant; wanneer 'n verhoogde dek agter verder as midskeeps strek moet die diepte D tot by die lyn van die bodak gemeet word.

(4) Vir elke Hoofstuk II-boot van meer as 100 bruto registerton, moet die deursnee en lengte van die brugskaa-

(3) Every Chapter II boat of over 100 gross registered tons shall carry at least two anchors, one of a weight not less than that derived from the following formula, and one of a weight not less than two-thirds of that derived from the following formula:—

$$W = 0.15 (L \times (B + D)) + 100$$

where W = weight of anchor in lb.

L = registered length of boat in feet.

B = greatest breadth of boat in feet, measured to the inside of planking or plating.

D = depth of boat in feet, measured at amidships from the top of the keel to the top of the deck beam at side; where a raised deck aft extends forward of amidships, the depth D shall be measured to the line of the upper deck.

(4) For every Chapter II boat of over 100 gross registered tons, the diameter and length of stud link or open

kel- of oopskakelankerketting wat voorsien moet word, in ooreenstemming met die vereistes van onderstaande tabel wees:

Gewig van hoofanker in lbs.	Minimum grootte van ketting in duime.	Totale getal lengtes van 15 vaam.
Bo 300 tot 400 . . .	$\frac{5}{8}$	4
Bo 400 tot 500 . . .	$\frac{11}{16}$	4
Bo 500 tot 600 . . .	$\frac{13}{16}$	4
Bo 600 tot 700 . . .	$\frac{15}{16}$	5
Bo 700 tot 800 . . .	1	7
Bo 800 tot 900 . . .	$1\frac{1}{16}$	8
Bo 900 tot 1,000 . . .	$1\frac{1}{8}$	8
Bo 1,000 tot 1,100 . . .	$1\frac{3}{16}$	9
Bo 1,100 tot 1,200 . . .	$1\frac{1}{2}$	9
Bo 1,200 tot 1,300 . . .	$1\frac{3}{4}$	10
Bo 1,300 tot 1,400 . . .	$1\frac{1}{2}$	9
Bo 1,400 tot 1,500 . . .	$1\frac{3}{4}$	10

(5) Die koppe van stoklose ankers met inbegrip van die penne en toebehore, moet minstens 60 persent van die totale gewig van die anker wees.

(6) Waar ankers met stokke voorsien word, mag die gewigte nie minder as dié van subregulasies (1), (2) en (3) verkry, wees nie en die gewig van die stok moet 25 persent van die totale gewig van die anker met insluiting van die harp, maar met uitsluiting van die stok, wees.

(7) Die Sekretaris mag ankers met 'n spesiale ontwerp met gewigte van nie minder as 75 persent van dié wat in hierdie regulasie voorgeskryf word nie, goedkeur, maar die grootte en lengte van die ketting moet in sulke gevalle wees soos in hierdie regulasie voorgeskryf.

(8) Meganiese middels om die anker te bedien, moet voorsien word in enige Hoofstuk II-boot wat vereis word om 'n anker wat meer as 150 lb. weeg, te hê; indien 'n wenas wat gewoonlik vir visvang of ander doeleindes gebruik word, gebruik kan word, mag so 'n wenas vir die bediening van die anker aanvaar word.

(9) Ankers moet 'n goedgekeurde ontwerp hê en moet vervaardig wees van besmede smeestaal, gesmede opeherdvlloeistaal of -giestaal. 'n Toetsertifikaat moet aan die opnemer getoon word vir elke anker wat meer as 168 lb. weeg en vir elke ankerketting met 'n deursnee van half duim of meer.

169. STUURINRIGTINGS.

(1) Besonderhede van die stuurinrigtings, met inbegrip van die roer en roerkoning, vir elke Hoofstuk II-boot, behalwe 'n boot wat slegs met 'n handroerpen gestuur hoef te word, of 'n boot wat korter as 30 voet is, moet aan die Sekretaris voorgelê word.

(2) Elke Hoofstuk II-boot van 30 voet of langer moet voorsien wees van 'n alternatiewe stuurinrigting wat geskik is vir sy grootte en die tipe stuurinrigting wat gebruik word. In 'n boot wat nie langer as 120 voet is nie, mag die alternatiewe stuurinrigting bestaan uit 'n verlenging van die roerkoning met 'n reghoekige ent tesame met 'n reserweroerpen. Die dekverbinding moet waterdig gemaak word.

(3) Die hoofstuurinrigting van elke Hoofstuk II-boot van 150 voet of langer, moet kragaandrywing hê. 'n Doeltreffende sluit- of reminrigting moet aangebring word om die roer vas te hou wanneer ratwisseling nodig is.

170. ALGEMENE ELEKTRIESE VOORSORGMATREËLS.

(1) (a) In elke Hoofstuk II-boot moet alle elektriese uitrusting so gebou en geïnstalleer word dat daar geen gevaar van besering sal wees vir iemand wat dit behoorlik hanteer nie. Onderworpe aan die bepalings van paragraaf (b) moet die blootgestelde metaaldele van elektriese

link chain anchor cable to be supplied, shall be in accordance with the requirements of the following table:—

Weight of Main Anchor in Lb.	Minimum Size of Chain in Inches.	Total Number of 15 Fathom Lengths.
Over 300 to 400 . . .	$\frac{5}{8}$	4
Over 400 to 500 . . .	$\frac{11}{16}$	4
Over 500 to 600 . . .	$\frac{13}{16}$	4
Over 600 to 700 . . .	$\frac{15}{16}$	5
Over 700 to 800 . . .	1	7
Over 800 to 900 . . .	$1\frac{1}{16}$	8
Over 900 to 1,000 . . .	$1\frac{1}{8}$	8
Over 1,000 to 1,100 . . .	$1\frac{3}{16}$	9
Over 1,100 to 1,200 . . .	$1\frac{1}{2}$	9
Over 1,200 to 1,300 . . .	$1\frac{3}{4}$	10
Over 1,300 to 1,400 . . .	$1\frac{1}{2}$	9
Over 1,400 to 1,500 . . .	$1\frac{3}{4}$	10

(5) The heads of stockless anchors including pins and fittings, shall be not less than 60 per cent of the total weight of the anchor.

(6) Where anchors with stocks are provided, the weights shall be not less than those derived from sub-regulations (1), (2) and (3) and the weight of the stock shall be 25 per cent of the total weight of the anchor including shackle but excluding stock.

(7) The Secretary may approve anchors of special design having weights of not less than 75 per cent of those prescribed in this regulation, but the size and length of cable in such cases shall be as prescribed in this regulation.

(8) Mechanical means for working the anchor shall be provided on any Chapter II boat which is required to carry an anchor of more than 150 lb. in weight; if a winch normally used for fishing or other purposes can be used, such winch may be accepted for the purpose of working the anchor.

(9) Anchors shall be of approved design and shall be manufactured from forged wrought iron, forged open hearth ingot steel or cast steel. A test certificate shall be produced to the surveyor for every anchor of more than 168 lb. in weight and for every chain cable of $\frac{1}{2}$ inch or more in diameter.

169. STEERING GEAR.

(1) Particulars of steering arrangements, including rudder and stock, for every Chapter II boat other than a boat requiring hand tiller steering only or a boat which is under 30 feet in length, shall be submitted to the Secretary.

(2) Every Chapter II boat of 30 feet or over in length shall be provided with alternative means of steering suitable to its size and the type of steering used. In a boat not exceeding 120 feet in length, the alternative steering arrangements may consist of an extension to the rudder stock with a square end, in conjunction with a spare tiller. The deck connection shall be made watertight.

(3) The main steering gear of every Chapter II boat of over 150 feet in length shall be operated by power. An efficient locking or braking arrangement shall be fitted to keep the rudder steady when a change of gear is required.

170. GENERAL ELECTRICAL PRECAUTIONS.

(1) (a) In every Chapter II boat, all electrical equipment shall be so constructed and installed that there will be no danger of injury to any person handling it in a proper manner. Subject to the provisions of paragraph (b), where electrical equipment supplied as boat's equip-

uitrusting wat as bootuitrusting voorsien word en bedoel is om onder 'n spanning van meer as 55 volt te werk, wanneer sulke metaaldele nie bedoel is om 'n hoër spanning as die aarde te hê nie, maar so 'n spanning as gevolg van 'n fout kan hê, geaard word.

(b) Blootgestelde metaaldele van draagbare elektriese lampe, gereedskap en dergelike apparate wat voorsien word as bootuitrusting wat onder 'n spanning van meer as 55 volt moet werk, moet geaard word deur 'n geleier in die toevoerkabel, tensy die gebruik van dubbele isolering of 'n geskikte afsondertransformator beskerming verleen wat minstens net so doeltreffend as aarding deur 'n geleier is. Waar elektriese lampe, gereedskap of ander apparate in klam ruimtes gebruik word, moet voorsiening gemaak word om, sover doenlik, te verseker dat die gevaar van elektriese skok tot 'n minimum beperk word.

(2) Elke elektriese kabel in 'n Hoofstuk II-boot moet 'n vlamvertragende tipe wees. Alle metaalmantels en metaalpantering van enige elektriese kabel wat in die boot in gebruik is, moet elektries deurlopend en geaard wees. Elke elektriese kabel wat nie 'n metaalmantel of -pantering het nie, moet andersins doeltreffend beskerm wees indien dit aangebring is waar die onklaarraking daarvan 'n brand of ontploffing kan veroorsaak.

(3) Die bedrading in elke Hoofstuk II-boot moet op so 'n wyse ondersteun word dat dit nie kan skaaf of anders beskadig kan word nie.

(4) In elke Hoofstuk II-boot moet die lasse in alle elektriese geleiers slegs in aansluit- of uitlaatkaste gemaak word behalwe in die geval van laespanningkommunikasiestroombane. Al sodanige aansluit- of uitlaatkaste moet so gebou wees dat hulle die verspreiding van brand daarvandaan verhoed.

(5) In elke Hoofstuk II-boot moet ligtoebehore so ingerig wees dat hulle temperatuurstygings verhoed wat nadelig vir die elektriese bedrading daarvan kan wees en 'n gevaar van brand in die omringende materiaal kan laat ontstaan.

(6) Elke elektriese ruimteverwarmer wat deel van die uitrusting van 'n Hoofstuk II-boot uitmaak, moet op sy plek bevestig word en moet so gebou wees dat die gevaar van brand tot 'n minimum beperk word. Geen sodanige verwarmer moet gebou word met 'n element wat so blootgestel is dat kleré, gordyne of ander soortgelyke materiaal deur die hitte van die element geskroei of aan die brand gestee kan word nie.

(7) In elke Hoofstuk II-boot moet elke afsonderlike elektriese stroombaan behalwe 'n stroombaan wat die boot se stuurinrigting bedien, teen oorbelasting en kortsluiting beskerm word. Die stroomdravermoë van die stroombaan wat dit beskerm en die ontwerpvermoë of stelling van die toestel, moet duidelik en blywend op of naby elke oorbelastingbeskermingstoestel aangedui word.

(8) In elke Hoofstuk II-boot moet alle opgaarbatterye gehuisves word in kaste of afdelings wat so gebou is dat die batterye teen beskadiging beskerm word en so geventileer is dat die ophoping van ontplofbare gas tot 'n minimum beperk word.

(9) In ruimtes waar ontvlambare mengsels moontlik kan versamel, mag geen elektriese uitrusting geïnstalleer word nie tensy dit 'n tipe is wat nie die betrokke mengsel sal laat ontvlam nie.

(10) In elke Hoofstuk II-boot moet elke ligstroombaan in 'n bunker of ruim voorsien word van 'n afsonderlik skakelaar buitekant die ruimte.

ment is to be operated at a voltage in excess of 55 volts, the exposed metal parts of such 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.

(b) Exposed metal parts of portable electric lamps, tools and similar apparatus, supplied as boat's equipment to be operated at a voltage in excess of 55 volts, shall be earthed through a conductor in the supply cable, unless by the use of double insulation or a suitable isolating transformer, protection at least as effective as earthing through a conductor is provided. When electric lamps, tools or other apparatus are used in damp spaces, provision shall be made, so far as practicable, to ensure that the danger of electric shock is reduced to a minimum.

(2) Every electric cable in a Chapter II boat, shall be of a flame retarding type. All metal sheaths and metal armour of any electrical cable in use in the boat, shall be electrically continuous and shall be earthed. Every electric cable which is neither metal sheathed nor armoured shall, if installed where its failure might cause a fire or explosion, be otherwise effectively protected.

(3) Wiring in every Chapter II boat shall be supported in such a manner as to avoid chafing and other injury.

(4) In every Chapter II boat, 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) In every Chapter II boat, lighting fittings shall be arranged to prevent rises in temperature which would be injurious to the electrical wiring thereof or which would result in a risk of fire in surrounding material.

(6) Every electric space-heater forming part of the equipment of a Chapter II boat, 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 Chapter II boat, every separate electrical circuit, other than a circuit which operates the boat's steering gear, shall be protected against overload and short circuit. There shall be clearly and permanently indicated on or near each over-load protective device, the current carrying capacity of the circuit which it protects and the rating or setting of the device.

(8) In every Chapter II boat, all accumulator (storage) 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 minimize the accumulation of explosive gas.

(9) In spaces where inflammable mixtures are liable to collect, no electrical equipment shall be installed unless it is of a type which will not ignite the mixture concerned.

(10) In every Chapter II boat, every lighting circuit in a bunker or hold shall be provided with an isolating switch outside the space.

HOOFSTUK III—PERIODIEKE ONDERSOEKE:

BOTE BEHALWE SKI-, BRANDING- en JOLBOTE.

171. TOEPASSING VAN HOOFSTUK III.

Hierdie Hoofstuk is van toepassing op elke boot behalwe 'n ski-, branding- of jolboot en 'n „Hoofstuk III-boat” beteken 'n boot waarop hierdie Hoofstuk van toepassing is.

172. ALGEMEEN.

Die romp, ketels, masjinerie en uitrusting van 'n Hoofstuk III-boat moet met die tussenpose en op die wyse in regulasies 173 tot en met 188 uiteengesit, ondersoek word.

173. KETELS WAT VOLLEDIG INWENDIG ONDERSOEK KAN WORD.

(1) 'n Stoomketel wat volledig inwendig ondersoek kan word, moet elke 12 maande ondersoek word en moet voordat die ondersoek begin, heeltemal daarvoor oorgemaak word en alle dele moet deeglik tot tevredeheid van die opnemer skoongemaak word. Ketelmonteerings moet oop- en skoongemaak word en alle kleppe moet ingeslyp word waar dit nodig mag wees. Enige deel wat 'n behoorlike ondersoek van die ketel verhinder, moet verwyder word en die ketel moet gelig word indien die opnemer 'n nadere ondersoek van die onderkant daarvan nodig ag. Bekleding moet verwyder word indien die opnemer dit nodig ag.

(2) Die ketel moet elke vier jaar hidroulies getoets word tot 'n druk van $1\frac{1}{2}$ maal werkdruk: Met die voorbehoud dat indien groot herstelwerk aan die ketel gedoen word, dit onmiddellik na voltooiing van sodanige herstelwerk aldus getoets moet word.

(3) Wanneer stoom na 'n ondersoek in 'n ketel opgewek word, moet die veiligheidskleppe in die teenwoordigheid van die ondersoeker ooreenkomstig die toegewysde druk gestel word en die opnemer moet verseker dat middels aangebring word om te verhoed dat daar later met die stelling van die kleppe gepeuter word. Die toegewysde druk moet met inagneming van die ontwerpdruk en die algemene toestand van die ketel deur die opnemer bepaal word. Indien die opnemer dit verlang moet enige herstelwerk voltooi word voordat die druk toegewys word.

174. KETELS WAT NIE VOLLEDIG INWENDIG ONDERSOEK KAN WORD NIE.

Ketels wat nie volledig inwendig ondersoek kan word nie, moet ooreenkomstig die bepalings van regulasie 173 behandel word: Met die voorbehoud dat sulke ketels elke 12 maande in die teenwoordigheid van die opnemer hidroulies getoets moet word tot 'n druk van $1\frac{1}{2}$ maal werkdruk.

175. STOOMPIPE.

(1) Onderworpe aan die bepalings van subregulasies (2) en (3) moet hoof- en hulpstoompipe met 'n binne-deursnee van meer as 3 duim met die volgende tussenpose in die teenwoordigheid van die opnemer hidroulies getoets word tot 'n druk van twee maal die werkdruk:—

- (a) Pipe van yster, staal of solied getrokke koper—elke ses jaar;
- (b) koperpipe met gesweissoldeerde langsate—elke vier jaar.

CHAPTER III—PERIODIC SURVEYS: BOATS OTHER THAN SKI BOATS, SURF BOATS AND DINGHIES.

171. APPLICATION OF CHAPTER III.

This Chapter applies to every boat other than a ski or surf boat or dinghy, and a “Chapter III boat” means a boat to which this Chapter applies.

172. GENERAL.

The hull, boilers, machinery and equipment of a Chapter III boat shall be surveyed at the intervals and in the manner set forth in regulations 173 to 188 inclusive.

173. BOILERS WHICH PERMIT OF A FULL INTERNAL EXAMINATION.

(1) A boiler which permits of a full internal examination shall be surveyed every 12 months and 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 every four years be hydraulically tested to $1\frac{1}{2}$ times working pressure: 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.

174. 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 173: Provided that such boilers shall every 12 months and in the presence of the surveyor, be hydraulically tested to $1\frac{1}{2}$ times working pressure.

175. STEAM PIPES.

(1) Subject to the provisions of sub-regulations (2) and (3), main steam pipes and auxiliary steam pipes with an internal diameter of over three 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) Ten tye van die toetse wat in subregulasie (1) voorgeskryf word, of te enige ander tyd wat dit nodig geag word, moet die opnemer die pype deeglik ondersoek en enige pyp moet te eniger tyd verwyder en hidroulies getoets word as daar rede is om te glo dat sy toestand onbevredigend is.

(3) Indien die opnemer dit nodig ag, moet koperpype uitgegloeï word en dit moet gewoonlik ten tye van die hidrouliese toets gedoen word.

176. STOOMAANDRYWINGS- EN HULPMASJINE

(1) Stoomaandrywings- en hulpmasjiene moet elke vier jaar heeltemal vir ondersoek oopgemaak word. Alle suiers, silinders, skuifkleppe, laers en asse moet vir ondersoek beskikbaar wees en indien die opnemer dit nodig ag, moet pompdeksels, klepkaste, kondensators, verdampers, voorverwarmers, filters, brandstoftanks en ander kleppe, verwyder word.

(2) Elke 12 maande moet alle hoof- en hulpmasjinerie wat vir die veilige werking van die Hoofstuk III-boot noodsaaklik is, aan 'n proefwerking onderwerp word in die teenwoordigheid van die opnemer wat moet besluit of die masjinerie en ketels in 'n bevredigende toestand is.

177. HOOF- EN HULPMASJINERIE VAN 'N BOOT WAT NIE LANGER AS 80 VOET IS NIE.

(1) Die hoof- en hulpmasjinerie van 'n Hoofstuk III-boot wat nie langer as 80 voet is nie en deur binnebrandenjins aangedryf word, moet elke 12 maande in die teenwoordigheid van die opnemer aan 'n proefwerking onderwerp word. Indien daar gevind word dat die masjinerie nie in 'n goeie werkende toestand is nie, mag die opnemer eis dat die masjinerie, of enige deel daarvan, vir inspeksie deur hom oopgemaak moet word en enige verstellings of herstelwerk wat hy nodig vind, moet uitgevoer word.

(2) Lugkompressor- en lughouerontlaskleppe moet elke 12 maande in die teenwoordigheid van die opnemer gestel word om by hul ontwerpwerkdruk te werk.

178. HOOF- EN HULPMASJINERIE VAN 'N BOOT WAT LANGER AS 80 VOET IS.

(1) Die hoof- en hulpmasjinerie van 'n Hoofstuk III-boot wat langer as 80 voet is en deur binnebrandenjins aangedryf word, moet elke vier jaar heeltemal vir inspeksie deur die opnemer oopgemaak word. Reëlins mag getref word om die verskillende dele van die masjinerie van tyd tot tyd in gereelde rotasie oop te maak sodat die opnemer die masjinerie as geheel elke vier jaar kan ondersoek, en die eienaar van die boot moet middels voorsien waardeur sulke inspeksies aangeteken en aan boord gehou kan word.

(2) Die hoof- en hulpmasjinerie moet elke 12 maande in die teenwoordigheid van die opnemer aan 'n proefwerking onderwerp word. Indien daar gevind word dat die masjinerie nie in 'n goeie werkende toestand is nie, mag die opnemer eis dat die masjinerie of enige deel daarvan vir inspeksie deur hom oopgemaak moet word en enige verstellings of herstelwerk wat hy nodig vind, moet uitgevoer word.

(3) Die ontlaskleppe van lugkompressors, lughouers en ander drukhouers moet elke 12 maande in die teenwoordigheid van die opnemer gestel word om by hul ontwerpwerkdruk of so 'n laer druk as wat die opnemer daaraan mag toewys, te werk.

(2) At the time of the tests prescribed in sub-regulation (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 its 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.

176. STEAM PROPULSION ENGINES AND AUXILIARIES.

(1) Steam propulsion engines and auxiliaries shall every four years be completely opened up for survey. 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) Every twelve months, a running trial shall be held on all main and auxiliary machinery essential to the safe operation of the Chapter III boat, and shall be witnessed by the surveyor, who shall decide whether the machinery and boilers are in a satisfactory condition.

177. MAIN AND AUXILIARY MACHINERY OF A BOAT NOT EXCEEDING 80 FEET IN LENGTH.

(1) A running trial of the main and auxiliary machinery of a Chapter III boat not exceeding 80 feet in length and propelled by internal combustion engines, shall be held every twelve months and shall be witnessed by the surveyor. If the machinery is found to be not in good operating condition, the surveyor may require that the machinery or any part thereof, be opened up for his inspection, and any adjustments or repairs which are found by him to be necessary, shall be effected.

(2) Air compressor and air receiver relief valves shall every twelve months and in the presence of the surveyor, be adjusted to operate at their designed working pressure.

178. MAIN AND AUXILIARY MACHINERY OF A BOAT EXCEEDING 80 FEET IN LENGTH.

(1) The main and auxiliary machinery of a Chapter III boat exceeding 80 feet in length and propelled by internal combustion engines, shall be completely opened up for inspection by the surveyor every four years. Arrangements may be made to open up the various parts of the machinery in regular rotation from time to time, so that the surveyor may inspect the whole of the machinery every four years, and the owner of the boat shall furnish the means whereby such inspections can be recorded and kept on board.

(2) A running trial of the main and auxiliary machinery shall be held every twelve months and shall be witnessed by the surveyor. If the machinery is found to be not in good operating condition, the surveyor may require that the machinery or any part of it, be opened up for his inspection, and any adjustments or repairs which are found by him to be necessary, shall be effected.

(3) Air compressor, air receiver, and other pressure vessel relief valves shall, every twelve months and in the presence of the surveyor, be adjusted to operate at their designed working pressure or to such lower pressure as the surveyor may assign.

179. LUGHOUEURS.

(1) Lughouers wat nie deeglik inwendig ondersoek kan word nie, moet elke vier jaar hidroulies getoets word tot 'n druk van anderhalfmaal die werkdruk.

(2) Lughouers wat deeglik inwendig ondersoek kan word, moet na die eerste vier jaar se diens vir ondersoek oopgemaak word en daarna elke twee jaar.

(3) Alle monterings, kleppe en veiligheidstoestelle moet minstens een maal elke vier jaar vir inspeksie oop en skoongemaak word.

180. ELEKTRIESE UITRUSTING.

Die elektriese uitrusting van 'n Hoofstuk III-boot moet elke vier jaar deur die opnemer ondersoek word. 'n Insolasie toets moet in die teenwoordigheid van die opnemer op alle stroombane uitgevoer word en die weerstand tussen alle geïsoleerde stroombane en die aarde moet minstens 100,000 ohm wees. Die generatorstroombrekers, oorstrombeveiligingstoestelle en sekerings moet deur die opnemer ondersoek word om te bevestig dat hulle bevredigend sal werk.

181. STAALROMPE: DROOGDOK.

(1) Elke Hoofstuk III-boot van staal moet elke 12 maande in 'n droogdok of op 'n sleepelling geplaas word vir inspeksie deur die opnemer.

(2) Die romp van elke Hoofstuk III-boot van staal moet soos volg geïnspekteer word:—

- (a) Die opnemer moet die romp uitwendig en inwendig ondersoek nadat dit skoongemaak maar nie geverf is nie, en enige deel van die plafon wat hy mag vereis dat dit verwyder moet word sodat hy die toestand van die beplating, spante, vloere, ens. kan vasstel, moet verwyder word;
- (b) boortoetse moet op die beplating uitgevoer word waar en wanneer die opnemer dit nodig ag;
- (c) alle sluitinrigtings vir dekopenings en alle luikhoofde, ventilators, lugpype en dekhuse moet deeglik deur die opnemer ondersoek word; en
- (d) wanneer die opnemer dit nodig ag, moet dubbel-boomtenks getoets word met 'n waterdrukhoogte van ag voet bokant die binnebaan, of tot by die ligte waterlyn, watter ook al die grootste is, en piektenks en ander dieptenks wat vir waterballas gebruik word, moet getoets word met 'n waterdrukhoogte van ag voet bokant die koepel van die tenk.

Alle herstelwerk en hernuwings wat die opnemer vereis, moet tot sy tevredeheid uitgevoer word.

182. HOUTROMPE: DROOGDOK.

(1) Elke Hoofstuk III-boot van hout met 'n lengte van 30 voet of meer moet elke 12 maande in 'n droogdok of op 'n sleepelling geplaas of behoorlik op blokke gesteun word vir inspeksie deur die opnemer. 'n Boot wat korter as 30 voet is, kan na goeddunke van die opnemer op die strand uitgesleep word vir die ondersoek.

(2) Die romp van elke Hoofstuk III-boot van hout, moet soos volg geïnspekteer word:—

- (a) Die opnemer moet die romp uitwendig en inwendig ondersoek nadat dit skoongemaak maar nie geverf is nie, en enige deel van die plafon wat hy mag vereis dat dit verwyder moet word sodat hy die toestand van die romp, spante, beskotte, balke, vloere, ens. kan vasstel, moet verwyder word;

179. AIR RECEIVERS.

(1) Air receivers which do not permit of a thorough internal examination, shall every four years be hydraulically tested to a pressure of one and a half times the working pressure.

(2) Air receivers which can be thoroughly examined internally, shall be opened up for survey after the first four years' service and thereafter every two years.

(3) All mountings, valves and safety devices shall be opened up and cleaned for inspection at least once in every four years.

180. ELECTRICAL EQUIPMENT.

The electrical equipment of a Chapter III boat shall be examined by the surveyor every four years. An insulation test shall be made in the presence of the surveyor of all circuits, and the resistance between all insulated circuits and earth shall be not less than 100,000 ohms. The generator circuit breakers, over-current protective devices and fuses shall be examined by the surveyor to verify that they will operate satisfactorily.

181. STEEL HULLS: DRY DOCKING.

(1) Every steel Chapter III boat shall every twelve months be placed in dry dock or on a slipway for inspection by the surveyor.

(2) The hull of every steel Chapter III boat shall be inspected as follows:—

- (a) the surveyor shall examine the hull externally and internally after it has been cleaned down but not painted, and any part of the ceiling which he may require to be removed in order that he may ascertain the condition of plating, frames, floors, etc., shall be removed;
- (b) drill testing of plating shall be carried out where and as considered necessary by the surveyor;
- (c) all closing appliances for deck openings, and all coamings, ventilators, air pipes and deckhouses, shall be thoroughly examined by the surveyor; and
- (d) where considered necessary by the surveyor, double bottom tanks shall be tested by a head of water to a height of eight feet above the inner bottom or to the light water line, whichever is the greater, and peak tanks or other deep tanks used for water ballast shall be tested by a head of water to a height of eight feet above the crown of the tank.

All repairs and renewals required by the surveyor shall be carried out to his satisfaction.

182. WOODEN HULLS: DRY DOCKING.

(1) Every wooden Chapter III boat of 30 feet or over in length shall every twelve months be placed in dry dock or on a slipway, or suitably supported on blocks for examination by the surveyor. A boat of under 30 feet in length may be beached for examination at the discretion of the surveyor.

(2) The hull of every wooden Chapter III boat shall be inspected as follows:—

- (a) the surveyor shall examine the hull externally and internally after it has been cleaned down but not painted, and any part of the ceiling which he may require to be removed in order that he may ascertain the condition of the hull, frames, bulkheads, beams, floors, etc., shall be removed;

- (b) boortoetse moet op die romp en dekbeplanking uitgevoer word waar en wanneer die opnemer dit nodig ag; en
- (c) alle sluitinrigtings vir dekopenings en alle luikhoofde, ventilators, lugpype en dekhuse moet deeglik deur die opnemer geïnspekteer word.

Alle herstelwerk en hernuwings wat die opnemer vereis, moet tot sy tevreidenheid uitgevoer word.

183. GEWAPENDE PLASTIEKROMPE: DROOGDOK.

(1) Elke Hoofstuk III-boot van gewapende plastiek met 'n lengte van 30 voet of meer moet elke 12 maande in 'n droogdok of op 'n sleepelling geplaas of behoorlik op blokke gesteun word vir inspeksie deur die opnemer. 'n Boot wat korter as 30 voet is, kan na goeddunke van die opnemer op die strand uitgesleep word vir die ondersoek.

(2) Die romp van elke Hoofstuk III-boot van gewapende plastiek moet soos volg geïnspekteer word:—

- (a) Die opnemer moet die romp uitwendig en inwendig ondersoek nadat dit skoongemaak maar nie geverf is nie, en enige deel van die plafon wat hy mag vereis dat dit verwyder moet word sodat hy die toestand van die romp, spante, beskotte, balke, vloere, ens. kan vasstel, moet verwyder word;
- (b) die opnemer moet alle dele van die romp ondersoek vir tekens van afskuring, delamellering of sterkraking en besondere aandag aan die ondersoek van die romphegstukke bestee; en
- (c) alle sluitinrigtings vir dekopenings en alle luikhoofde, ventilators, lugpype en dekhuse moet deeglik deur die opnemer geïnspekteer word.

Alle herstelwerk en hernuwings wat die ondersoeker vereis, moet tot sy tevreidenheid uitgevoer word.

184. SKROEFASSE.

Skroefasse van 'n Hoofstuk III-boot moet een maal elke twee jaar vir inspeksie deur die opnemer uitgetrek en die skroewe verwyder word, maar die volgende tipes asse hoef slegs een maal elke drie jaar in die geval van 'n enkelskroefboot en een maal elke vier jaar in die geval van 'n boot met twee of meer skroewe, uitgetrek te word:—

- (a) Asse toegerus met deurlopende voerings waar die skroefaskoker is, en waar die buitelaers is, indien daar aangebring is;
- (b) asse toegerus met goedgekeurde drukstukke by die agterent wat hul doeltreffende smering moontlik maak; en
- (c) asse van brons, monelmetaal en ander goedgekeurde korrosievaste materiaal.

185. SEEVERBINDINGS.

(1) Alle seesuig- en -uitlaatkleppe en -krane in 'n Hoofstuk III-boot moet elke twee jaar vir inspeksie deur die opnemer oopgemaak word terwyl die romp uitwendig ondersoek word.

(2) Die opnemer moet elke twaalf maande tydens 'n uitwendige rompondersoek, alle seeverbindingshegstukke ondersoek en indien hy dit nodig ag, mag hy eis dat enige klep of kraan vir inspeksie oopgemaak word.

186. ROERS.

Die roer van elke Hoofstuk III-boot moet ten tye van word indien die opnemer dit nodig ag en enige herstelwerk of hernuwings wat hy nodig ag, moet uitgevoer die jaarlikse uitwendige ondersoek van die romp, gelig word.

- (b) bore testing of hull and deck planking shall be carried out where and as considered necessary by the surveyor; and
- (c) all closing appliances for deck openings, and all coamings, ventilators, air pipes and deckhouses shall be thoroughly examined by the surveyor.

All repairs and renewals required by the surveyor shall be carried out to his satisfaction.

183. REINFORCED PLASTIC HULLS: DRY DOCKING.

(1) Every reinforced plastic Chapter III boat of 30 feet or over in length shall every twelve months be placed in dry dock or on a slipway, or suitably supported on blocks for examination by the surveyor. A boat of under 30 feet in length may be beached for examination at the discretion of the surveyor.

(2) The hull of every reinforced plastic Chapter III boat shall be inspected as follows:

- (a) the surveyor shall examine the hull externally and internally after it has been cleaned down but not painted, and any part of the ceiling which he may require to be removed in order that he may ascertain the condition of the hull, frames, bulkheads, beams, floors, etc., shall be removed;
- (b) the surveyor shall examine all parts of the hull for signs of abrasion, delamination or star cracking and particular care shall be taken in examining hull fastenings; and
- (c) all closing appliances for deck openings and all coamings, ventilators, air pipes and deckhouses shall be thoroughly examined by the surveyor.

All repairs and renewals required by the surveyor shall be carried out to his satisfaction.

184. PROPELLER SHAFTS.

Propeller shafts of a Chapter III boat shall be withdrawn and propellers removed once every two years for inspection by the surveyor, except that shafts of the following types need be withdrawn only once every three years in the case of a single screw boat and once every four years in the case of a boat having two or more screws:—

- (a) shafts fitted with continuous liners in way of the stern tubes and in way of the outside bearings if fitted;
- (b) shafts fitted with approved glands at the after end to permit of them being efficiently lubricated; and
- (c) shafts of bronze, monel metal or other approved non-corrosive material.

185. SEA CONNECTIONS.

(1) All sea suction and discharge valves and cocks in a Chapter III boat shall every two years be opened up for inspection by the surveyor while the hull is being surveyed externally.

(2) Every twelve months, during an external hull survey, the surveyor shall examine all sea connection fastenings and, if considered necessary, he may require any valve or cock to be opened up for inspection.

186. RUDDERS.

The rudder of every Chapter III boat shall be lifted at the time of the annual survey of the hull externally, if the surveyor considers it necessary, and any repairs or renewals which he considers necessary shall be effected.

187. ANKERS, ANKERKETTINGS EN STUURKETTINGS.

(1) Die ankers en ankerkettings, wenas en stuurkettings (as daar is) van 'n Hoofstuk III-boot moet elke twaalf maande onderwerp word aan 'n algemene ondersoek deur die opnemer wat die oopmaking van enige deel wat hy nodig ag, mag eis.

(2) Ankerkettings moet ag jaar nadat die Hoofstuk III-boot gebou is, vir inspeksie deur die opnemer oopgestel word en daarna met tussenpose van vier jaar.

(3) Wanneer ankerkettings of stuurkettings in so 'n mate geslyt is dat die gemiddelde deursnee van enige deel verminder is tot die minimum grootte wat volgens Aanhangsel 9 hernuwing vereis, moet so 'n deel hernu word.

188. STUURINRIGTING EN NOODINRIGTINGS.

Die stuurinrigting en noodinrigtings van 'n Hoofstuk III-boot moet elke twaalf maande deeglik deur die opnemer geïnspekteer word en enige dele moet oopgemaak word indien hy dit nodig ag. Die hoof- en noodstuurinrigting moet by elke sodanige ondersoek getoets word.

189. VERANDERINGS AAN ROMP.

Enige veranderinge wat die seewaardigheid of tonne- maat van 'n Hoofstuk III-boot raak, moet vooraf deur die opnemer goedgekeur word en moet tot sy tevredenheid uitgevoer word.

HOOFSTUK IV—SKI-, BRANDING- EN JOLBOTE.

190. TOEPASSING VAN HOOFSTUK IV.

Tensy daar in hierdie Hoofstuk anders aangedui word, is hierdie Hoofstuk van toepassing op elke ski-, branding- of jolboot en 'n „Hoofstuk IV-boot” beteken 'n boot waarop hierdie Hoofstuk van toepassing is.

191. VOORLEGGING VAN PLANNE.

Die bevoegde beampte mag die bouer of eienaar van 'n ski- of brandingboot versoek om sodanige planne en spesifikasies as wat hy mag bepaal, aan hom voor te lê en indien so 'n versoek tot hom gerig word, moet genoemde bouer of eienaar daaraan voldoen.

192. KONSTRUKSIE.

(1) (a) Die lengte en breedte van elke ski- of brandingboot moet by sy middellengte onderskeidelik minstens 18 voet en 7 voet wees.

(b) Die lengte en breedte van elke jolboot moet by sy middellengte onderskeidelik minstens 12 voet en 5 voet wees en die diepte moet minstens 1.8 voet wees.

(2) Elke Hoofstuk IV-boot moet voorsien word van inwendige dryfafdelings met 'n toereikende kubieke inhoudsmaat om die boot drywend te hou wanneer dit oorstroom word en belas is met sy volle uitrusting en bemanning. Elke afdeling moet gevul wees met drywende materiaal wat nie deur olie of olieprodukte nadelig aange- tas word nie en wat minstens 97½ persent waterdig is.

(3) Elke ski- of brandingboot moet voorsien wees van verskansings wat agter op die boot minstens 12 duim hoog is en voor minstens 18 duim.

(4) Die vryboord van elke Hoofstuk IV-boot wanneer dit ten volle belas is, moet, by die middellengte gemeet, minstens 6 duim wees.

(5) Elke Hoofstuk IV-boot moet 'n gemiddelde seeg hê wat minstens gelyk is aan 5.5 persent van sy lengte.

187. ANCHORS, CABLES AND STEERING CHAINS.

(1) Every twelve months, the anchors and cables, windlass and steering chains (if any) of a Chapter III boat, shall be given a general examination by the surveyor, who may request any opening up which he deems necessary.

(2) Anchor cables shall be ranged for inspection by the surveyor eight years after construction of the Chapter III boat and thereafter at intervals of four years.

(3) Where anchor cables or steering chains are worn to such an extent that the mean diameter of any part is reduced to the minimum size shown in Annex 9 as requiring renewal, such part shall be renewed.

188. STEERING GEAR AND EMERGENCY ARRANGEMENTS.

The steering gear and emergency arrangements of a Chapter III boat shall be thoroughly examined by the surveyor every twelve months, 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.

189. ALTERATIONS TO HULL.

Any alterations affecting the seaworthiness or tonnage of a Chapter III boat, shall have the prior approval of the surveyor, and shall be carried out to his satisfaction.

CHAPTER IV—SKI BOATS, SURF BOATS AND DINGHIES.

190. APPLICATION OF CHAPTER IV.

Unless otherwise indicated in this Chapter, this Chapter applies to every ski boat, surf boat or dinghy, and a "Chapter IV boat" means a boat to which this Chapter applies.

191. SUBMISSION OF PLANS.

The proper officer may request the builder or owner of a ski or surf boat to submit to him such plans and specifications as he may specify and, upon such request being made, the said builder or owner shall comply therewith.

192. CONSTRUCTION.

(1) (a) The length and breadth of every ski or surf boat shall not be less than 18 feet and 7 feet at mid-length respectively.

(b) The length and breadth of every dinghy shall not be less than 12 feet and 5 feet at mid-length respectively and the depth shall be not less than 1.8 feet.

(2) Every Chapter IV boat shall be provided with internal buoyancy compartments of sufficient cubic capacity to keep the boat afloat when it is flooded and loaded with its full equipment and crew. Each compartment shall be filled with buoyant material which shall not be adversely affected by oil or oil products and shall be at least 97½ per cent waterproof.

(3) Every ski or surf boat shall be provided with bulwarks of a height of at least 12 inches aft and 18 inches forward.

(4) The freeboard of every Chapter IV boat when fully loaded shall not be less than 6 inches measured at mid-length.

(5) Every Chapter IV boat shall have a mean sheer at least equal to 5.5 per cent of its length.

(6) Toereikende waterafvoerpoorte moet in die wulf en die agterste gedeelte van die verskansings van elke ski- of brandingboot gesny word.

(7) Die luikhoof van elke ski- of brandingboot moet minstens 8 duim hoog wees en moet voorsien wees van 'n deksel wat sterk genoeg is en vinnig en doeltreffend vasgemaak kan word.

(8) Die ontwerp van elke Hoofstuk IV-boot moet sodanig wees dat dit voorsiening maak vir voldoende oorhang voor en rigtingstabieleit onder lae krag en met see van agter.

(9) Elke Hoofstuk IV-boot moet so gebou wees dat dit positiewe stabiliteit kan handhaaf wanneer dit vir die see oop en ten volle belas is.

(10) Die materiaal wat by die bou van elke Hoofstuk IV-boot gebruik word en die afmetings daarvan moet tot tevredenheid van die opnemer wees.

(11) Elke ski- of brandingboot moet deur minstens twee motore van 'n goeie gehalte en ontwerp aangedryf word. Die krag moet voldoende wees vir die doel waarvoor die boot ontwerp is. Die motore moet so ingerig wees dat hulle gelyktydig gebruik kan word en moet tot tevredenheid van die opnemer geïnstalleer word.

(12) Elke ski- of brandingboot moet toegerus wees met brandstofopgaartenks met 'n toereikende inhoudsmaat. Draagbare brandstofstentks, indien daar is, moet tot tevredenheid van die opnemer behoorlik vasgemaak word. Die inrigtings moet sodanig wees dat die motore maklik brandstof van enige bepaalde tenk kan ontvang.

(13) Elke ski- of brandingboot moet toegerus wees met 'n handlenspomp wat voldoen aan die vereistes van Deel VII van Aanhangsel 12 van die Regulasies betreffende Reddinguitrusting, 1968. Die pomp moet bevestig wees aan 'n vaste suigleiding uit die visruim.

(14) Elke Hoofstuk IV-boot moet heeltemal bedek word met 'n laag met 'n hoogs sigbare kleur of kombinasie van kleure. Die naam en nommer van die boot moet in 'n kontrasterende kleur gemerk word sodat dit duidelik onderskei kan word.

193. ONDERSOEK: ALGEMEEN.

Elke Hoofstuk IV-boot moet elke twaalf maande deur die opnemer geïnspekteer word. Indien die opnemer vind dat enige deel van die boot, sy motor of uitrusting nie in 'n goeie toestand is nie, moet enige herstelwerk of hernuwings wat hy nodig ag, uitgevoer word.

194. VERANDERING.

Enige veranderinge wat die seewaardigheid van 'n Hoofstuk IV-boot raak, moet vooraf deur die opnemer goedgekeur word en moet tot sy tevredenheid uitgevoer word.

HOOFSTUK V: ADDISIONELE ONDERSOEKE, EKWIVALENTE EN VRYSTELLINGS.

195. ADDISIONELE ONDERSOEKE.

Nieteenstaande die vereistes van die voorafgaande Hoofstukke van hierdie Deel kan die Sekretaris, bevoegde beampte of opnemer te eniger tyd gelas dat enige boot sodanige addisionele ondersoeke moet ondergaan as wat om enige rede nodig geag word. Verder mag die opnemer ten tye van 'n jaarlikse ondersoek, of ten tye van enige addisionele ondersoeke wat ingevolge hierdie regulasie vereis word, na sy goeddunke vereis dat enige deel oopgemaak moet word en hy mag vereis dat enige dele of toebehore hernu word, of enige addisionele deel of

(6) Adequate freeing ports shall be cut in the transom and the after end of the bulwarks of every ski or surf boat.

(7) The hatch coaming of every ski or surf boat shall not be less than 8 inches in height and shall be fitted with a cover of adequate strength which can be secured rapidly and efficiently.

(8) The design of every Chapter IV boat shall be such as to provide for adequate flare forward and directional stability under low power and a following sea.

(9) Every Chapter IV boat shall be so constructed that it shall be capable of maintaining positive stability when open to the sea and fully loaded.

(10) The material used in the construction and the scantlings of every Chapter IV boat shall be to the satisfaction of the surveyor.

(11) Every ski or surf boat shall be propelled by at least two motors of good quality and design. The power shall be sufficient for the purpose for which the boat is designed. The motors shall be so arranged that they can be operated simultaneously and shall be installed to the satisfaction of the surveyor.

(12) Every ski or surf boat shall be provided with fuel storage tanks of adequate capacity. Portable fuel tanks, if any, shall be properly secured to the satisfaction of the surveyor. The arrangements shall be such that the motors can readily receive fuel from any one tank.

(13) Every ski or surf boat shall be provided with a manual bilge pump complying with the requirements of Part VII of Annex 12 of the Life-Saving Equipment Regulations, 1968. The pump shall be attached to a fixed suction leading from the fish hold.

(14) Every Chapter IV boat shall be completely covered with a coating of a highly visible colour or combination of colours. The name and number of the boat shall be marked in a contrasting colour so as to be clearly discernable.

193. SURVEYS: GENERAL.

Every Chapter IV boat shall be inspected by the surveyor every twelve months. If any part of the boat, its motor or equipment are found by the surveyor to be not in good condition, any repairs or renewals which he considers necessary, shall be effected.

194. ALTERATIONS.

Any alterations affecting the seaworthiness of a Chapter IV boat, shall have the prior approval of the surveyor, and shall be carried out to his satisfaction.

CHAPTER V—ADDITIONAL SURVEYS, EQUIVALENTS AND EXEMPTIONS.

195. ADDITIONAL SURVEYS.

Notwithstanding the requirements of the preceding Chapters of this Part, 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 an 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

dele wat vir die veiligheid of seewaardigheid van die boot nodig geag word, aangebring word. Die opnemer mag te eniger tyd aan boord van enige boot gaan en moet deur die eienaar of gesagvoerder toegelaat word om enige ondersoek wat hy nodig ag, uit te voer.

196. EKWIVALENTE.

Wanneer hierdie Deel vereis dat die romp of masjinerie van 'n boot op 'n bepaalde manier gebou moet word, of dat bepaalde uitrusting verskaf moet word, of dat bepaalde voorsiening gemaak moet word, mag die Sekretaris toelaat dat die romp of masjinerie van die boot op enige ander manier gebou word, of enige ander uitrusting verskaf of ander voorsiening gemaak word, indien hy tevrede is dat sodanige ander konstruksie, uitrusting of voorsiening minstens net so doeltreffend is as dié wat ingevolge hierdie Deel vereis word.

197. VRYSTELLING VAN BOTE WAT VOOR 'N SEKERE DATUM GEBOU IS.

Die Sekretaris mag op sodanige voorwaardes as wat hy goedvind, 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 omgebou is nie, vrystel van enige van die vereistes van hierdie Deel indien hy tevrede is dat voldoening daaraan onder die omstandighede onredelik of onprakties is.

198. ALGEMENE VRYSTELLING.

Die Sekretaris mag op sodanige voorwaardes as wat hy goedvind, enige boot vrystel van enige van die vereistes van hierdie Deel indien hy van mening is dat sodanige vereistes onder die omstandighede onredelik of onprakties is.

(Regulasie 6.)

AANHANGSEL I.

KONSTRUKSIE VAN PASSASIEERSKEPE: PLANNE EN BESONDERHEDE.

Die planne en besonderhede betreffende die romp, masjinerie en uitrusting wat ooreenkomstig regulasie 6 voorgelê moet word, is soos volg:—

Planne.

(1) 'n Midskeeps deursnee en ander struktuurplanne wat die hoofrompafmetings, spante, dekstutte en lêers asook die kompensasie waar daar openinge in die huidbeplating en sterktebekke is, aandui.

(2) Details en verbindings van die hoofrompgietstukke (of van gefabriceerde strukture wat in plaas van sodanige gietstukke aangebring is) en die roer en stabiliseervinne (indien daar aangebring is).

(3) Langsaansig en planne wat die indompelingsgrenslyn (gekorregeer soos nodig) aangee; alle waterdigte dwars- en langsbeskotte, dekke, binnehuide, as- en ander tonnels, kokers en ventilators; nisse en verspringings in die waterdigte beskotte; dubbele bome; die hoofopenings in die waterdigte beskotte; dekke en openinge daarin wat met draagbare plate gesluit word; die toewysing van ruimtes onderkant die beskotte; die posisie van ekwivalente vlak beskotte; die lengtes van die hoofdwarsafdelings en die weerdigte inrigtings by die voorent.

Tonnels, nisse en verspringings moet op die plan en die vertikale aansig aangedui word en tipiese deursnee van die dubbele boom moet aangegee word.

(4) Planne wat die afmetings en konstruksiedetails van oliebrandstoftanks, besinktenks en ander tenks wat deel van die skip se struktuur uitmaak, aangee. Die drukhoogtes waarop die afmetings gebaseer is, moet op die planne aangedui word. Die lugoorloop, dieptepeiling, vul- en pompinrigtings moet aangegee word.

(5) (a) Planne wat die inrigting, tipes en details van alle patrys-poorte onderkant die indompelingsgrenslyn en die patrys-poorte en vensters bokant die indompelingsgrenslyn aangee.

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.

196. EQUIVALENTS.

Where this Part requires that the hull or machinery of a boat shall be constructed in a particular manner, or that particular equipment shall be provided or that particular provision shall be made, the Secretary may allow the hull or machinery of the boat to be constructed in any other manner, or any other equipment to be provided or other provision made, if he is satisfied that such other construction, equipment or provision is at least as effective as that required by this Part.

197. EXEMPTION OF BOATS CONSTRUCTED BEFORE A CERTAIN DATE.

The Secretary may on such conditions as he thinks fit, 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 any of the requirements of this Part, if he is satisfied that compliance therewith is unreasonable or impracticable in the circumstances.

198. GENERAL EXEMPTION.

The Secretary may on such conditions as he thinks fit, exempt any boat from any of the requirements of this Part, if he considers such requirements to be unreasonable or impracticable in the circumstances.

(Regulation 6.)

ANNEX 1.

CONSTRUCTION OF PASSENGER SHIPS: PLANS AND PARTICULARS.

The plans and particulars respecting hull, machinery and equipment to be submitted in accordance with regulation 6 are as follows:—

Plans.

(1) A midship section and other structural plans showing the principal hull scantlings, framing, pillars and girders, and compensation in way of openings in the shell plating and strength decks.

(2) Details and connections of the principal hull castings (or of fabricated structures fitted in lieu of such castings) and the rudder and stabilizing fins (if fitted).

(3) Longitudinal elevation and plans showing the margin line (corrected as necessary); all watertight transverse and longitudinal bulkheads, decks, inner skins, shaft and other tunnels, trunks and ventilators; recesses and steps in the watertight bulkheads; double bottoms; the principal openings in the watertight bulkheads and decks and openings therein closed by portable plates; the appropriation of spaces below the bulkhead deck; the positions of equivalent plane bulkheads; the lengths of the main transverse compartments and the weathertight arrangements at the forward end.

Tunnels, recesses and steps are to be shown in plan and elevation and typical sections of the double bottom should be shown.

(4) Plans showing the scantlings and details of construction of oil fuel storage tanks, settling tanks and other tanks, forming part of the structure of the ship. The pressure heads upon which the scantlings are based should be indicated on the plans. The air overflow, sounding, filling and pumping arrangements should be shown.

(5) (a) Plans showing the arrangements, types and details of all side scuttles below the margin line and of side scuttles and windows above the margin line.

(b) Planne wat die inrigting en details van alle sydeure onderkant en bokant die indompelingsgrenslyn aangee.

(c) Planne wat die inrigting en besonderhede van die skip se syuitlate insluitend rioolstelsels, asstortgeute, vullisstortgeute, ens., aangee.

(d) Planne wat die nooduitgange uit alle akkommodasie-, diens- en werkruimtes aangee.

(e) Profiel- en dekplanne wat die middels vir die sluiting van openingen in die oop dek en middels vir die verwydering van water van sulke dekke aangee.

(6) Algemene inrigtingsplanne van brandbeveiliging insluitend details van Klas "A"- en "B"-verdelings en trapomhulsels; die sluitmiddels van openingen in sodanige verdelings en omhulsels; die inrigting van waterdigte deure, sprinkelblusstelsels en outomatiese brandverklik- en -alarmstelsels.

(7) (a) Planne wat die volgende aangee—

die posisie van die beskotdek; die posisie van die boonste indelingslaslyn; die posisie van alle waterdigte deure, die toewysing van ruimtes wat deur die waterdigte deure bedien word, die openingen in die waterdigte beskotte vir kokers vir verkoeling, ventilasie en geforseerde trekstelsels; die asleidings vir die handinrigting of die pype vir die hidrouliese handinrigting van die waterdigte skuifdeure; die volledige inrigting vir kragaangedrewe waterdigte deure insluitend kragbronne, aanwysers en waarskuwingseine.

(b) Detailplanne wat die volgende aangee—

die ontwerp van die deure; die meganisme vir die hand- en kragbediening van die deure (indien daar aangebring is).

(8) Planne wat die volgende aangee—

(a) die inrigting en groottes van die hoof- en newelenssuigleidings, die regstreekse lenssuigleidings en die inrigting van die ballaspyleidings;

(b) die inrigting en tipe van alle kleppe in die lenspompstelsel en die plekke vanwaar hierdie kleppe bedien kan word;

(c) die inrigtings vir die dreinerings van alle ruimtes onderkant die beskotdek;

(d) die middels wat voorsien is om te verhinder dat water uit 'n beskadigde afdeling deur 'n lenssuigstelsel in 'n ander afdeling inloop; en

(e) die dieptepeilinrigtings.

(9) Stuurinrigtings.

(10) Masjinerie-inrigtings insluitend planne van ketels, oorverhitters, bespaarders, lughouers, kruk-, drukskouer-, tussen- en dryfasse, ratwerk insluitend reduksie-, druk- en truratwerk, skroewe.

(11) Pomplanne insluitend lug- en peilinrigtings.

(12) Elektriese diagramme.

(13) Verkoelingsinrigtings.

(14) Enige ander planne wat die Sekretaris verlang.

Besonderhede.

(1) Indelingskoëffisiënte en besonderhede wat die berekening van die deurdringbaarheid ooreenkomstig Aanhangsel 2 moontlik maak.

(2) Berekening van die stabiliteit en slagsyhoek in die beskadigde toestand vir voldoening aan Aanhangsel 3.

(3) Verslag oor hellingsperiment en hoeveelheid en skikking van permanente ballas, indien enige (na voltooiing).

(4) Besonderhede van die lengte van elke waterdigte afdeling.

(5) Die getal, tipe, posisie en vermoë van die pompe wat vir lenspompdiens beskikbaar is en die kragbron vir die bediening van die pompe.

(6) Besonderhede van die ankers en ankerkettings.

(7) Enige ander besonderhede wat die Sekretaris verlang.

(Regulasie 8.)

AANHANGSEL 2.

BEREKENING VAN MAKSIMUM LENGTE VAN WATERDIGTE AFDELINGS.

DEEL I.

1. ALGEMEEN.

In hierdie Aanhangsel, tensy daar anders bepaal word—

- moet alle lineêre mate in voet wees;
- moet alle volumes in kubieke voet wees en bereken word aan die hand van mate tot buitekant die spante gemeet;
- dui die simbool „L” die lengte van die skip aan;
- omvat die uitdrukking „passasiersruimtes” skeepskombuise, wasserye en ander soortgelyke ruimtes wat vir die bediening van passasiers voorsien is, benewens die ruimte wat vir gebruik deur die passasiers voorsien is.

(b) Plans showing the arrangement and details of all side doors below and above the margin line.

(c) Plans showing the arrangement and particulars of ship's side discharges including sewage systems, ash chutes, rubbish chutes, etc.

(d) Plans showing the means of escape from all accommodation, service and working spaces.

(e) Profile and deck plans showing the means for closing openings in the weather deck, and the means for clearing such decks of water.

(6) General arrangement plans of fire protection including details of "A" and "B" Class divisions and stairway enclosures; the means of closure of openings in such divisions and enclosures; the arrangement of watertight doors, sprinkler systems and automatic fire detection and alarm systems.

(7) (a) Plans showing the following—

the position of the bulkhead deck; the position of the deepest subdivision load line; the positions of all watertight doors, the allocation of spaces served by the watertight doors, the openings in watertight bulkheads for trunkways for refrigeration, ventilation and forced draught systems; the leads of the shafting for the hand gear or the pipes for the hand hydraulic gear of sliding watertight doors; the complete arrangement for power operated watertight doors including sources of power, indicators and warning signals.

(b) Detailed plans showing—

the design of the doors; the mechanism for operating the doors by hand and by power (if fitted).

(8) Plans showing—

(a) the arrangement and sizes of the main and branch bilge suction pipe lines, the direct bilge suction and the arrangement of the ballast pipe lines;

(b) the arrangement and type of all valves in the bilge pumping system and the positions from which these valves can be operated;

(c) the arrangements for draining all spaces below the bulkhead deck;

(d) the means provided for preventing water from a damaged compartment finding its way into another compartment through a bilge suction system; and

(e) the sounding arrangements.

(9) Steering gear arrangements.

(10) Machinery arrangements including plans of boilers, superheaters, economizers, air receivers, crank, thrust, intermediate and propeller shafting, gearing including reduction thrust and reverse gearing, propellers.

(11) Pumping plans including air and sounding arrangements.

(12) Electrical diagrams.

(13) Refrigeration arrangements.

(14) Any other plans required by the Secretary.

Particulars.

(1) Subdivision co-efficients and particulars to enable calculations of permeability to be made in terms of Annex 2.

(2) Calculations of the stability and angle of heel in the damaged condition for compliance with Annex 3.

(3) Report of inclining experiment and amount and disposition of permanent ballast, if any (on completion).

(4) Particulars of the length of each watertight compartment.

(5) The number, type, position and capacity of the pumps available for bilge pumping service and the source of power for operating them.

(6) Particulars of anchors and cables.

(7) Any other particulars required by the Secretary.

(Regulation 8.)

ANNEX 2.

CALCULATION OF MAXIMUM LENGTH OF WATER-TIGHT COMPARTMENTS.

PART I.

1. GENERAL.

In this Annex, except where otherwise specified—

- all linear measurements shall be in feet;
- all volumes shall be in cubic feet and shall be calculated from measurements taken to moulded lines;
- the symbol "L" denotes the length of the ship;
- 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.

2. TOELAATBARE LENGTE.

Behoudens die bepaling van paragraaf 6, mag die lengte van 'n afdeling nie sy toelaatbare lengte oorskry nie.

DEEL II.

SKIP VAN KLAS I, II OF IIA, BEHALWE 'N SKIP WAAR-OP DEEL III VAN HIERDIE AANHANGSEL VAN TOEPASSING IS.

3. VERONDERSTELLINGS VAN DEURDRINGBAARHEID.

Die veronderstellings van deurdringbaarheid wat by die bepaling van die vulbare lengte op enige plek in 'n skip waarop hierdie Deel van toepassing is, in aanmerking geneem moet word, moet soos volg wees;

(a) Masjinerieruimte—

- (i) Die veronderstelde deurdringbaarheid oor die hele masjinerieruimte moet volgens onderstaande formule bepaal word—

$$85 + 10 \frac{(a - c)}{v} \text{ waar}$$

a = die volume van die passasiersruimtes en bemanningsruimtes onderkant die indompelingsgrenslyn binne die grense van die masjinerieruimte;

c = die volume van die tussendeckruimtes onderkant die indompelingsgrenslyn binne die grense van die masjinerieruimte wat toegewys is vir vrag, steenkool of voorrade; en

v = die volume van die masjinerieruimte onderkant die indompelingsgrenslyn.

- (ii) In enige geval waarin die gemiddelde deurdringbaarheid oor die hele masjinerieruimte soos deur uitvoerige berekening bepaal, kleiner is as dié wat deur die voormelde formule aangegee word, kan die berekende waarde gebruik word. Vir die doel van so 'n berekening moet die deurdringbaarheid van passasiers- en bemanningsruimtes gestel word op 95, dié van alle ruimtes wat vir vrag, steenkool of voorrade toegewys is op 60, en dié van dubbelboom-, oliebrandstof- en ander tenks wat deel van die struktuur van die skip uitmaak, op 95 of so 'n kleiner waarde as wat die Owerheid in die geval van daardie skip mag goedkeur.

(b) Gedeeltes voor en agter die masjinerieruimte—

- (i) die veronderstelde gemiddelde deurdringbaarheid oor die hele gedeelte van die skip voor en agter die masjinerieruimte moet bereken word—

(1) volgens onderstaande formule—

$$63 + 35 \frac{a}{v} \text{ waar}$$

a = die volume van die passasiers- en bemanningsruimtes geleë onderkant die indompelingsgrenslyn voor en agter die masjinerieruimte, al na die geval, en

v = die volume van die gedeelte van die skip onderkant die indompelingsgrenslyn voor of agter die masjinerieruimte, al na die geval; of

- (2) indien die Owerheid in die geval van enige skip te eniger tyd nie later nie as 40 dae nadat die opnemer 'n plan van die skip ontvang het wat die waterdige indeling daarvan aangee, so bepaal, deur uitvoerige berekening vir welke doel die deurdringbaarheid van die ruimtes op die volgende waardes gestel moet word:

Passasiersruimtes	95
bemanningsruimtes	95
ruimtes toegewys vir masjinerie	85
ruimtes toegewys vir vrag, steenkool, voorrade of bagasiekamers	60
tenks wat deel van die skip se struktuur uitmaak en dubbele bome	95, of so 'n kleiner waarde as wat die Owerheid in die geval van enige skip mag toelaat.

- (ii) Vir die doeleindes van hierdie paragraaf, moet 'n ruimte binnekant 'n passasiers- of bemanningsruimte beskou word as deel daarvan tensy dit vir ander doeleindes toegewys is en deur permanente staalbeskotte ingesluit is.

2. PERMISSIBLE LENGTH.

Subject to the provisions of paragraph 6, the length of a compartment shall not exceed its permissible length.

PART II.

SHIP OF CLASS I, II, OR IIA, OTHER THAN A SHIP TO WHICH PART III OF THIS ANNEX APPLIES.

3. ASSUMPTIONS OF PERMEABILITY.

The assumptions of permeability which shall be taken into account in determining the floodable length at any point in a ship to which this Part applies, shall be as follows—

(a) Machinery space—

- (i) The assumed permeability throughout the machinery space shall be determined by the following formula—

$$85 + 10 \frac{(a - c)}{v} \text{ where}$$

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 for cargo, coal or stores; and

v = volume of the machinery space below the margin line.

- (ii) 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 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 Authority 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—

(1) by the following formula—

$$63 + 35 \frac{a}{v} \text{ where}$$

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

- (2) if the Authority 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 as follows—

passenger spaces	95
crew spaces	95
spaces appropriated for machinery	85
spaces appropriated for 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 Authority 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. INDELINGSFAKTOR.

(1) Behoudens die bepaling van subparagraaf (4) moet die indelingsfaktor F in die geval van 'n skip van 430 voet of langer, bereken word volgens onderstaande formule—

$$F = A - \frac{(A - B)(C_s - 23)}{100}$$

waar A en B onderskeidelik bereken word ooreenkomstig die bepaling van subparagraaf (5) en C_s die kriteriumsyfer is wat ooreenkomstig die bepaling van paragraaf 5 bereken is. Met die voorbeeld dat—

(a) wanneer die kriteriumsyfer gelyk is aan 45 of meer en die berekende indelingsfaktor soos deur die voorafgaande formule aangegee, tegelykertyd 0.65 of kleiner maar groter as 0.50 is, die indeling agter die voorpiek deur die faktor 0.50 bepaal moet word;

(b) wanneer die faktor F in die geval van enige skip kleiner as 0.4 is en die Owerheid tevrede is dat dit ondoenlik is om die faktor F by die bepaling van die toelaatbare lengte van die afdeling wat vir die masjinerie toegewys is, toe te pas, hy mag toelaat dat 'n groter faktor van nie meer as 0.4 nie, op daardie afdeling toegepas word.

(2) Behoudens die bepaling van subparagraaf (4) moet die indelingsfaktor F in die geval van 'n skip wat korter as 430 voet is, maar nie korter as 260 voet nie, en 'n kriteriumsyfer het van minstens

$$\frac{4691 - 10L}{17}$$

(hierna in hierdie paragraaf S genoem), bereken word volgens onderstaande formule—

$$F = 1 - \frac{(1 - B)(C_s - S)}{123 - S}$$

waar B die faktor is wat ooreenkomstig die bepaling van subparagraaf (5) bereken is, en C_s die kriteriumsyfer wat ooreenkomstig die bepaling van paragraaf 5 bereken is.

(3) In die geval van 'n skip korter as 430 voet maar nie korter as 260 voet nie, en met 'n kriteriumsyfer kleiner as S, of in die geval van 'n skip korter as 260 voet, moet die indelingsfaktor een wees.

(4) In die geval van 'n skip van enige lengte wat bedoel is om meer as 12 passasiers te vervoer, maar nie meer as

$$\frac{L^2}{7000} \text{ of } 50$$

watter getal ook al die kleinste is, moet die indelingsfaktor bereken word soos in subparagraaf (3) bepaal.

(5) Vir die doeleindes van hierdie paragraaf, moet die faktor A en B bereken word volgens onderstaande formule—

$$A = \frac{190}{L - 198} + 0.18 \text{ (waar } L = 430 \text{ en groter)}$$

$$B = \frac{100}{L - 138} + 0.18 \text{ (waar } L = 260 \text{ en groter)}$$

5. DIENSKRITERIUM.

Die kriteriumsyfer vir 'n skip waarop hierdie Deel van toepassing is, moet volgens onderstaande formule bereken word—

$$(a) \text{ wanneer } P_1 \text{ groter as } P \text{ is}$$

$$C_s = 72 \frac{M + 2P_1}{V + P_1 - P}$$

$$(b) \text{ en in alle ander gevalle}$$

$$C_s = 72 \frac{M + 2P}{V}$$

waar

C_s = die kriteriumsyfer;
 M = die volume van die masjinerieruimte soos omskryf in regulasie 2, plus die volume van enige permanente oliebrandstofbunkers wat bokant die binneboom en voor of agter die masjinerieruimte geleë mag wees;

P = die volume van die passasiers- en bemanningsruimtes onderkant die indompelingsgrenslyn;

V = die volume van die skip onderkant die indompelingsgrenslyn;

N = die getal passasiers wat die skip bedoel is om te vervoer; en

$$P_1 = 0.6LN$$

4. FACTOR OF SUBDIVISION.

(1) Subject to the provisions of sub-paragraph (4), in the case of a ship of 430 feet in length or over, 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 subparagraph (5) and C_s is the criterion numeral determined in accordance with the provisions of paragraph 5. Provided that—

(a) where the criterion numeral is equal to 45 or more and simultaneously the computed factor of subdivision as given by the preceding formula is 0.65 or less, but more than 0.50, the subdivision abaft the forepeak shall be governed by the factor 0.50;

(b) where in the case of any ship the factor F is less than 0.4 and the Authority is satisfied that it is impracticable to apply the factor F in determining the permissible length of the 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 a ship 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 subparagraph (5) and C_s is the criterion numeral determined in accordance with the provisions of paragraph 5.

(3) In the case of a ship 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 a ship 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—

$$A = \frac{190}{L - 198} + 0.18 \text{ (where } L = 430 \text{ and upwards)}$$

$$B = \frac{100}{L - 138} + 0.18 \text{ (where } L = 260 \text{ and upwards)}$$

5. CRITERION OF SERVICE.

The criterion numeral for a ship to which this Part applies, shall be determined by the following formulae—

$$(a) \text{ when } P_1 \text{ is greater than } P$$

$$C_s = 72 \frac{M + 2P_1}{V + P_1 - P}$$

$$(b) \text{ and in all other cases}$$

$$C_s = 72 \frac{M + 2P}{V}$$

where

C_s = the criterion numeral;

M = the volume of the machinery space, as defined in regulation 2, 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

$$P_1 = 0.6LN$$

met die voorbehoud dat—

- (a) wanneer die waarde van $0.6LN$ groter is as die som van P en die hele volume van die passasiersruimte bokant die indompelingsgrenslyn, die syfer wat as P_1 geneem moet word daardie som of $0.4LN$ is, watter een ook al die grootste is;
- (b) waardes van C_s wat kleiner as 23 is, op 23 gestel moet word; en
- (c) waardes van C_s wat groter as 123 is, op 123 gestel moet word.

6. SPESIALE REËLS VIR INDELING.

- (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 is nie as die vulbare lengte of twee maal die toelaatbare lengte, watter een ook al die kleinste is.
 - (b) Indien een afdeling van so 'n paar aangrensende afdelings binne die masjinerieruimte geleë is, en die ander afdeling daarvan buite die masjinerieruimte geleë is, moet die gesamentlike lengte van die twee afdelings aangepas word ooreenkomstig die gemiddelde deurdringbaarheid van die twee dele van die skip waarin die afdelings geleë is.
 - (c) Wanneer die lengte van twee aangrensende afdelings deur verskillende indelingsfaktore bepaal word, moet die gesamentlike lengte van die twee afdelings na eweredigheid bepaal word.
 - (d) Wanneer beskotte wat ooreenkomstig Deel I van hierdie regulasies waterdig moet wees, in enige deel van 'n skip tot 'n hoër dek as in die res van die skip opgetrek word, mag afsonderlike indompelingsgrenslyne vir die berekening van die vulbare lengte van daardie deel van die skip gebruik word, indien—
 - (i) die twee afdelings wat grens aan die verspringsing in die beskotdek albei hoogstens die toelaatbare lengte het wat met hul onderskeie indompelingsgrenslyne ooreenstem, en hul gesamentlike lengte daarbenewens nie twee maal die toelaatbare lengte bereken met verwysing na die laer geleë indompelingsgrenslyn van sodanige afdelings, te bowe gaan nie;
 - (ii) die skeepsboorde oor die hele lengte van die skip strek tot by die dek wat met die boonste indompelingsgrenslyn ooreenkom, en al die openings in die huidbeplating onderkant hierdie dek oor die hele lengte van die skip voldoen aan die vereistes van regulasie 19 asof hulle openings onder die indompelingsgrenslyn is.
- (2) Addisionele indeling by die voorent:—

Vir 'n skip van 330 voet of langer moet die waterdigte beskot net agter die aanvaringsbeskot aangebring word op 'n afstand van die voorloodyn wat nie groter is nie as die toelaatbare lengte wat op 'n afdeling wat deur die voorloodyn en so 'n beskot begrens word, van toepassing is.
- (3) Verspringsings in beskotte:—

Indien 'n beskot wat ingevolge Deel I van hierdie regulasies waterdig moet wees, trapsgewyse verspring, moet dit aan een van die volgende voorwaardes voldoen—

 - (a) in 'n skip met 'n indelingsfaktor van hoogstens 0.9 mag die gesamentlike lengte van die twee afdelings wat deur so 'n beskot geskei word, nie 90 persent van die vulbare lengte of twee maal die toelaatbare lengte watter een ook al die kleinste is, oorskry nie. In 'n skip met 'n indelingsfaktor van meer as 0.9, mag die gesamentlike lengte van die twee afdelings nie die toelaatbare lengte oorskry nie;
 - (b) addisionele indeling moet verskaf word waar die verspringsing is ten einde dieselfde mate van veiligheid as wat deur 'n vlak beskot verkry word, te handhaaf; of
 - (c) die afdeling waaroor die verspringsing strek, mag nie die toelaatbare lengte wat met 'n indompelingsgrenslyn 3 duim onderkant die verspringsing ooreenkom, oorskry nie.
- (4) Nisse in beskotte:—

Indien enige deel van 'n nis geleë is buitekant die vertikale vlakke aan weerskante van die skip op 'n afstand vanaf die huidbeplating wat gelyk is aan een-vyfde van die breedte van die skip reghoekig met die hartlyn op die hoogte van die boonste indelingslaswaterlyn gemeet, moet so 'n nis vir die doeleindes van subparagraaf (3) heel as 'n verspringsing in 'n beskot beskou word.
- (5) Ekwivalente vlak beskotte:—

Wanneer 'n beskot wat ingevolge Deel I van hierdie regulasies waterdig moet wees, 'n nis in het of trapsgewyse verspring, moet 'n ekwivalente vlak beskot by die bepaling van die indeling veronderstel word.

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) 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 19 as if they were openings below the margin line.
- (2) Additional subdivision at forward end:—

For a ship 330 feet in length or over, 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:—

 - (a) in a ship 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 a ship having a factor of subdivision greater than 0.9, the combined length of the two compartments shall not exceed the permissible length;
 - (b) additional subdivision is provided in way of the step to maintain the same measure of safety as that secured by a plane bulkhead; or
 - (c) 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 subparagraph (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 spasiering van beskotte:—

Indien die afstand tussen twee aangrensende beskotte wat ingevolge Deel I van hierdie regulasies waterdig moet wees, of hul ekwivalente vlak beskotte, of die afstand tussen dwarsvlakke wat loop deur die naaste trapsgewyse verspringende dele van die beskotte, kleiner is as $0.03L + 10$ voet, of 35 voet, of 0.1 L, watter een ook al die kleinste is, moet net een van daardie beskotte beskou word as deel van die indeling van die skip.

(7) Toelating vir plaaslike indeling:—

Wanneer 'n hoofdwarskeepse waterdige afdeling in enige skip plaaslik onderverdeel is en die Owerheid tevrede is dat by enige veronderstelde kantbeskadiging oor 'n lengte van $0.03L + 10$ voet, of 35 voet, of 0.1 L, watter een 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, toegelaat 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. 'n Toelating ooreenkomstig hierdie subparagraaf sal slegs gemaak word indien die Owerheid tevrede is dat so 'n toelating nie moontlike voldoening aan paragraaf 2 van Aanhangsel 3 sal verhinder nie.

(8) Wanneer die vereiste indelingsfaktor in enige skip 0.50 of kleiner is, mag die gesamentlike lengte van enige twee aangrensende afdelings nie die vulbare lengte of twee maal die toelaatbare lengte, watter een ook al die kleinste is, oorskry nie.

DEEL III.

SKIP VAN KLAS II OF IIA WAT DEUR DIE OWERHEID TOEGELAAT WORD OM MEER PERSONE TE VERVOER AS DIE BESKIKBARE REDDINGSBOOTRUIMTE AAN BOORD.

7. ALGEMENE REËLS VIR INDELING.

Behoudens die wysigings in hierdie Deel uiteengesit, moet die maksimum lengte van afdelings in 'n skip waarop hierdie Deel van toepassing is, bereken word asof dit 'n skip is waarop Deel II van toepassing is.

8. VERONDERSTELLING VAN DEURDRINGBAARHEID VOOR EN AGTER DIE MASJINIERE- RUIMTE.

In 'n skip waarop hierdie Deel van toepassing is, moet die veronderstelde gemiddelde deurdringbaarheid oor die hele gedeelte van die skip voor en agter die masjinerieruimte bereken word—

(a) Volgens onderstaande formule—

$$95 - 35 \frac{b}{v} \text{ waar}$$

b = die volume van die ruimtes geleë onderkant die indompelingsgrenslyn voor of agter die masjinerieruimte, al na die geval, en bo die boonste vlak van vloere, binneboom- of piektenks wat toegewys is vir gebruik as steenkool- of oliebrandstofbunkers, voorraadkamers, bagasie- en poskamers, kettingkaste of varswater-tenks en van ruimtes wat toegewys is vir vrag indien die Owerheid tevrede is dat die grootste deel van die volume van die ruimte bedoel is om deur vrag in beslag geneem te word; en

v = die volume van die deel van die skip onderkant die indompelingsgrenslyn voor of agter die masjinerieruimte, al na die geval; of

(b) indien die Owerheid in die geval van enige skip te eniger tyd nie later nie as 40 dae nadat die opnemer 'n plan van die skip ontvang het wat die waterdige indeling daarvan aangee, so bepaal, deur uitvoerige berekening vir welke doel die deurdringbaarheid van die ruimtes op die volgende waardes gestel moet word:—

passasiersruimtes	95
bemanningsruimtes	95
ruimtes toegewys vir masjinerie	85
ruimtes toegewys vir bunkersteenkool, voorraad of bagasiekamers	60
ruimtes toegewys vir vrag, tenks wat deel van die skip se struktuur uitmaak, en dubbele bome	95, of so 'n kleiner waarde as wat die Owerheid in die geval van enige skip mag toelaat.

(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, or 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 Authority 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 buoyancy assumed on the undamaged side shall not be greater than that assumed on the damaged side. Allowance under this sub-paragraph will be made only if the Authority is satisfied that such allowance is not likely to prevent compliance with paragraph 2 of Annex 3.

(8) Where in any ship the required factor of subdivision is 0.50 or less, the combined length of any two adjacent compartments shall not exceed the floodable length or twice the permissible length, whichever is the less.

PART III

SHIP OF CLASS II OR IIA WHICH IS PERMITTED BY THE AUTHORITY 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 a ship to which this Part applies, shall be determined as if it were a ship to which Part II applies.

8. ASSUMPTION OF PERMEABILITY IN PORTIONS BEFORE AND ABAFT THE MACHINERY SPACE.

In a ship 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—

$$95 - 35 \frac{b}{v} \text{ where}$$

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 appropriated for cargo if the Authority 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 Authority 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 for machinery	85
spaces appropriated for bunker coal, stores or baggage rooms	60
spaces appropriated for cargo, tanks forming part of the structure of the ship and double bottoms	95, or such lesser figure as the Authority may permit in the case of any ship.

9. INDELINGSFAKTOR.

(1) Behoudens die bepaling van hierdie paragraaf moet die indelingsfaktor van 'n skip waarop hierdie Deel van toepassing is, 'n faktor wees wat bereken is soos in paragraaf 4 bepaal, of 0.5, watter een ook al die kleinste is. Met die voorbehoud dat indien die Owerheid in die geval van enige skip wat korter as 300 voet is, tevrede is dat dit ondoenlik is om daardie faktor op enige afdeling toe te pas, hy mag toelaat dat 'n hoër faktor op daardie afdeling toegepas word.

(2) Indien die Owerheid in die geval van enige skip waarop hierdie Deel van toepassing is, tevrede is dat die hoeveelheid vrug wat in die skip vervoer moet word, sodanig is dat dit die toepassing van 'n indelingsfaktor van hoogstens 0.5 agter die aanvaringsbeskot prakties onuitvoerbaar maak, moet die indelingsfaktor van die skip soos volg bereken word:

(a) in die geval van 'n skip van 430 voet of langer, volgens die formule:—

$$F = A - \frac{(A - BB)(C_s - 23)}{100}$$

(b) in die geval van 'n skip wat korter as 430 voet is, maar nie korter as 180 voet nie, en 'n kriteriumsyfer van minstens S_1 het, volgens die formule:—

$$F = 1 - \frac{(1 - BB)(C_s - S_1)}{123 - S_1}$$

vir die doeleindes van bostande formules:—

$$A = \frac{190}{L - 198} + 0.18 \text{ (waar } L = 430 \text{ en groter)}$$

$$BB = \frac{57.6}{L - 108} + 0.20 \text{ (waar } L = 180 \text{ en groter)}$$

$$S_1 = \frac{1950 - 4L}{10}$$

C_s = die kriteriumsyfer bereken ooreenkomstig paragraaf 5 waar P_1 die volgende waardes het:—

- (i) 0.6LN of 125N, watter een ook al die grootste is, vir passasiers vir wie daar slaapbanke is;
- (ii) 125N vir passasiers sonder slaapbanke.

(c) in die geval van 'n skip korter as 430 voet maar nie korter as 180 voet nie, en met 'n kriteriumsyfer van minder as S_1 , en van 'n skip korter as 180 voet, moet die indelingsfaktor een wees.

DEEL IV.

SKIP VAN KLAS V OF VI.

10. ALGEMENE REËLS VIR INDELING.

Behoudens die wysigings in hierdie Deel uiteengesit, moet die maksimum lengte van afdelings in 'n skip waarop hierdie Deel van toepassing is, bereken word asof dit 'n skip is waarop Deel II van toepassing is.

11. VERONDERSTELLING VAN DEURDRINGBAARHEID.

In 'n skip waarop hierdie Deel van toepassing is, moet die veronderstelde gemiddelde deurdringbaarheid soos volg wees:

- (a) van die masjinerieruimte ... 85
- (b) van ander ruimtes behalwe die masjinerieruimte ... 95

12. INDELINGSFAKTOR.

Die indelingsfaktor van 'n skip waarop hierdie Deel van toepassing is, moet soos volg wees:

Lengte van skip in voet.	Indelingsfaktor.
Meer as 350	0.5
Meer as 300 maar nie meer as 350 nie	0.5 vir afdelings in die masjinerieruimte en daarvoor. Een vir alle ander afdelings.
Meer as 250 maar nie meer as 300 nie	0.5 vir afdelings voor die masjinerieruimte. Een vir alle ander afdelings.
Meer as 200 maar nie meer as 250 nie	Een vir die gekombineerde voorpiek en aangrensende afdeling, en vir elke ander afdeling.
200 of minder	Een.

(Regulasie 11.)

AANHANGSEL 3.

STABILITEIT IN BESKADIGDE TOESTAND.

1. BEREKENING VAN STABILITEIT IN BESKADIGDE TOESTAND.

Of die stabiliteit in die beskadigde toestand van elke skip waarop Hoofstuk II van Deel I van hierdie regulasies van toepassing

9. FACTOR OF SUBDIVISION.

(1) Subject to the provision of this paragraph, the factor of subdivision of a ship 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 Authority 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 Authority is satisfied that the quantity of cargo to be carried in the ship will be such as to render impracticable the application abast 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 a ship of 430 feet in length or over, by the formula—

$$F = A - \frac{(A - BB)(C_s - 23)}{100}$$

(b) in the case of a ship 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:—

$$A = \frac{190}{L - 198} + 0.18 \text{ (where } L = 430 \text{ and upwards)}$$

$$BB = \frac{57.6}{L - 108} + 0.20 \text{ (where } L = 180 \text{ and upwards)}$$

$$S_1 = \frac{1950 - 4L}{10}$$

C_s = the criterion numeral determined in accordance with paragraph 5 where P_1 has the following values:—

- (i) 0.6LN or 125N whichever is the greater for berthed passengers;
- (ii) 125N for unberthed passengers.

(c) in the case of a ship 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 a ship the length of which is less than 180 feet, the factor of subdivision shall be unity.

PART IV.

SHIP OF CLASS V OR VI.

10. GENERAL RULES FOR SUBDIVISION.

Subject to the modifications set forth in this Part, the maximum length of compartments in a ship to which this Part applies, shall be determined as if it were a ship to which Part II applies.

11. ASSUMPTIONS OF PERMEABILITY.

In a ship to which this Part applies, the assumed average permeability shall be as follows—

- (a) of the machinery space ... 85
- (b) of spaces other than the machinery space ... 95

12. FACTOR OF SUBDIVISION.

The factor of subdivision of a ship 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 or under	Unity.

(Regulation 11.)

ANNEX 3.

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

is, voldoende is, moet bepaal word deur berekening wat die ontwerp en konstruksie van die skip en die beskadigde afdelings inagneem en in ooreenstemming met die volgende veronderstellings is—

- (a) die skip moet veronderstel word om met betrekking tot stabiliteit in die slegste toestand te verkeer wat moontlik met inagneming van die diens waarvoor die skip bedoel is, ondervind kan word;
- (b) die volume- en oppervlakte-deurdringbaarheid moet veronderstel word om soos volg te wees:—

(i) *Ruimtes.* *Deurdringbaarheid.*

In beslag geneem deur vrag, steenkool of voorrade	60
Toegewys vir vrag, steenkool of voorrade maar nie deur aansienlike hoeveelhede daarvan in beslag geneem nie	95
Toegewys as akkommodasie vir passasiers en bemanning	95
Toegewys vir masjinerie	85
Toegewys vir vloestowwe	0, of 95, watter een ook al die strengste vereistes tot gevolg het.

- (ii) Groter oppervlakte-deurdringbaarhede moet veronderstel word ten opsigte van ruimtes wat, in die nabyheid van die skadewatervlak, geen aansienlike hoeveelheid akkommodasie of masjinerie bevat nie, en ruimtes wat nie gewoonlik deur 'n aansienlike hoeveelheid vrag of voorraad in beslag geneem word nie.
- (c) Die mate van skade moet veronderstel word soos volg te wees—
- (i) in die lengte—10 voet plus 3 persent van die lengte van die skip, of 35 voet, of 10 persent van die lengte van die skip, watter syfer ook al die kleinste is; Met die voorbehoud dat waar die vereiste indelingsfaktor 0.33 of kleiner is, die veronderstelde mate van skade in die lengte na gelang nodig vermeerder moet word ten einde enige twee agtereenvolgende waterdige hoofdwarsbeskotte in te sluit;
- (ii) in die dwars—20 persent van die breedte van die skip (binneboords gemeet vanaf die skeepsboord reghoekig met die hartlyn op die hoogte van die boonste indelingslaswaterlyn);
- (iii) vertikaal—vanaf die basislyn boontoe sonder beperking;
- (iv) indien geringer skade as dié aangegee in die voorafgaande subparagrafe (i), (ii) en (iii), 'n ernstiger toestand wat betref slagsy of verlies van metasentriese hoogte tot gevolg sou hê, moet sodanige skade vir die doeleindes van die berekening veronderstel word.
- (d) Wanneer die skip toegerus is met dekke, binnehuide of langsskeepse beskotte met voldoende digtheid om die vloei van water te beperk, moet sulke beperkings by die berekening in aanmerking geneem word.

2. Die stabiliteitsomvang in die beskadigde toestand moet tot tevredenheid van die Owerheid ondersoek word.

3. VOLDOENDE STABILITEIT IN BESKADIGDE TOESTAND.

Die stabiliteit van die skip in die onbeskadigde toestand moet geag word voldoende te wees indien die voormelde berekening toon dat die finale toestand van die skip na die veronderstelde beskadiging en, in die geval van onsimmetriese oorstroming, nadat maatreëls getref is om die ewewig te herstel, soos volg is:—

- (a) In die geval van simmetriese oorstroming moet daar 'n positiewe oorblywende metasentriese hoogte van minstens 2 duim wees soos bereken volgens die konstante verplasingmetode;
- (b) in die geval van onsimmetriese oorstroming mag die slagsy nie sewe grade oorskry nie;
- (c) in die geval van onsimmetriese oorstroming mag die indompelingsgrenslyn nie onder die water wees nie.

(Regulasie 9 en 13.)

AANHANGSEL 4.

KONSTRUKSIE VAN WATERDIGTE BESKOTTE, ENS.

DEEL I.

SKIP VAN KLAS I.

1. STERKTE EN KONSTRUKSIE.

(1) Elke beskot en ander gedeelte van die binnestruktuur wat deel van die waterdige indeling van die skip uitmaak, moet so sterk en so gebou wees dat dit, met 'n toereikende weerstandsgrens, bestand sal wees teen die druk veroorsaak deur die maksi-

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—

(i) <i>Spaces.</i>	<i>Permeability.</i>
occupied by cargo, coal or stores	60
appropriated for cargo, coal or stores but not occupied by substantial quantities thereof	95
appropriated as accommodation for passengers and crew	95
appropriated for machinery	85
appropriated for liquids	0 or 95, whichever results in the more onerous requirements.

- (ii) Higher surface permeabilities shall be assumed in respect of spaces which, in the vicinity of the damage water plane, contain no substantial quantity of accommodation or machinery and spaces which are not generally occupied by any substantial quantity of cargo or stores.
- (c) The 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: **Provided** that where the required factor of subdivision is 0.33 or less, the assumed longitudinal extent of damage shall be increased as necessary so as to include any two consecutive main transverse watertight bulkheads;
- (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 base line upwards without limit;
- (iv) If any damage of lesser extent than that indicated in the foregoing subparagraphs (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. The range of stability in the damaged condition shall be investigated to the satisfaction of the Authority.

3. 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, in the case of unsymmetrical flooding, after equalization measures have been taken, the final condition of the ship is as follows—

- (a) in the event of symmetrical flooding, there is a positive residual metacentric height of at least 2 inches as calculated by the constant displacement method;
- (b) in the event of unsymmetrical flooding, the heel does not exceed seven degrees;
- (c) in the event of unsymmetrical flooding, the margin line is not submerged.

(Regulations 9 and 13.)

ANNEX 4.

CONSTRUCTION OF WATERTIGHT BULKHEADS, ETC.

PART I.

SHIP 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 the

maximum waterdrukhoogte wat dit sal moet verduur indien die skip beskadig sou word maar minstens teen die druk veroorsaak deur 'n waterdrukhoogte tot by die indompelingsgrenslyn. So 'n maksimum waterdrukhoogte moet enige bykomende drukhoogte insluit wat ooreenkomstig regulasie 11 bereken word as die gevolg van oorstroming of slagsy.

(2) Elke sodanige beskot en gedeelte moet van sagte staal wees en indien dit 'n klinkkonstruksie het, moet dit aan die vereistes van paragrawe 2 tot 6 voldoen, en indien dit 'n gesweiste konstruksie het moet dit minstens net so sterk, stewig en doeltreffend 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 gebou word met beplating wat minstens so dik is soos in Tabel I van Deel IV van hierdie Aanhangsel aangedui. Indien 'n beskot aan die ent van 'n stookruimte in 'n steenkoolstookskip 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. Indien 'n beskot aan die ent van 'n steenkoolbunkerruimte is, moet die onderste plaatgang daarvan minstens 36 duim hoog en 0.1 duim dikker wees as wat ingevolge genoemde Tabel vereis word. In alle ander beskotte moet die onderste plaatgang minstens 0.04 duim dikker wees as wat ingevolge genoemde Tabel vereis word en enige vulplate 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 wees van verstywers met steune of oorentverbindings. Indien die verstywers 30 duim van mekaar af is, moet hulle voldoen aan sodanige van die spesifikasies in Tabel 2 en 3 van genoemde Deel as wat onder die omstandighede op hulle van toepassing is. Met die voorbehoud dat ander vorms van verstywings gebruik mag word indien hulle nie minder sterkte en stewigheid verleen nie as die verstywers wat in genoemde Tabelle aangedui word. Indien enige verstywers anders as 30 duim van mekaar af op so 'n beskot gespasieer is, moet hul sterkte en stewigheid in regstreekse verhouding met hul afstand van mekaar vermeerder of verminder word na gelang van die geval. Verstywers mag hoogstens 24 duim van mekaar af op 'n aanvaringsbeskot aangebring word, en hoogstens 36 duim van mekaar af op enige ander beskot.

(b) Die onderent van elke verstywer moet aan die huidbeplating, aan die binnebaanbeplating of aan horisontale beplating wat dit behoorlik sal steun, bevestig word.

(c) By elke dekvak wat die bokant van 'n stel verstywers uitmaak, moet beplating so aangebring word dat dit horisontale stewigheid in die beskot sal verseker.

(d) In die geval van verstywers wat met steune bevestig is, moet die onderste steun of sy verbindingshoek oor die vloer wat aan die beskot grens, strek en die boonste steun moet verbind word aan 'n hoek wat oor die balkruimte strek, of ander ewe doeltreffende middels moet gebruik word om strukturele stewigheid te verseker.

(e) Waar verstywers by waterdigte deure in die onderste gedeelte van 'n beskot verkort word, moet die opening van 'n behoorlike raamwerk en steune voorsien word en 'n tapse webplaat of skouersteun, by sy kant verstyf, moet aan elke kant van die deur vanaf die voet van die beskot tot bokant die deuropening aangebring word.

(f) Alle steune, ore en ander entverbindings vir verstywers moet aan die vereistes van Tabel 4 van Deel IV voldoen.

(4) (a) Die klinknaels in die nate en verbindings van die beplating en grensstawe van alle beskotte wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet op 'n hartafstand van hoogstens $4\frac{1}{2}$ diameters van mekaar af wees, behalwe in die geval van die flens van 'n grenshoek wat die flens is wat aan die binneboombeplating, huidbeplating of dekbeplating verbind is, in welke geval hulle op 'n hartafstand van 5 diameters van mekaar af moet wees.

(b) Grenshoeke wat meer as 35 voet onder die beskotdek aangebring is, moet in albei flense dubbel geklink wees behalwe aan dele van 'n beskot binne 'n dubbele boom en die vertikale verbinding van plate wat so aangebring is, moet dubbel geklink word.

(c) Die klinknaels wat verstywers met steunentverbindings aan die beskotbeplating verbind moet op 'n hartafstand van hoogstens 7 diameters van mekaar af wees. Alle ander verstywers moet aan die beskotbeplating verbind word met klinknaels wat vir 15 persent van die lengte van die verstywers by elke ent daarvan op 'n hartafstand van hoogstens 4 diameters van mekaar af is en elders op 'n hartafstand van hoogstens 7 diameters.

(d) Waar spante of balke deur 'n beskot loop wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet die beskot sonder die gebruik van hout of sement waterdig gemaak word.

maximum head of water which it might have to sustain in the event of damage to the ship not being less than the pressure due to a head of water up to the margin line. Such maximum head shall include any additional head estimated under regulation 11 to result from flooding or heeling.

(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 1 of Part IV of this Annex. 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 which shall have brackets 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 collision 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 $4\frac{1}{2}$ 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, versprings 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 ooreenstemmende hoogtes vereis word.

(2) Die balke van sulke dekke, versprings en vlakke moet die grootstes hê wat in Tabel 3 van Deel IV aangegee word vir verstewers wat 30 duim van mekaar af is. Met die voorbehoud dat balke wat verdeel is in gedeeltes wat by elke ent van 'n steun voorsien is, die grootstes mag hê wat vir sulke verstewers in Tabel 2 van Deel IV aangegee word. Indien enige balke anders as 30 duim van mekaar af gespasieer is, moet hul sterkte en stewigheid in regstreekse verhouding met hul afstand van mekaar af, vermeerder of verminder word, al na die geval.

Vir die doeleindes van genoemde Tabelle moet die grootste afstand tussen die steunpunte as die lengte van die balk beskou word. Met die voorbehoud dat as 'n balk van steune voorsien is, die lengte daarvan vir die doeleindes van genoemde Tabel 3 met die breedte van die steune verminder moet word. Die afstand vanaf die beskotte tot by die betrokke dek, versprings of vlak, minus die helfte van die 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 lêers wat, waar nodig, gestut is, voorsien word en die klinkverbindinge van die stutte moet voldoende wees om die las as gevolg van waterdruk te weerstaan.

(4) Waar spante deur 'n dek, versprings of vlak loop wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet so 'n dek, versprings of vlak sonder die gebruik 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 gebou wees dat dit by alle dele minstens net soveel sterkte en stewigheid verleen as wat vir waterdigte beskotte op 'n ooreenstemmende hoogte vereis word.

5. WATERDIGTE TONNELS.

(1) Elke tunnel wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet gebou word van beplating met 'n dikte minstens soos in Tabel 1 van Deel IV van hierdie Aanhangel aangegee word.

(2) Elke sodanige tunnel moet voorsien word van verstewers wat indien hulle 36 duim van mekaar af is, moet voldoen aan sodanige van die spesifikasies in Tabel 5 van Deel IV as wat onder die omstandighede op hulle van toepassing is. Met die voorbehoud dat ander vorms van verstewers gebruik mag word, mits hulle net soveel sterkte en stewigheid verleen as die verstewers wat in genoemde Tabel aangedui word. Indien enige verstewers aan so 'n tunnel anders as 36 duim van mekaar af gespasieer is, moet hul sterkte en stewigheid in regstreekse verhouding met die afstand wat hulle van mekaar af is, vermeerder of verminder word, al na die geval. Die voete van alle verstewers moet, ongeag hul spasiering, met 'n oorslag oor die voethoek van die tunnel aangebring en daaraan bevestig word.

6. WATERDIGTE BINNEHUIDE.

Elke binnehuide wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet so sterk en so gebou wees dat dit 'n waterdrukhoogte tot by die indompelingsgrenslyn sal kan weerstaan.

DEEL II.

SKEPE VAN KLAS II OF IIA.

7. ALGEMEEN.

Behoudens die wysigings in hierdie Deel uiteengesit, is Deel I van toepassing met betrekking tot 'n skip van Klas II of IIA soos dit van toepassing is met betrekking tot 'n skip van Klas I.

8. BESKOTTE, ENS.

(1) Elke geklinkte gedeelte van die skip se binnebou wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet soos volg gebou word:—

- In 'n skip van hoogstens 150 voet, ooreenkomstig Tabel 1A, 2A, 3A, 4 en 5A van Deel IV.
- In 'n skip van 250 voet of langer, ooreenkomstig Tabel 1, 2, 3, 4 en 5 van Deel IV.
- In 'n skip van tussen 150 voet en 250 voet op 'n wyse soos deur interpolasie tussen die twee voorafgaande standarde bepaal. Met die voorbehoud dat in 'n skip van enige lengte waarvan die indeling ooreenkomstig paragraaf 9 (1) van Aanhangel 2 bepaal word, elke geklinkte gedeelte van sodanige binnebou ooreenkomstig Tabel 1A, 2A, 3A, 4 en 5A van Deel IV van hierdie Aanhangel gebou mag word.

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 of this Annex.

(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 CLASS II OR IIA.

7. GENERAL.

Subject to the modifications set forth in this Part, Part I shall apply in relation to a ship of Class II or IIA as it applies in relation to a ship 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:—

- In a ship not exceeding 150 feet in length, in accordance with Tables 1A, 2A, 3A, 4 and 5A of Part IV.
- In a ship 250 feet in length or upwards, in accordance with Tables 1, 2, 3, 4 and 5 of Part IV.
- In a ship between 150 feet and 250 feet in length, in a manner determined by interpolation between the two foregoing standards. Provided that in a ship of any length the subdivision of which is determined in accordance with paragraph 9 (1) of Annex 2, 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 Annex.

(2) Enige beskotte wat ingevolge Deel I van hierdie regulasies waterdig moet wees in 'n skip van hoogstens 150 voet en in 'n skip waarvan die indeling ooreenkomstig paragraaf 9 (1) van Aanhangel 2 bepaal word, mag indien die verstywers aan die spesifikasies in Tabel 3B van Deel IV van hierdie Aanhangel voldoen, voorsien word van verstywers sonder steun- of oorentverbindings.

DEEL III.

SKEPE VAN KLAS V OF VI.

9. ALGEMEEN.

Behoudens die wysigings in hierdie Deel uiteengesit, is Deel I van toepassing met betrekking tot 'n skip van Klas V of VI soos dit van toepassing is met betrekking tot 'n skip van Klas I.

10. BESKOTTE, ENS.

(1) Enige beskotte wat ingevolge Deel I van hierdie regulasies waterdig moet wees, mag voorsien word van verstywers sonder steun- of oorentverbindings.

(2) Elke geklinkte gedeelte van die skip se binnebou wat ingevolge Deel I van hierdie regulasies waterdig moet wees, moet gebou word ooreenkomstig sodanige van die bepalings van Tabel 1A, 2A, 3A, 3B, 4 en 5A van Deel IV van hierdie Aanhangel as wat onder die omstandighede daarop van toepassing is.

DEEL IV.

TABEL 1.

(Paragraaf 2, 5 en 8 van hierdie Aanhangel.)

DIKTES VAN BESKOT- EN TONNELBEPLATING.

Beplating van aanvaringsbeskot: Verstywers 24 duim van mekaar af.			Beplating van beskotte (behalwe die aanvaringsbeskot) en plat- beplating van tunnels: Verstywers 30 duim van mekaar af.		
Geboë beplating van tunnels: Verstywers 36 duim van mekaar af.			Beplating van beskotte (behalwe die aanvaringsbeskot) en plat- beplating van tunnels: Verstywers 36 duim van mekaar af.		
*Hoogte by middellyn vanaf beskotdek tot by onderkant van plaat, in voet.	Dikte in duim.		*Hoogte by middellyn vanaf beskotdek tot by onderkant van plaat, in voet.	Dikte in duim.	
Bo. Nie bo nie.			Bo. Nie bo nie.		
— 8	·26		— 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	

Indien die verstywers anders as hierbo gespesifiseer, gespasieer is, moet die diktes van die beplating sodanig wees dat dit 'n sterkte tot gevolg sal hê wat gelykstaan met dié verkry met die diktes en spasierings hierbo gespesifiseer.

*Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangel te voldoen.

(2) Any bulkheads required by Part I of these regulations to be watertight in a ship not exceeding 150 feet in length and in a ship the subdivision of which is determined in accordance with paragraph 9 (1) of Annex 2, may, if the stiffeners comply with the specifications in Table 3B of Part IV of this Annex, be fitted with stiffeners not having bracket or lug end connections.

PART III.

SHIPS OF CLASS V OR VI.

9. GENERAL.

Subject to the modifications set forth in this Part, Part I shall apply in relation to a ship of Class V or VI as it applies in relation to a ship 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 of this Annex as apply to it in the circumstances.

PART IV.

TABEL 1.

(Paragraphs 2, 5 and 8 of this Annex.)

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.		
— 8	·26		— 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.

*This depth shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 2.
(Paragraaf 2, 3 en 8 van hierdie Aanhangsel.)

GROOTTES VAN BESKOTVERSTYWERS 30 DUIM VAN MEKAAR AF EN OOREENKOMSTIG TABEL 4 BO EN ONDER VOORSIEN VAN STEUNENTVERBINDINGS.

Totale lengte van verstywing, insluitend entver- bindings, in voet.	*Hoogte van beskotdek bokant bopunt van verstywer, in voet.										
	0	2	4	6	8	10	12	14	16	18	20
8	$4 \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .34$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .36$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .37$
9	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .32$	$5 \times 3 \times .36$	$6 \times 3 \times .32$	$6 \times 3 \times .36$	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .37$	$6 \times 3 \times .34$	$6 \times 3 \times .35$	$7 \times 3 \times .33$
10	$5 \times 3 \times .34$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .35$	$6 \times 3\frac{1}{2} \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$
11	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .38$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .34$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .35$
12	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .34$	$6 \times 3 \times .34$	$6 \times 3\frac{1}{2} \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .40$
13	$5\frac{1}{2} \times 3 \times .37$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .42$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$
14	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .42$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$
15	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .40$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .45$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$
16	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .44$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$
17	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .42$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .52$
18	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .44$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .44$	$11 \times 3\frac{1}{2} \times .52$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$
19	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .45$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .42$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .52$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$
20	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .52$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.42$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$
21	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .44$	$11 \times 3\frac{1}{2} \times .54$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.46$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.50$
22	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.39$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.67$	$12 \times 4 \times 4 \times .60$ $.70$
23	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.42$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.50$	$12 \times 4 \times 4 \times .60$ $.67$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.41$
24	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.54$	$12 \times 4 \times 4 \times .60$ $.70$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$	$15 \times 4 \times 4 \times .62$ $.48$

U-ysters

- (1) Die groottes van verstywers word in duim gespesifiseer.
 - (2) Groottes vir tussenlengtes van verstywers en -hoogtes van beskotdek moet deur interpolasie bepaal word.
 - (3) In die geval van U-profiel is die onderste dikte dié van die rib en die boonste dikte dié van die flens.
 - (4) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie Nommer 4A-1934, 6-1924 en 4-1932 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.
- *Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

TABLE 2.
(Paragraphs 2, 3 and 8 of this Annex.)

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	Angles	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 × .3	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	Bulb Angles	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 × .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 × .50 .38	12 × 3½ × 3½ × .50 .38	12 × 3½ × 3½ × .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 × .50 .38	12 × 3½ × 3½ × .50 .42	12 × 3½ × 3½ × .60 .44	12 × 4 × 4 × .60 .40
21		9 × 3½ × .51	10 × 3½ × .40	10 × 3½ × .50	11 × 3½ × .43	11 × 3½ × .44	11 × 3½ × .54	12 × 3½ × 3½ × .50 .38	12 × 3½ × 3½ × .60 .44	12 × 3½ × 3½ × .60 .46	12 × 4 × 4 × .60 .48	12 × 4 × 4 × .60 .50
22		10 × 3½ × .40	10 × 3½ × .50	11 × 3½ × .43	11 × 3½ × .50	12 × 3½ × 3½ × .50 .38	12 × 3½ × 3½ × .50 .39	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
23		10 × 3½ × .50	11 × 3½ × .43	11 × 3½ × .50	12 × 3½ × 3½ × .50 .38	12 × 3½ × 3½ × .50 .42	12 × 3½ × 3½ × .60 .44	12 × 4 × 4 × .60 .40	12 × 4 × 4 × .60 .50	12 × 4 × 4 × .60 .67	15 × 4 × 4 × .62 .41	15 × 4 × 4 × .62 .41
24		11 × 3½ × .43	11 × 3½ × .50	12 × 3½ × 3½ × .50 .38	12 × 3½ × 3½ × .60 .44	12 × 3½ × 3½ × .60 .44	12 × 4 × 4 × .60 .48	12 × 4 × 4 × .60 .54	12 × 4 × 4 × .60 .70	15 × 4 × 4 × .62 .41	15 × 4 × 4 × .62 .46	15 × 4 × 4 × .62 .48

(1) The sizes of stiffeners are specified in inch

Channels

- 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.
- *This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 2—(vervolg).

GROOTTES VAN BESKOTVERSTYWERS 30 DUIM VAN MEKAAR AF EN OOREENKOMSTIG TABEL 4 BO EN ONDER VOORSIEN VAN STEUNENTVERBINDINGS.

Totale lengte van verstywer insluitend entver- bindings, in voet.	*Hoogte van beskotdek bokant bopunt van verstywer, in voet.									
	22	24	26	28	30	32	34	36	38	40
8	$6 \times 3 \times .34$	$6 \times 3 \times .35$	$6 \times 3 \times .39$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .36$	$7 \times 3 \times .40$	$8 \times 3 \times .35$
9	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .37$	$8 \times 3 \times .40$
10	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .40$	$8 \times 3 \frac{1}{2} \times .44$	$8 \times 3 \frac{1}{2} \times .46$	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .38$
11	$8 \times 3 \times .37$	$8 \times 3 \times .37$	$8 \times 3 \times .42$	$8 \times 3 \frac{1}{2} \times .46$	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .44$	$9 \times 3 \frac{1}{2} \times .45$	$9 \times 3 \frac{1}{2} \times .51$
12	$8 \times 3 \frac{1}{2} \times .46$	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .45$	$9 \times 3 \frac{1}{2} \times .51$	$9 \times 3 \frac{1}{2} \times .51$	$10 \times 3 \frac{1}{2} \times .40$	$10 \times 3 \frac{1}{2} \times .40$	$10 \times 3 \frac{1}{2} \times .50$
13	$9 \times 3 \frac{1}{2} \times .38$	$9 \times 3 \frac{1}{2} \times .44$	$9 \times 3 \frac{1}{2} \times .51$	$10 \times 3 \frac{1}{2} \times .40$	$10 \times 3 \frac{1}{2} \times .40$	$10 \times 3 \frac{1}{2} \times .42$	$10 \times 3 \frac{1}{2} \times .50$	$11 \times 3 \frac{1}{2} \times .43$	$11 \times 3 \frac{1}{2} \times .43$	$11 \times 3 \frac{1}{2} \times .43$
14	$9 \times 3 \frac{1}{2} \times .51$	$10 \times 3 \frac{1}{2} \times .40$	$10 \times 3 \frac{1}{2} \times .42$	$10 \times 3 \frac{1}{2} \times .50$	$11 \times 3 \frac{1}{2} \times .43$	$11 \times 3 \frac{1}{2} \times .43$	$11 \times 3 \frac{1}{2} \times .44$	$11 \times 3 \frac{1}{2} \times .50$	$11 \times 3 \frac{1}{2} \times .54$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$
15	$10 \times 3 \frac{1}{2} \times .50$	$11 \times 3 \frac{1}{2} \times .43$	$11 \times 3 \frac{1}{2} \times .43$	$11 \times 3 \frac{1}{2} \times .44$	$11 \times 3 \frac{1}{2} \times .50$	$11 \times 3 \frac{1}{2} \times .54$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$
16	$11 \times 3 \frac{1}{2} \times .43$	$11 \times 3 \frac{1}{2} \times .44$	$11 \times 3 \frac{1}{2} \times .52$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$
17	$11 \times 3 \frac{1}{2} \times .52$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$
18	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .50$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .64$	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$15 \times 4 \times 4 \times .62$
19	$12 \times 3 \frac{1}{2} \times 3 \frac{1}{2} \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$
20	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$		
21	$12 \times 4 \times 4 \times .60$	$12 \times 4 \times 4 \times .60$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$				
22	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$						
23	$15 \times 4 \times 4 \times .62$	$15 \times 4 \times 4 \times .62$								
24										

(1) Die groottes van verstywers word in duim gespesifiseer.

(2) Groottes vir tussenlengtes van verstywers en -hoogtes van beskotdek moet deur interpolasie bepaal word.

(3) In die geval van U-profiel is die onderste dikte dié van die rib en die boonste dikte dié van die flens.

(4) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie Nommer 6-1924 en 4-1932 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.

*Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

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.

*Height of Bulkhead Deck above Top of Stiffener, in feet.

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×.50 .38
15		10×3½×.50	11×3½×.43	11×3½×.43	11×3½×.44	11×3½×.50	11×3½×.54	12×3½×3½×.50 .38	12×3½×3½×.50 .38	12×3½×3½×.50 .39	12×3½×3½×.60 .44
16		11×3½×.43	11×3½×.44	11×3½×.52	12×3½×3½×.50 .38	12×3½×3½×.50 .38	12×3½×3½×.50 .39	12×3½×3½×.60 .44	12×3½×3½×.60 .44	12×4×4×.60 .40	12×4×4×.60 .48
17		11×3½×.52	12×3½×3½×.50 .38	12×3½×3½×.50 .38	12×3½×3½×.60 .44	12×3½×3½×.60 .44	12×3½×3½×.60 .46	12×4×4×.60 .48	12×4×4×.60 .48	12×4×4×.60 .52	12×4×4×.60 .67
18		12×3½×3½×.50 .38	12×3½×3½×.60 .44	12×3½×3½×.60 .44	12×4×4×.60 .40	12×4×4×.60 .48	12×4×4×.60 .50	12×4×4×.60 .67	12×4×4×.60 .67	12×4×4×.60 .70	15×4×4×.62 .41
19		12×3½×3½×.60 .44	12×4×4×.60 .40	12×4×4×.60 .48	12×4×4×.60 .52	12×4×4×.60 .67	12×4×4×.60 .70	15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46	15×4×4×.62 .46
20		12×4×4×.60 .48	12×4×4×.60 .52	12×4×4×.60 .67	12×4×4×.60 .70	15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46	15×4×4×.62 .48		
21		12×4×4×.60 .67	12×4×4×.60 .70	15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46	15×4×4×.62 .50				
22		15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46	15×4×4×.62 .50						
23		15×4×4×.62 .46	15×4×4×.62 .50								
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.

*This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 3.
(Paragraaf 2, 3 en 8 van hierdie Aanhangsel.)

GROOTTES VAN BESKOTVERSTYWERS 30 DUIM VAN MEKAAR AF EN OOREENKOMSTIG TABEL 4 BO EN ONDER VOORSIEN VAN OORENTVERBINDINGS.

Totale lengte van verstywer insluitend entver- bindings, in voet.	*Hoogte van beskotdek bokant bopunt van verstywer, in voet.										
	0	2	4	6	8	10	12	14	16	18	20
8	$4\frac{1}{2} \times 3 \times .34$	$5 \times 3 \times .36$	$6 \times 3 \times .32$	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .38$	$6 \times 3 \times .34$	$6 \times 3 \times .40$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$
9	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .38$	$6 \times 3 \times .34$	$6 \times 3 \times .39$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .36$	$7 \times 3 \times .46$	$8 \times 3 \times .35$
10	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .37$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .40$	$8 \times 3\frac{1}{2} \times .46$
11	$5\frac{1}{2} \times 3 \times .38$	$6 \times 3\frac{1}{2} \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .42$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$
12	$6 \times 3 \times .39$	$7 \times 3 \times .33$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$
13	$7 \times 3 \times .33$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .40$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .44$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .43$
14	$7 \times 3 \times .41$	$8 \times 3 \times .35$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .45$
15	$8 \times 3 \times .35$	$8 \times 3 \times .47$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .45$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .42$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .56$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$
16	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .48$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .44$	$11 \times 3\frac{1}{2} \times .45$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.42$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$
17	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .42$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .48$	$11 \times 3\frac{1}{2} \times .56$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.39$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.48$
18	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .44$	$11 \times 3\frac{1}{2} \times .56$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.67$	$12 \times 4 \times 4 \times .60$ $.70$
19	$10 \times 3\frac{1}{2} \times .42$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .45$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.39$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.52$	$12 \times 4 \times 4 \times .60$ $.67$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.41$
20	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .48$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.46$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.67$	$12 \times 4 \times 4 \times .60$ $.70$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$	$15 \times 4 \times 4 \times .62$ $.53$
21	$11 \times 3\frac{1}{2} \times .48$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.67$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.50$		
22	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.52$	$12 \times 4 \times 4 \times .60$ $.67$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$				
23	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.54$	$12 \times 4 \times 4 \times .60$ $.70$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$					
24	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.56$	$12 \times 4 \times 4 \times .60$ $.74$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.48$						

- (1) Die groottes van verstywers word in duim gespesifiseer.
- (2) Groottes vir tussenlengtes van verstywers en -hoogtes van beskotdek moet deur interpolasie bepaal word.
- (3) Die ente van die boonste tussendekverstywers gemerk * mag slegs aan grensstawe geklink word sonder oorentverbindings.
- (4) In die geval van U-profiel is die onderste dikte dié van die rib en die boonste dikte dié van die flens.
- (5) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie Nommer 4A-1934, 6-1924 en 4-1932 wat op verstywers met die afmetings en van die

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	*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	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	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) The ends of upper between deck stiffeners marked * may be riveted to boundary bars only without lug end connections.
- (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.

*This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 3—(vervolg).

GROOTTES VAN BESKOTVERSTYWERS 30 DUIM VAN MEKAAR AF EN OOREENKOMSTIG TABEL 4 BO EN ONDER VOORSIEN VAN OORENTVERBINDINGS.

Totale lengte van verstywer insluitend entver- bindings, in voet.	*Hoogte van beskotdek bokant bopunt van verstywer, in voet.									
	22	24	26	28	30	32	34	36	38	40
8	$7 \times 3 \times .38$	$7 \times 3 \times .41$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .40$	$8 \times 3 \times .44$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$
9	$8 \times 3 \times .37$	$8 \times 3 \times .40$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .45$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$
10	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .45$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .42$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$
11	$9 \times 3\frac{1}{2} \times .45$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .42$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .52$
12	$10 \times 3\frac{1}{2} \times .42$	$10 \times 3\frac{1}{2} \times .46$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .52$	$11 \times 3\frac{1}{2} \times .55$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.39$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$
13	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .44$	$11 \times 3\frac{1}{2} \times .52$	$11 \times 3\frac{1}{2} \times .55$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.42$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.46$	$12 \times 4 \times 4 \times .60$ $.48$
14	$11 \times 3\frac{1}{2} \times .55$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.42$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.50$	$12 \times 4 \times 4 \times .60$ $.67$	$12 \times 4 \times 4 \times .60$ $.67$
15	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.52$	$12 \times 4 \times 4 \times .60$ $.67$	$12 \times 4 \times 4 \times .60$ $.67$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$
16	$12 \times 4 \times 4 \times .60$ $.40$	$12 \times 4 \times 4 \times .60$ $.48$	$12 \times 4 \times 4 \times .60$ $.67$	$12 \times 4 \times 4 \times .60$ $.67$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$	$15 \times 4 \times 4 \times .62$ $.46$	$15 \times 4 \times 4 \times .62$ $.50$	
17	$12 \times 4 \times 4 \times .60$ $.67$	$12 \times 4 \times 4 \times .60$ $.70$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$	$15 \times 4 \times 4 \times .62$ $.50$				
18	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.41$	$15 \times 4 \times 4 \times .62$ $.46$	$15 \times 4 \times 4 \times .62$ $.53$						
19	$15 \times 4 \times 4 \times .62$ $.46$									
20										
21										
22										
23										
24										

(1) Die groottes van verstywers word in duim gespesifiseer.

(2) Groottes vir tussenlengtes van verstywers en -hoogtes van beskotdek moet deur interpolasie bepaal word.

(3) In die geval van U-profiel is die onderste dikte dié van die rib en die boonste dikte dié van die flens.

(4) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie Nommer 6-1924 en 4-1932 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.

*Hierdie hoogte moet waar nodig aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

TABLE 3—(continued).

SIZE 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	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×.50 .38	12×3½×3½×.50 .39	12×3½×3½×.60 .44
13	11×3½×.43	11×3½×.44	11×3½×.52	11×3½×.55	12×3½×3½×.50 .38	12×3½×3½×.50 .42	12×3½×3½×.60 .44	12×3½×3½×.60 .44	12×3½×3½×.60 .46	12×4×4×.60 .48
14	11×3½×.55	12×3½×3½×.50 .38	12×3½×3½×.50 .42	12×3½×3½×.60 .44	12×3½×3½×.60 .44	12×4×4×.60 .40	12×4×4×.60 .48	12×4×4×.60 .50	12×4×4×.60 .67	12×4×4×.60 .67
15	12×3½×3½×.60 .44	12×3½×3½×.60 .44	12×4×4×.60 .40	12×4×4×.60 .48	12×4×4×.60 .52	12×4×4×.60 .67	12×4×4×.60 .67	15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46
16	12×4×4×.60 .40	12×4×4×.60 .48	12×4×4×.60 .67	12×4×4×.60 .67	15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46	15×4×4×.62 .46	15×4×4×.62 .50	
17	12×4×4×.60 .67	12×4×4×.60 .70	15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46	15×4×4×.62 .50				
18	15×4×4×.62 .41	15×4×4×.62 .41	15×4×4×.62 .46	15×4×4×.62 .53						
19	15×4×4×.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

*This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 4.
(Paragraaf 2, 8 en 10 van hierdie Aanhangsel.)

ENTVERBINDINGS VIR VERSTYWERS.

Tipe en hoogte van verstywer.	Steunentverbindinge			Oorentverbindings
	Dikte van steun in duim.	Breedte van flens in duim.	Aantal en grootte van klinknaels in elke arm van steun.	Aantal en grootte van klinknaels in ore.
Hoekysters 6" en onder	·34		3 @ $\frac{3}{4}$ " deursneë	2 @ $\frac{3}{4}$ " deursneë
Bolhoekysters 6" en onder	·36		3 @ $\frac{3}{4}$ " "	2 @ $\frac{3}{4}$ " "
Bolhoekysters 7"	·40		4 @ $\frac{3}{4}$ " "	3 @ $\frac{3}{4}$ " "
" 8"	·42		5 @ $\frac{3}{4}$ " "	3 @ $\frac{3}{4}$ " "
" 9"	·34	2 $\frac{1}{2}$	6 @ $\frac{3}{4}$ " "	4 @ $\frac{3}{4}$ " "
" 10"	·36	2 $\frac{1}{2}$	7 @ $\frac{3}{4}$ " "	4 @ $\frac{3}{4}$ " "
" 11"	·38	2 $\frac{1}{2}$	7 @ $\frac{7}{8}$ " "	4 @ $\frac{7}{8}$ " "
" 12"	·4	3	8 @ $\frac{7}{8}$ " "	5 @ $\frac{7}{8}$ " "
U-ysters 12" × 3 $\frac{1}{2}$ " × 3 $\frac{1}{2}$ "	·4	3	9 @ $\frac{7}{8}$ " "	6 @ $\frac{7}{8}$ " "
" 12" × 4" × 4"	·4	3	10 @ $\frac{7}{8}$ " "	7 @ $\frac{7}{8}$ " "
" 15" × 4" × 4"	·44	3 $\frac{1}{2}$	13 @ $\frac{7}{8}$ " "	8 @ $\frac{7}{8}$ " "

- (1) Die afstand vanaf die hiel van die grensstaf tot by die uiteindes van die arms van die steun moet minstens twee en 'n half maal die hoogte van die verstywer waaraan die steun verbind is, wees.
(2) Die oorslag van die verstywers oor die steune moet minstens ·12 van die span wees.

TABLE 4.
(Paragraphs 2, 8 and 10 of this Annex.)

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 @ $\frac{3}{4}$ " diameter	2 @ $\frac{3}{4}$ " diameter
Bulb Angles 6" and under	·36		3 @ $\frac{3}{4}$ " "	2 @ $\frac{3}{4}$ " "
Bulb Angles 7"	·40		4 @ $\frac{3}{4}$ " "	3 @ $\frac{3}{4}$ " "
" " 8"	·42		5 @ $\frac{3}{4}$ " "	3 @ $\frac{3}{4}$ " "
" " 9"	·34	2 $\frac{1}{2}$	6 @ $\frac{3}{4}$ " "	4 @ $\frac{3}{4}$ " "
" " 10"	·36	2 $\frac{1}{2}$	7 @ $\frac{3}{4}$ " "	4 @ $\frac{3}{4}$ " "
" " 11"	·38	2 $\frac{1}{2}$	7 @ $\frac{7}{8}$ " "	4 @ $\frac{7}{8}$ " "
" " 12"	·4	3	8 @ $\frac{7}{8}$ " "	5 @ $\frac{7}{8}$ " "
Channels 12" × 3 $\frac{1}{2}$ " × 3 $\frac{1}{2}$ "	·4	3	9 @ $\frac{7}{8}$ " "	6 @ $\frac{7}{8}$ " "
" 12" × 4" × 4"	·4	3	10 @ $\frac{7}{8}$ " "	7 @ $\frac{7}{8}$ " "
" 15" × 4" × 4"	·44	3 $\frac{1}{2}$	13 @ $\frac{7}{8}$ " "	8 @ $\frac{7}{8}$ " "

- (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 ·12 of the span.

TABEL 5.
(Paragraaf 5 en 8 van hierdie Aanhangsel.)

GROOTTES VAN TONNELVERSTYWERS 36 DUIM VAN MEKAAR AF.

Gemiddelde hoogte vanaf die tunnelvoet tot by die beskotdek, in voet.	*Hoogte vanaf tunnelvoet tot by die bokant van die platkant, in voet.					
	3	4	5	6	7	8
12	$3 \times 2\frac{1}{2} \times .24$	$4 \times 2\frac{1}{2} \times .26$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .34$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .32$
16	$3\frac{1}{2} \times 2\frac{1}{2} \times .25$	$4 \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$
20	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4\frac{1}{2} \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .38$	$6 \times 3 \times .34$	$7 \times 3 \times .33$
24	$4 \times 2\frac{1}{2} \times .28$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .27$	$6 \times 3\frac{1}{2} \times .35$	$7 \times 3 \times .36$
28	$4 \times 3 \times .30$	$5 \times 3 \times .36$	$6 \times 3 \times .40$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$8 \times 3 \times .35$
32	$4\frac{1}{2} \times 3 \times .30$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .37$	$7 \times 3 \times .33$	$7 \times 3 \times .38$	$8 \times 3 \times .37$
36	$4\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .45$	$8 \times 3 \times .42$
40	$4\frac{1}{2} \times 3 \times .34$	$6 \times 3 \times .38$	$6 \times 3 \times .35$	$7 \times 3 \times .36$	$8 \times 3 \times .37$	$9 \times 3\frac{1}{2} \times .38$
44	$5 \times 3 \times .32$	$6 \times 3 \times .40$	$7 \times 3 \times .33$	$8 \times 3 \times .35$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$
48	$5 \times 3 \times .36$	$5\frac{1}{2} \times 3 \times .32$	$7 \times 3 \times .33$	$8 \times 3 \times .35$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .45$
52	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .37$	$7 \times 3 \times .36$	$8 \times 3 \times .37$	$9 \times 3\frac{1}{2} \times .38$	$10 \times 3\frac{1}{2} \times .40$
56	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .36$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$10 \times 3\frac{1}{2} \times .40$
60	$6 \times 3 \times .32$	$6 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .50$
	← Hoekysters →		← Bolhoekysters →			

(1) Die groottes van die verstywers word in duim gespesifiseer.

(2) Groottes vir tussenhoogtes moet deur interpolasie bepaal word.

(3) Hoekverstywers met 'n hoogte van 6 duim en alle bolhoekverstywers moet met 'n aansluitoor aan die binneboombeplating verbind word.

(4) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie 4A-1934 en 6-1924 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.

*Die hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

TABEL 5.
(Paragraphs 5 and 8 of this Annex.)

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	$3 \times 2\frac{1}{2} \times .24$	$4 \times 2\frac{1}{2} \times .26$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .34$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .32$
16	$3\frac{1}{2} \times 2\frac{1}{2} \times .25$	$4 \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$
20	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4\frac{1}{2} \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .38$	$6 \times 3 \times .34$	$7 \times 3 \times .33$
24	$4 \times 2\frac{1}{2} \times .28$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .27$	$6 \times 3\frac{1}{2} \times .35$	$7 \times 3 \times .36$
28	$4 \times 3 \times .30$	$5 \times 3 \times .36$	$6 \times 3 \times .40$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$8 \times 3 \times .35$
32	$4\frac{1}{2} \times 3 \times .30$	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .37$	$7 \times 3 \times .33$	$7 \times 3 \times .38$	$8 \times 3 \times .37$
36	$4\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .45$	$8 \times 3 \times .42$
40	$4\frac{1}{2} \times 3 \times .34$	$6 \times 3 \times .38$	$6 \times 3 \times .35$	$7 \times 3 \times .36$	$8 \times 3 \times .37$	$9 \times 3\frac{1}{2} \times .38$
44	$5 \times 3 \times .32$	$6 \times 3 \times .40$	$7 \times 3 \times .33$	$8 \times 3 \times .35$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$
48	$5 \times 3 \times .36$	$5\frac{1}{2} \times 3 \times .32$	$7 \times 3 \times .33$	$8 \times 3 \times .35$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .45$
52	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .37$	$7 \times 3 \times .36$	$8 \times 3 \times .37$	$9 \times 3\frac{1}{2} \times .38$	$10 \times 3\frac{1}{2} \times .40$
56	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .36$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$10 \times 3\frac{1}{2} \times .40$
60	$6 \times 3 \times .32$	$6 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .50$
	← 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.

*This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 1A.

(Paragraaf 8 en 10 van hierdie Aanhangsel.)

DIKTES VAN BESKOT EN TONNELBEPLATING.

Beplating van aanvaringsbeskot:
Verstywers 24 duim
van mekaar af.

Beplating van beskotte (behalwe
die aanvaringsbeskot) en plat-
beplating van tunnels:
Verstywers 30 duim van mekaar
af.

Geboë beplating van tunnels:
Verstywers 36 duim van mekaar
af.

Beplating van beskotte (behalwe
die aanvaringsbeskot) en plat-
beplating van tunnels:
Verstywers 36 duim van mekaar
af.

*Hoogte by middellyn vanaf beskotdek tot onderste rand van plaat, in voet.			*Hoogte by middellyn vanaf beskotdek tot by onderste rand van plaat, in voet.		
Dikte in duim.			Dikte in duim.		
Bo.	Nie bo nie.		Bo.	Nie bo nie.	
—	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

Indien die verstywers anders as hierbo gespesifiseer, gespasieer is, moet die diktes van die beplating sodanig wees dat dit 'n sterkte tot gevolg sal hê wat gelykstaan met dié verkry met die diktes en spasiërings hierbo gespesifiseer.

*Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

TABLE 1A.

(Paragraphs 8 and 10 of this Annex.)

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 Bulkheads (other than the Collision Bulkhead) and Flat		Plating of Tunnels: Stiffeners spaced 36 inches apart.	
Plating of Tunnels: Stiffeners spaced 30 inches apart		Curved Plating of Tunnels: Stiffeners spaced 36 inches apart.	
*Depth at Middle Line from Bulkhead Deck to Lower Edge of Plate in feet.		*Depth at Middle Line from Bulkhead Deck to Lower Edge of Plate in feet.	
Thickness in inches.		Thickness in inches.	
<i>Above.</i>	<i>Not above.</i>	<i>Above.</i>	<i>Not above.</i>
—	7	—	8
7	9	8	10
9	11	10	12
11	14	12	14
14	16.5	14	16
16.5	19	16	18
19	22	18	21
22	25	21	23
—	—	23	26
25	28	26	29
28	31	29	31.5

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.

*This depth shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 2A.

(Paragraaf 8 en 10 van hierdie Aanhangsel.)

GROOTTES VAN BESKOTVERSTYWERS 30 DUIM VAN MEKAAR AF EN OOREENKOMSTIG TABEL 4 BO EN ONDER VOORSIEN VAN STEUNENTVERBINDINGS.

Totale lengte van verstywers insluitend entver- bindings, in voet.		*Hoogte van beskotdek bokant bopunt van verstywer, in voet.									
		0	2	4	6	8	10	12	14	16	18
6	Hoekysters					$4 \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .26$	$4 \times 3 \times .30$	$4 \times 3 \times .34$	$4\frac{1}{2} \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .32$
7						$4\frac{1}{2} \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .30$	$5 \times 3 \times .34$	$5 \times 3 \times .36$
8		$3 \times 2\frac{1}{2} \times .24$	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5 \times 2\frac{1}{2} \times .34$
9		$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5 \times 2\frac{1}{2} \times .36$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .34$
10		$4 \times 3\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5 \times 2\frac{1}{2} \times .36$	$5\frac{1}{2} \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .37$	$6 \times 3 \times .34$	$6 \times 3 \times .35$
11		$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .34$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$
12	Bolhoekysters	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .36$	$8 \times 3 \times .35$
13		$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	
14		$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .37$	
15		$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$		
16		$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$		
17		$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$			
18		$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$			
19		$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$				
20		$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$				

(1) Die groottes van verstywers word in duim gespesifiseer.

(2) Groottes vir tussenlengtes van verstywers en -hoogtes van beskotdek moet deur interpolasie bepaal word.

(3) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie 4A-1934 en 6-1924 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.

*Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

TABLE 2A.
(Paragraphs 8 and 10 of this Annex.)

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					$4 \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .26$	$4 \times 3 \times .30$	$4 \times 3 \times .34$	$4\frac{1}{2} \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .32$
7						$4\frac{1}{2} \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .30$	$5 \times 3 \times .34$	$5 \times 3 \times .36$
8		$3 \times 2\frac{1}{2} \times .24$	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5 \times 2\frac{1}{2} \times .34$
9		$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5 \times 2\frac{1}{2} \times .36$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .34$
10		$4 \times 3\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5 \times 2\frac{1}{2} \times .36$	$5\frac{1}{2} \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .37$	$6 \times 3 \times .34$	$6 \times 3 \times .35$
11		$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .34$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$
12	Bulb Angles	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .36$	$8 \times 3 \times .35$
13		$6 \times 3 \times .32$	$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	
14		$5 \times 2\frac{1}{2} \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .37$	
15		$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$		
16		$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$		
17		$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$9 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$			
18		$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$			
19		$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$				
20		$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$				

- (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.
 *This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 3A.

(Paragraaf 8 en 10 van hierdie Aanhangsel.)

GROOTTES VAN BESKOTVERSTYWERS 30 DUIM VAN MEKAAR AF EN OOREENKOMSTIG TABEL 4 BO EN ONDER VOORSIEN VAN OORENTVERBINDINGS.

Totale lengte van verstywer insluitend entver- bindings, in voet.		*Hoogte van beskotdek bokant bopunt van verstywer, in voet.									
		0	2	4	6	8	10	12	14	16	18
8	Hoekysters					$6 \times 3 \times \cdot 32$	$6 \times 3 \times \cdot 38$	$5\frac{1}{2} \times 3 \times \cdot 32$	$5\frac{1}{2} \times 3 \times \cdot 35$	$6 \times 3 \times \cdot 34$	$6 \times 3\frac{1}{2} \times \cdot 35$
9			$5 \times 3 \times \cdot 32$	$6 \times 3 \times \cdot 32$	$6 \times 3 \times \cdot 36$	$5\frac{1}{2} \times 3 \times \cdot 32$	$5\frac{1}{2} \times 3 \times \cdot 37$	$6 \times 3 \times \cdot 34$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 36$
10		$5 \times 3 \times \cdot 30$	$6 \times 3 \times \cdot 32$	$6 \times 3 \times \cdot 38$	$5\frac{1}{2} \times 3 \times \cdot 34$	$6 \times 3\frac{1}{2} \times \cdot 35$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 36$	$7 \times 3 \times \cdot 41$	$8 \times 3 \times \cdot 35$
11		$6 \times 3 \times \cdot 32$	$5\frac{1}{2} \times 3 \times \cdot 32$	$5\frac{1}{2} \times 3 \times \cdot 38$	$6 \times 3\frac{1}{2} \times \cdot 35$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 36$	$7 \times 3 \times \cdot 41$	$8 \times 3 \times \cdot 35$	$8 \times 3 \times \cdot 37$	$8 \times 3 \times \cdot 42$
12		$6 \times 3 \times \cdot 36$	$6 \times 3 \times \cdot 34$	$6 \times 3 \times \cdot 39$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 40$	$8 \times 3 \times \cdot 35$	$8 \times 3 \times \cdot 35$	$8 \times 3 \times \cdot 42$	$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 38$
13	Bolhoekysters	$6 \times 3 \times \cdot 34$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 41$	$8 \times 3 \times \cdot 35$	$8 \times 3 \times \cdot 40$	$8 \times 3\frac{1}{2} \times \cdot 46$	$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 44$	
14		$7 \times 3 \times \cdot 33$	$7 \times 3 \times \cdot 36$	$8 \times 3 \times \cdot 35$	$8 \times 3 \times \cdot 37$	$8 \times 3\frac{1}{2} \times \cdot 46$	$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 40$	$9 \times 3\frac{1}{2} \times \cdot 51$	$10 \times 3\frac{1}{2} \times \cdot 40$	
15		$7 \times 3 \times \cdot 33$	$8 \times 3 \times \cdot 35$	$8 \times 3 \times \cdot 37$	$8 \times 3\frac{1}{2} \times \cdot 46$	$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 51$	$10 \times 3\frac{1}{2} \times \cdot 40$	$10 \times 3\frac{1}{2} \times \cdot 42$		
16		$7 \times 3 \times \cdot 40$	$8 \times 3 \times \cdot 37$	$8 \times 3\frac{1}{2} \times \cdot 46$	$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 51$	$10 \times 3\frac{1}{2} \times \cdot 40$	$10 \times 3\frac{1}{2} \times \cdot 50$	$11 \times 3\frac{1}{2} \times \cdot 43$		
17		$8 \times 3 \times \cdot 35$	$8 \times 3\frac{1}{2} \times \cdot 46$	$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 51$	$10 \times 3\frac{1}{2} \times \cdot 40$	$11 \times 3\frac{1}{2} \times \cdot 43$	$11 \times 3\frac{1}{2} \times \cdot 43$			
18		$8 \times 3\frac{1}{2} \times \cdot 46$	$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 51$	$10 \times 3\frac{1}{2} \times \cdot 42$	$11 \times 3\frac{1}{2} \times \cdot 43$	$11 \times 3\frac{1}{2} \times \cdot 45$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times \cdot 50$ $\cdot 38$			
19		$9 \times 3\frac{1}{2} \times \cdot 38$	$9 \times 3\frac{1}{2} \times \cdot 51$	$10 \times 3\frac{1}{2} \times \cdot 42$	$11 \times 3\frac{1}{2} \times \cdot 43$	$11 \times 3\frac{1}{2} \times \cdot 48$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times \cdot 50$ $\cdot 38$				
20		$9 \times 3\frac{1}{2} \times \cdot 51$	$10 \times 3\frac{1}{2} \times \cdot 42$	$11 \times 3\frac{1}{2} \times \cdot 43$	$11 \times 3\frac{1}{2} \times \cdot 48$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times \cdot 50$ $\cdot 38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times \cdot 50$ $\cdot 44$				

U-ysters

- (1) Die groottes van verstywers word in duim gespesifiseer.
 - (2) Groottes vir tussenlengtes van verstywers en -hoogtes van beskotdek moet deur interpolasie bepaal word.
 - (3) In die geval van U-profiel is die onderste dikte dié van die rib en die boonste dikte dié van die flens.
 - (4) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie Nommer 4A-1934, 6-1924 en 4-1932 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.
- *Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

TABLE 3A.
(Paragraphs 8 and 10 of this Annex.)

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	Bulb Angles	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		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×.50 .38			
19		9×3½×.38	9×3½×.51	10×3½×.42	11×3½×.43	11×3½×.48	12×3½×3½×.50 .38				
20		9×3½×.51	10×3½×.42	11×3½×.43	11×3½×.48	12×3½×3½×.50 .38	12×3½×3½×.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.

*This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 3B.
(Paragraaf 8 en 10 van hierdie Aanhangel.)

GROOTTES VAN BESKOTVERSTYWERS 30 DUIM VAN MEKAAR AF EN OOREENKOMSTIG TABEL 4 BO EN ONDER VOORSIEN VAN OORENTERBINDINGS.

Totale lengte van verstywers insluitend entver- bindings, in voet.		*Hoogte van beskotdek bokant bopunt van verstywer, in voet.									
		0	2	4	6	8	10	12	14	16	18
6	Hoekysters	$3 \times 2\frac{1}{2} \times .23$	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .28$	$4 \times 3 \times .32$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .38$
7		$3\frac{1}{2} \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .34$	$6 \times 3 \times .34$
8		$4 \times 2\frac{1}{2} \times .25$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .34$	$6 \times 3 \times .32$	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .33$
9		$4\frac{1}{2} \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3\frac{1}{2} \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .38$	$8 \times 3 \times .35$
10		$6 \times 3 \times .32$	$6 \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .37$
11	Bolhoekysters	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .40$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$
12		$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .40$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$
13		$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .40$	
14		$7 \times 3 \times .33$	$7 \times 3 \times .40$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .45$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .42$	$10 \times 3\frac{1}{2} \times .50$	
15		$7 \times 3 \times .38$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .44$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$		
16		$8 \times 3 \times .35$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .52$		
17		$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .56$			
18		$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.44$			
19		$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .42$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .52$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$				
20		$10 \times 3\frac{1}{2} \times .40$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.48$				

(1) Die groottes van verstywers word in duim gespesifiseer.

(2) Groottes vir tussenlengtes van verstywers en -hoogtes van beskotdek moet deur interpolasie bepaal word.

(3) Die ente van die verstywers moet aan die beskotgrenshoek geklink word.

(4) In die geval van U-profiel is die onderste dikte dié van die rib en die boonste dikte dié van die flens.

(5) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in die Britse Standaardspesifikasie Nommer 4A-1934, 6-1924 en 4-1932 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.

*Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangel te voldoen.

TABLE 3B.
(Paragraphs 8 and 10 of this Annex.)

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	$3 \times 2\frac{1}{2} \times .23$	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .28$	$4 \times 3 \times .32$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .38$
7	$3\frac{1}{2} \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .34$	$6 \times 3 \times .34$
8	$4 \times 2\frac{1}{2} \times .25$	$4\frac{1}{2} \times 3 \times .30$	$5 \times 3 \times .34$	$6 \times 3 \times .32$	$6 \times 3 \times .38$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .33$
9	$4\frac{1}{2} \times 3 \times .30$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3\frac{1}{2} \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .38$	$8 \times 3 \times .35$
10	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$7 \times 3 \times .38$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .37$
11	$6 \times 3 \times .32$	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .36$	$8 \times 3 \times .35$	$8 \times 3 \times .35$	$8 \times 3 \times .40$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$
12	$5\frac{1}{2} \times 3 \times .32$	$6 \times 3 \times .35$	$7 \times 3 \times .33$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .37$	$8 \times 3 \times .40$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$9 \times 3\frac{1}{2} \times .51$
13	$6 \times 3 \times .34$	$7 \times 3 \times .33$	$7 \times 3 \times .40$	$8 \times 3 \times .35$	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .40$	
14	$7 \times 3 \times .33$	$7 \times 3 \times .40$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .45$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .42$	$10 \times 3\frac{1}{2} \times .50$	
15	$7 \times 3 \times .38$	$8 \times 3 \times .37$	$8 \times 3\frac{1}{2} \times .44$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$10 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .43$		
16	$8 \times 3 \times .35$	$8 \times 3\frac{1}{2} \times .46$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .40$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .52$		
17	$8 \times 3 \times .42$	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$11 \times 3\frac{1}{2} \times .56$			
18	$9 \times 3\frac{1}{2} \times .38$	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .45$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.44$			
19	$9 \times 3\frac{1}{2} \times .51$	$10 \times 3\frac{1}{2} \times .42$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .52$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$				
20	$10 \times 3\frac{1}{2} \times .40$	$11 \times 3\frac{1}{2} \times .43$	$11 \times 3\frac{1}{2} \times .50$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .50$ $.38$	$12 \times 3\frac{1}{2} \times 3\frac{1}{2} \times .60$ $.44$	$12 \times 4 \times 4 \times .60$ $.48$				
Channels										

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.

*This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

TABEL 5A.

(Paragraaf 8 en 10 van hierdie Aanhangsel.)

GROOTTES VAN TONNELVERSTYWERS 36 DUIM VAN MEKAAR AF.

*Gemiddelde hoogte vanaf die tonnelvoet tot by de beskotdek, in voet.	Hoogte vanaf tonnelvoet tot by die bokant van die platkant, in voet.						
	3 voet 0 duim.	3 voet 6 duim.	4 voet 0 duim.	4 voet 6 duim.	5 voet 0 duim.	5 voet 6 duim.	6 voet 0 duim.
8	$2\frac{1}{2} \times 2\frac{1}{2} \times .20$	$2\frac{1}{2} \times 2\frac{1}{2} \times .24$	$3 \times 2\frac{1}{2} \times .23$				
12	$2\frac{1}{2} \times 2\frac{1}{2} \times .24$	$3 \times 2\frac{1}{2} \times .26$	$3\frac{1}{2} \times 3\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .28$	$4 \times 3 \times .30$	
16	$3 \times 2\frac{1}{2} \times .24$	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .26$	$4 \times 3 \times .32$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .32$	$5 \times 3 \times .38$
20	$3\frac{1}{2} \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .26$	$4 \times 3 \times .32$	$4\frac{1}{2} \times 3 \times .34$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$
24	$3\frac{1}{2} \times 2\frac{1}{2} \times .30$	$4 \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .40$
28	$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .38$	$5 \times 3 \times .38$	$6 \times 3 \times .32$	$6 \times 3 \times .40$	$5\frac{1}{2} \times 3 \times .34$ Bolhoekysters

(1) Die groottes van die verstywers word in duim gespesifiseer.

(2) Groottes vir tussenhoogtes moet deur interpolasie bepaal word.

(3) Die ente van tonnelverstywers moet aan die tonnelgrenshoeke geklink word.

(4) Bostaande verstywers moet voldoen aan die spesifikasies uiteengesit in Britse Standaardspesifikasie Nommer 4A-1934 en 6-1924 wat op verstywers met die afmetings en van die tipe soos aangegee, van toepassing is.

*Hierdie hoogte moet, waar nodig, aangepas word om aan die vereistes van paragraaf 1 (1) van hierdie Aanhangsel te voldoen.

TABLE 5A.

(Paragraphs 8 and 10 of this Annex.)

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	$2\frac{1}{2} \times 2\frac{1}{2} \times .20$	$2\frac{1}{2} \times 2\frac{1}{2} \times .24$	$3 \times 2\frac{1}{2} \times .23$				
12		$2\frac{1}{2} \times 2\frac{1}{2} \times .24$	$3 \times 2\frac{1}{2} \times .26$	$3\frac{1}{2} \times 3\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .28$	$4 \times 3 \times .30$	
16		$3 \times 2\frac{1}{2} \times .24$	$3\frac{1}{2} \times 2\frac{1}{2} \times .26$	$4 \times 2\frac{1}{2} \times .26$	$4 \times 3 \times .32$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .32$	$5 \times 3 \times .38$
20		$3\frac{1}{2} \times 2\frac{1}{2} \times .25$	$4 \times 2\frac{1}{2} \times .26$	$4 \times 3 \times .32$	$4\frac{1}{2} \times 3 \times .34$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .32$
24		$3\frac{1}{2} \times 2\frac{1}{2} \times .30$	$4 \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .32$	$5 \times 3 \times .32$	$6 \times 3 \times .32$	$6 \times 3 \times .34$	$6 \times 3 \times .40$
28		$4 \times 2\frac{1}{2} \times .28$	$4\frac{1}{2} \times 3 \times .30$	$4\frac{1}{2} \times 3 \times .38$	$5 \times 3 \times .38$	$6 \times 3 \times .32$	$6 \times 3 \times .40$	$5\frac{1}{2} \times 3 \times .34$ 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.

*This height shall be adjusted where necessary to satisfy the requirements of paragraph 1 (1) of this Annex.

(Regulasie 57.)

AANHANGSEL 5.

OUTOMATIESE SPRINKELBLUS-, BRANDALARM- EN BRANDVERKLIKSTELSEL.

1. TIPE EN VULLING VAN STELSEL.

Die outomatiese sprinkelblus-, brandalarm- en brandverklikstelsel moet die nat tipe met bospirinkelblussers wees en moet te alle tye ten volle gevul 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 in hierdie subparagraaf gespesifiseer, moet verskaf word met 'n blywende vars-

(Regulation 57.)

ANNEX 5.

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 subparagraph, shall be provided and shall have a stand-

watervulling van minstens 25 maal die uitstorting uit die grootste sprinkelblusser wanneer dit teen die ontwerpwerking en -druk werk; die totale inhoudsmaat van die tenk moet minstens twee maal die blywende varswatervulling wat vir die outomatiese werking van die stelsel nodig is, wees. Die inrigting moet sodanig wees dat die tenk gevul kan word tot 'n lugdruk wat voldoende is om die hoogste sprinkelblusser in die stelsel bevredigend by die ontwerpdruk te laat werk.

- (ii) Die druktenk moet voorsien wees van 'n doeltreffende ontlasklep en van 'n peilglas en 'n drukmeter. Afsluitkleppe of -krane moet by elkeen van die meterverbindinge aangebring word.

(b) Lugtoevoer:—

Die druktenk moet verbind wees aan 'n lugtoevoer wat in staat is om die druk wat ingevolge subparagraaf (a) vereis word, in die tenk te handhaaf.

(c) Pype:—

- (i) Die pype wat deel van die stelsel uitmaak, moet van staal of ander geskikte materiaal wees en moet sterk genoeg wees met inagneming van die druk waaraan hulle onderwerp mag word, en hulle moet behoorlik verbind en gestut wees.

- (ii) Aansluitings moet verskaf word vir die toevoer van 'n byvulling van die blywende varswatervulling in die druktenk en vir die deurspoeling van die pype met vars water nadat soutwater in die stelsel gebruik is.

- (iii) Pype wat deur ys aangetas kan word, moet geïsoleer word om bevriesing van die water daarin te voorkom.

(d) Buiteaansluitings:—

Elke sprinkelblusstelsel moet 'n aansluiting met die skip se hoofbrandweerpyp hê wat voorsien is van 'n skroefklep en 'n terugslagklep by die aansluiting om terugvloeiing uit die sprinkelblusstelsel na die hoofbrandweerpyp te voorkom. Daarbenewens mag daar slangkoppings met afsluit- en terugslagkleppe naby die koppings aangebring word vir verbinding met 'n kustoevoer, maar geen ander buiteaansluitings mag aangebring word nie. Die sprinkelblusstelsel moet 'n selfstandige eenheid wees.

Afsluitkleppe vir die kustoevoer en die aansluiting met die skip se hoofbrandweerpyp moet duidelik en blywend gemerk wees om hul doel aan te dui en moet in die toe-positie gesluit kan word.

(e) Pomp:—

- (i) 'n Onafhanklike kragpomp moet voorsien word uitsluitlik vir die doel om water voortdurend outomaties deur die sprinkelkoppe uit te laat. Die pomp moet outomaties in werking gestel word deur die drukval in die stelsel voordat die blywende varswatervulling in die druktenk heeltemal uitgeput is.

- (ii) Die pomp moet 'n direkte suigleiding uit die see hê wat onafhanklik van enige ander suigleiding moet wees. 'n Afvoerklep met 'n kort oop uitlaatpyp moet vir toetsdoeleindes naby die pomp aan die leweringskant aangebring word. So 'n klep en pyp moet 'n effektiewe uitlaattoepervlakte hê wat minstens gelyk is aan die totale uitlaattoepervlakte van 15 sprinkelblussers.

- (iii) Die inrigting moet sodanig wees dat die pomp nie seewater in die druktenk sal laat kom nie.

- (iv) Die pomp moet in staat wees om met die afvoerklep heeltemal oop, die ontwerpwerkdruk van die sprinkelblusser op die vlak van die hoogste sprinkelblusser te handhaaf.

(f) Sprinkelkoppe:—

- (i) Sprinkelkoppe moet in afsonderlike afdelings gegroepeer word, elk met hoogstens 200 sprinkelkoppe. 'n Afdeling sprinkelkoppe mag hoogstens twee dekke bedien en mag nie in meer as een vertikale hoofzone of in meer as een waterdigte afdeling wees nie. Met die voorbehoud dat 'n afdeling sprinkelkoppe in enige skip meer as twee dekke mag bedien, of in meer as een vertikale hoofzone mag wees, mits die Owerheid oortuig is dat die brandbeveiliging van die skip nie daardeur verminder word nie.

- (ii) Elke afdeling sprinkelkoppe moet deur een kontroleklep beheer word en daar mag geen ander kleppe vir die beheer van enige van die sprinkelblussers in daardie afdeling aangebring word nie. Die kontrolekleppe moet maklik bereikbaar wees en hul plekke moet duidelik en blywend aangedui word. Middels moet verskaf word om te voorkom dat iemand wat nie deur die gesagvoerder van die skip daartoe gemagtig is nie, die kontrolekleppe bedien.

- (iii) 'n Drukmeter moet by elke kontroleklep en by 'n sentrale pos aangebring word om die waterdruk wat in die hele stelsel beskikbaar is, aan te dui.

- (iv) Die sprinkelkoppe moet met soutwater kan werk en moet by 'n temperatuur van minstens 155° F. (68° C.) en hoogstens 212° F. (100° C.) in werking kom, behalwe in droogkamers en soortgelyke warm ruimtes. Monsterlote van die bolle moet getoets word deur indompeling in

ing charge of fresh water of at least 25 times the discharge from the largest sprinkler when operating at the rated output and pressure; the total capacity of the tank shall not be less than twice the standing charge of fresh water required for the automatic operation of the system. The arrangement shall be such that the tank can be charged to an air pressure sufficient to operate satisfactorily at the rated pressure 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 supply:—

The pressure tank shall be connected to an air supply capable of maintaining in the tank the pressure required by subparagraph (a).

(c) Pipes:—

- (i) The pipes forming part of the system shall be made of steel or other suitable material and shall be 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:—

Every sprinkler system shall have a connection from the ship's fire main, provided with a screw-down valve and a non-return valve at the connection which will prevent a backflow from the sprinkler system to the fire main. In addition, there may be fitted hose couplings with shut-off valves and non-return valves situated close to the couplings for the purpose of coupling to a shore supply, but no other external connection shall be fitted. The sprinkler system shall be a self-contained unit.

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) 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 waste valve with a short open-ended discharge pipe for testing purposes. Such valve and pipe shall have an effective discharge area at least equivalent to the total discharge area of 15 sprinklers.

- (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 the rated sprinkler operating pressure at the level of the highest sprinkler in the system with the waste valve fully open.

(f) Sprinkler Heads:—

- (i) Sprinkler heads shall be grouped into separate sections, each of which contains not more than 200 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 Authority is satisfied that the protection of the ship against fire is not thereby reduced.

- (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 location shall be clearly and permanently indicated. Means shall be provided to prevent the operation of the control valves by any person not authorized 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.) and not more than 212° F. (100° C.) except in drying rooms and similar hot spaces. Sample batches of the bulbs shall be tested by immersion in hot oil when 90 per cent of the

warm olie wanneer 90 persent van die bolle in elke lot binne 'n temperatuurstyging van 25° F. bo die ontwerp-temperatuur moet funksioneer en alle bolle binne 'n styging van 70° F. moet funksioneer.

- (v) Elke sprinkelkop moet in staat wees om 'n toereikende hoeveelheid water onder 'n geskikte werkdruk uit te laat.
- (vi) Daar moet minstens ses reserwesprinkelkoppe vir elke afdeling voorsien word. Hulle moet in kaste of houers wat vir dié doel naby die kontroleklep vir die afdeling aangebring is, gebêre word en die kaste of houers moet duidelik en blywend gemerk word om hul inhoud aan te dui.
- (g) **Spasiëring van sprinkelkoppe:—**
Sprinkelkoppe moet op 'n afstand van hoogstens 13 voet van mekaar af en hoogstens 6 voet 6 duim van 'n beskot af aangebring word. Hulle moet so ver moontlik van balke of ander voorwerpe wat moontlik die uitspuit van water kan belemmer, af geplaas word en in sulke posisies dat alle brandbare materiaal in die betrokke ruimte goed natgespuit sal word.
- (h) **Outomatiese alarm:—**
Die sprinkelblusstelsel moet middels insluit om outomaties 'n sig- en hoorbare alarmsein te gee wanneer enige sprinkelblusser in werking kom. Die alarmsein moet op een of meer plekke in die skip aangebring word sodat dit gou onder die aandag van die gesagvoerder en bemanning van die skip kan kom, die teenwoordigheid of aanduiding en posisie van 'n brand in die ruimtes wat die stelsel bedien, aantoon. Indien so 'n 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:—**
Daar moet minstens twee kragbronne voorsien word om die onafhanklike pomp, lugkompressor en outomatiese alarm te bedien en een daarvan moet 'n noodbron wees.
- (j) **Voorsiening vir toetse:—**
 - (i) 'n Toetsklep moet voorsien word vir die toets van die outomatiese alarm vir elke afdeling sprinkelblussers deur 'n waterstorting gelykstaande met die werking van een sprinkelkop. Die toetsklep vir elke afdeling moet naby die kontroleklep vir daardie afdeling aangebring word.
 - (ii) Middels moet voorsien word om die outomatiese inskakeling van die pomp te toets.
 - (iii) Skakelaars moet by een van die punte waarna in sub-paragraaf (h) verwys word, aangebring word sodat die alarm en die aanwysers in elke afdeling sprinkelblussers getoets kan word.

AANHANGSEL 6.

(Regulasie 149.)

KONSTRUKSIE VAN BOTE: PLANNE EN BESONDERHEDE.

Die planne en besonderhede betreffende die romp, masjinerie en uitrusting wat ooreenkomstig regulasie 149 voorgelê moet word, is soos volg:—

- (1) **Planne:—**
 - (a) 'n Langsaansig met die mate volledig ingeskryf, wat die posisie van die beskotte, luikopeninge en dekhuisse, bemanningsruimtes, ens. aangee;
 - (b) 'n midskope deursnee met die mate volledig ingeskryf wat die afmetings van die huid, dek, verskansings, spante, vloere, stringers en balke aangee;
 - (c) 'n reeks volledige maatplanne wat besonderhede van dekopenings, ventilators en lugpype en tenks aangee;
 - (d) 'n enjinkameraanlegplan;
 - (e) 'n pompinrigtingplan;
 - (f) 'n plan van die skroefasinrigting;
 - (g) 'n plan van die roer- en stuurinrigting;
 - (h) enjinfunderingsinrigting;
 - (i) stabiliteitskrommes; en
 - (j) 'n diagram van die elektriese stroombaan.
- (2) **Spesifikasies:—**
 - (a) alle hoofrompdele met vermelding van die materiaal, met inbegrip van die kiel, voorstewe, agterstewe, balke, spante, vloere, huid en dek en hul hegstukke;
 - (b) masjinerie-inrigtings insluitend hulpmasjinerie;
 - (c) brand-, lens- en ballaspompinrigtings;
 - (d) brandstoppompinrigtings;
 - (e) rompbodemtoebehoere;
 - (f) beskotte;
 - (g) luikopenings, -hoofde en -deksels;
 - (h) dekhuisse;
 - (i) deure, drumpels, patryspoorte en noodluike;
 - (j) verskansings;
 - (k) ventilasie;

bulbs in each batch shall function within a temperature rise of 25° F. above the rated temperature and all bulbs shall function within a rise of 70° F.

- (v) Each sprinkler head shall be capable of discharging a sufficient quantity of water at a suitable operating pressure.
- (vi) At 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 possible 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 to ensure that the attention of the master and crew of the ship is quickly directed thereto, the occurrence or indication of fire and its location 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, one of which shall be an emergency source.
- (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.

ANNEX. 6.

(Regulation 149.)

CONSTRUCTION OF BOATS: PLANS AND PARTICULARS.

The plans and particulars respecting hull, machinery and equipment to be submitted in accordance with regulation 149 are as follows:—

- (1) **Plans:—**
 - (a) A fully dimensioned longitudinal elevation showing position of bulkheads, hatchways and deckhouses, crew spaces, etc.
 - (b) a fully dimensioned midship section showing scantlings of shell, decking, bulwarks, frames, floors, stringers and beams;
 - (c) a series of fully dimensioned plan views showing particulars of deck openings, ventilators and air pipes and tanks;
 - (d) an engine room layout plan;
 - (e) a pumping arrangement plan;
 - (f) a propeller shaft arrangement plan;
 - (g) a rudder and steering arrangement plan;
 - (h) engine seating arrangement;
 - (i) stability curves; and
 - (j) an electrical circuit diagram.
- (2) **Specifications:—**
 - (a) all principal hull members stating the materials, including keel, stem, sternpost, beams, frames, floors, shell and deck and their fastenings;
 - (b) machinery arrangements including auxiliary machinery;
 - (c) fire, bilge and ballast pumping arrangements;
 - (d) fuel pumping arrangements;
 - (e) underwater fittings;
 - (f) bulkheads;
 - (g) hatchways, hatch coamings and covers;
 - (h) deckhouses;
 - (i) doors, sills, side scuttles and escape hatches;
 - (j) bulwarks;
 - (k) ventilation;

- (f) tenks;
 (m) ankers en ankerkettings en wenas (as daar is);
 (n) wenasse, maste, laaibome;
 (o) stuurinrigting;
 (p) akkommodasie vir die bemanning;
 (q) inrigtings vir stuwing en tewaterlating van reddingsbote (as daar is);
 (r) ander lewensreddingsuitrusting insluitend brandblusinrigtings;
 (s) navigasieligte en klankseine;
 (t) elektriese inrigtings; en
 (u) medisyne.

(Regulasie 161.)

AANHANGSEL 7.

KONSTRUKSIE VAN BOTE: WATERDIGTE HOUT-BESKOTTE.

Maksimum hoogte van beskotte in die middel (voet)	Verstywers aan sye gevorm (duim)	Spasiëring van vertikale verstywers (duim)	Dikte van elke laag (dubbel) (duim)	Dikte van enkelbeplanking (duim)
4	2 × 2½	18	¾	1
6	2½ × 3½	20	1	1½
8	3 × 4	22	1½	1½
10	3½ × 5	24	1½	1½
12	4 × 6	26	1½	2

Die Sekretaris sal beskotte met 'n groter hoogte as wat in bo- staande tabel aangegee word, spesiaal oorweeg.

(Regulasie 162.)

AANHANGSEL 8.

KONSTRUKSIE VAN BOTE: LUIKE.

1. Houtluikdeksels.

- (a) Die afmetings van houtluikdeksels moet minstens soos volg wees:

Ongesteunde lengte.	Dikte.	Landing op luikhooftde.
3' 0"	1½"	1½"
3' 6"	1½"	1½"
4' 0"	2"	2"
4' 6"	2½"	2"
5' 0"	2½"	2"
5' 6"	2½"	2½"
6' 0"	2½"	2½"

- (b) Spanne van meer as 6' 0" moet voorsien word van luikbalke of langsmerkels.

2. Houtluikbalke en -langsmerkels met 'n reghoekige dwars-deursnee.

- (a) Die afmetings van luikbalke of langsmerkels, met uitsondering van die tong (indien aangebring) kan bereken word volgens die formule:

$$\frac{B \times D^2}{6} = \frac{S \times L^2}{4}$$

waar B = die breedte van balk of langsmerkel, in duim,
 D = die hoogte van balk of langsmerkel, in duim,
 S = die spasiëring van balke of langsmerkels, in voet,
 L = die lengte van ongesteunde span in voet.

- (b) Die volgende tabel toon die grootte van houtluikbalke of -langsmerkels ooreenkomstig die formule in sub-paragraaf (a) aangegee, vir luikopenings van tot 10' × 12':—

- (f) tanks;
 (m) anchors and cables and windlass (if any);
 (n) winches, masts, derricks;
 (o) steering gear;
 (p) crew accommodation;
 (q) lifeboat stowage and launching arrangements (if any);
 (r) other life-saving equipment including fire-fighting arrangements;
 (s) navigation lights and sound signals;
 (t) electrical arrangements; and
 (u) medicines

(Regulation 161.)

ANNEX. 7.

CONSTRUCTION OF BOATS: WOOD WATERTIGHT BULKHEADS.

Maximum depth of bulkhead at centre (feet)	Stiffeners side moulded (inches)	Spacing of vertical stiffeners (inches)	Thickness of each layer (double) (inches)	Thickness of single planking (inches)
4	2 × 2½	18	¾	1
6	2½ × 3½	20	1	1½
8	3 × 4	22	1½	1½
10	3½ × 5	24	1½	1½
12	4 × 6	26	1½	2

For bulkheads of a depth greater than that given in the above table, special consideration will be given by the Secretary.

(Regulation 162.)

ANNEX. 8.

CONSTRUCTION OF BOATS: HATCHES.

1. Wooden hatch covers.

- (a) Scantlings of wooden hatch covers shall not be less than the following:—

Unsupported Length.	Thickness.	Landing on Coamings.
3' 0"	1½"	1½"
3' 6"	1½"	1½"
4' 0"	2"	2"
4' 6"	2½"	2"
5' 0"	2½"	2"
5' 6"	2½"	2½"
6' 0"	2½"	2½"

- (b) Spans in excess of 6' 0" shall be fitted with hatch beams or fore-and-afters.

2. Wooden hatch beams and fore-and-afters of rectangular cross section.

- (a) The scantlings of rectangular cross section hatch beams or fore-and-afters, exclusive of tongue (if fitted) may be obtained from the formula:—

$$\frac{B \times D^2}{6} = \frac{S \times L^2}{4}$$

where B = breadth of beam or fore-and-after, in inches,
 D = depth of beam or fore-and-after, in inches,
 S = spacing of beams or fore-and-afters, in feet,
 L = length of unsupported span in feet.

- (b) The following table shows size of wooden hatch beams or fore-and-afters in accordance with the formula given in sub-paragraph (a), for hatch openings up to 10' × 12':—

Grootte van luikopening.	Grootte van balk of langsmerkel in die middel.
6' 6" × 7' 0"	5" × 7" Vertikaal.
7' 0" × 7' 0"	5½" × 7" "
7' 0" × 8' 0"	5½" × 8" "
7' 0" × 9' 0"	6" × 8½" "
8' 0" × 9' 0"	6" × 9" "
8' 0" × 10' 0"	7" × 9½" "
9' 0" × 9' 0"	7" × 9" "
9' 0" × 10' 0"	7" × 10" "
10' 0" × 10' 0"	7" × 10½" "
10' 0" × 11' 0"	7½" × 11" "
10' 0" × 12' 0"	7½" × 12" "

(c) Die minimum dradeel wat by die ente van luikbalke of langsmerkels vereis word, is 3 duim.

3. Luikhoofde.

(a) Die afmetings van luikhoofde moet minstens soos volg wees:

Maksimum lengte van luikhoofsy of -ent.	Hoogte van luikhoof bokant dek.	Dikte van luikhoof by dek.	
		Hout.	Staal.
3' 0"	12" 15" 18"	3" 3" 3"	½" ½" ½"
4' 0"	12" 15" 18"	3" 3" 3"	½" ½" ½"
5' 0"	12" 15" 18"	3" 3½" 3½"	½" ½" ½"
6' 0"	12" 15" 18" 21" 24"	3" 3½" 3½" 3½" 4"	½" ½" ½" ½" ½"
7' 0"	12" 15" 18" 21" 24"	3" 3½" 3½" 3½" 4"	½" ½" ½" ½" ½"
8' 0"	12" 15" 18" 21" 24"	3" 3½" 3½" 3½" 4"	½" ½" ½" ½" ½"
9' 0"	12" 15" 18" 21" 24"	4" 4½" 4½" 4½" 5"	½" ½" ½" ½" ½"
10' 0"	12" 15" 18" 21" 24"	5½" 5½" 6" 6½" 6½"	½" ½" ½" ½" ½"

(b) Halfbalke by luike, luikentbalke, klamaaie, hangende en liggende kniestukke, en stutte moet sterk genoeg en behoorlik geplaas wees.

Size of Hatch Opening.	Size of Beam or Fore-and-aft at Centre.
6' 6" × 7' 0"	5" × 7" Vertical.
7' 0" × 7' 0"	5½" × 7" "
7' 0" × 8' 0"	5½" × 8" "
7' 0" × 9' 0"	6" × 8½" "
8' 0" × 9' 0"	6" × 9" "
8' 0" × 10' 0"	7" × 9½" "
9' 0" × 9' 0"	7" × 9" "
9' 0" × 10' 0"	7" × 10" "
10' 0" × 10' 0"	7" × 10½" "
10' 0" × 11' 0"	7½" × 11" "
10' 0" × 12' 0"	7½" × 12" "

(c) The minimum bearing required at the ends of hatch beams or fore-and-afters is 3 inches.

3. Hatch coamings.

(a) The scantlings of hatch coamings shall not be less than the following:—

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"	½" ½" ½"
4' 0"	12" 15" 18"	3" 3" 3"	½" ½" ½"
5' 0"	12" 15" 18"	3" 3½" 3½"	½" ½" ½"
6' 0"	12" 15" 18" 21" 24"	3" 3½" 3½" 3½" 4"	½" ½" ½" ½" ½"
7' 0"	12" 15" 18" 21" 24"	3" 3½" 3½" 3½" 4"	½" ½" ½" ½" ½"
8' 0"	12" 15" 18" 21" 24"	3" 3½" 3½" 3½" 4"	½" ½" ½" ½" ½"
9' 0"	12" 15" 18" 21" 24"	4" 4½" 4½" 4½" 5"	½" ½" ½" ½" ½"
10' 0"	12" 15" 18" 21" 24"	5½" 5½" 6" 6½" 6½"	½" ½" ½" ½" ½"

(b) Half beams in way of hatches, hatch end beams, carlings, hanging knees, lodging knees, and pillars, shall be of ample strength and suitably arranged.

(Regulasie 187.)

(Regulation 187.)

AANHANGSEL 9.

ANNEX. 9.

STUURKETTINGS EN ANKERKETTINGS VAN BOTE.

STEERING CHAINS AND ANCHOR CHAINS OF BOATS.

Tabel wat die oorspronklike gemiddelde deursnee en die verminderde gemiddelde deursnee wat hernuwing vereis, aangee:—

Table showing original mean diameter and reduced mean diameter requiring renewal:—

Oorspronklike vereiste gemiddelde deursnee, duim.	Verminderde gemiddelde deursnee wat hernuwing vereis.
7/16"	9/32"
3/8"	11/32"
1/2"	13/32"
5/8"	15/32"
3/4"	17/32"
7/8"	19/32"
1"	21/32"
1 1/8"	23/32"
1 1/4"	25/32"
1 1/2"	27/32"
1 3/4"	29/32"
1 7/8"	31/32"
2"	1"
2 1/8"	1 1/8"
2 1/4"	1 1/4"
2 1/2"	1 1/2"
2 3/4"	1 3/4"
3"	1 7/8"
3 1/8"	1 7/8"
3 1/4"	1 7/8"
3 1/2"	1 7/8"
3 3/4"	1 7/8"
4"	1 7/8"
4 1/8"	1 7/8"
4 1/4"	1 7/8"
4 1/2"	1 7/8"
4 3/4"	1 7/8"
5"	1 7/8"
5 1/8"	1 7/8"
5 1/4"	1 7/8"
5 1/2"	1 7/8"
5 3/4"	1 7/8"
6"	1 7/8"
6 1/8"	1 7/8"
6 1/4"	1 7/8"
6 1/2"	1 7/8"
6 3/4"	1 7/8"
7"	1 7/8"
7 1/8"	1 7/8"
7 1/4"	1 7/8"
7 1/2"	1 7/8"
7 3/4"	1 7/8"
8"	1 7/8"
8 1/8"	1 7/8"
8 1/4"	1 7/8"
8 1/2"	1 7/8"
8 3/4"	1 7/8"
9"	1 7/8"
9 1/8"	1 7/8"
9 1/4"	1 7/8"
9 1/2"	1 7/8"
9 3/4"	1 7/8"
10"	1 7/8"
10 1/8"	1 7/8"
10 1/4"	1 7/8"
10 1/2"	1 7/8"
10 3/4"	1 7/8"
11"	1 7/8"
11 1/8"	1 7/8"
11 1/4"	1 7/8"
11 1/2"	1 7/8"
11 3/4"	1 7/8"
12"	1 7/8"
12 1/8"	1 7/8"
12 1/4"	1 7/8"
12 1/2"	1 7/8"
12 3/4"	1 7/8"
13"	1 7/8"
13 1/8"	1 7/8"
13 1/4"	1 7/8"
13 1/2"	1 7/8"
13 3/4"	1 7/8"
14"	1 7/8"
14 1/8"	1 7/8"
14 1/4"	1 7/8"
14 1/2"	1 7/8"
14 3/4"	1 7/8"
15"	1 7/8"
15 1/8"	1 7/8"
15 1/4"	1 7/8"
15 1/2"	1 7/8"
15 3/4"	1 7/8"
16"	1 7/8"
16 1/8"	1 7/8"
16 1/4"	1 7/8"
16 1/2"	1 7/8"
16 3/4"	1 7/8"
17"	1 7/8"
17 1/8"	1 7/8"
17 1/4"	1 7/8"
17 1/2"	1 7/8"
17 3/4"	1 7/8"
18"	1 7/8"
18 1/8"	1 7/8"
18 1/4"	1 7/8"
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