A＝通常山形材、　BP＝球板、　P＝平板、　D＝深サ、　B＝幅

艙口梁ノ深サハ長サノ中央ニ於ケルモノニシテ上部取附材ヨリ梁ノ下緣迄之ヲ測ル縱材ノ深サハ艙口板ノ下面ヨリ縱材ノ下緣迄之ヲ測ル中間ノ長サ及心距ニ對スル寸法ハ插間ニ依リテ之ヲ來ス平板ト定メラレタルトキハ取附材ニ關シテ揭グル寸法ノ二個ノ山形材ヲ梁ノ上部及下部ニ取附クベシ球板ト定メラレタルトキハ取附材ニ關シテ揭グル寸法ノ二個ノ山形材ヲ梁又ハ縱材ノ上部ニ取附クベシ球山形材ト定メラレタルトキハ取附材ニ關シテ揭グル寸法ノ一個ノ山形材ヲ右形材ノ上部ニ取附クベシ山形材ノ定メラレタル兩邊ガ異レル寸法ヲモツナル場合ニ於テハ廣邊ヲ水平タラシムベシ

（註）　長サ三十メートル五〇ヲ超エザル船舶ニ在リテハ平板及山形材ヨリ成ル梁ノ深サハ前記ノ深サノ六十「パーセ」ント」タルコトヲ得球山形材又ハ球板ヨリ成ル梁及鋼製縱材ノ深サハ前記ノ深サノ八十「パーセ」ント」タルコトヲ得平板、球山形材及球板ノ厚サハ七ミリメートル五〇ヲ最小限ノ厚サトシ減少セラレタル深サニ對シ表ニ揭グル厚サト相當スベシ木製縱材ノ深サ及幅ハ舷側縱材ニ關シ表ニ揭グル寸法ノ八十「パーセ」ント」タルコトヲ得但シ中央ノ縱材ノ幅ハ百六十五ミリメートル未滿タルコトヲ得ズ長サ三十メートル五〇ト六十一メートル」ノ中間ノ船舶ニ在リテハ梁及縱材ノ寸法ハ插間法ニ依リ之ヲ決定スベシ

A=Plain angle.　BP=Bulb plate.　P=Plate.　D=Depth.　B=Breadth.

Depths for hatchway beams are at the middle of the length and are measured from the top mounting to the lower edge. Depths for fore-and-afters are measured from the underside of the hatch covers to the lower edge. Sizes for intermediate lengths and spacing are obtained by interpolation. Where plates are specified, two angles, of the size given for mountings, are to be fitted at the upper and at the lower part of the beam. Where bulb plates are specified, two angles, of the size given for mountings are to be fitted at the upper part of the beam or fore-and-after. Where bulb angles are specified, one angle, of the size given for mountings, is to be fitted at the upper part of the section. Where the specified flanges of an angle are of different dimensions, the larger flange is to be horizontal.

* In ships not exceeding 100 feet in length, the depths of beams which are formed of plates and angles may be 60 per cent. of the depths given above; the depths of beams and steel fore-and-afters formed of bulb angle or bulb plate section may be 80 per cent. of the depths given above; the thickness of plates, bulb angles and bulb plates should correspond to the thickness tabulated for the reduced depths with a minimum thickness of .30 inch; the depths and breadths of wood fore-and-afters may be 80 per cent. of those given in the tables for side fore-and-afters, but the centre fore-and-afters must be not less than 6½ inches wide. In ships between 100 feet and 200 feet in length, the sizes of the beams and fore-and-afters are to be determined by linear interpolation.

第十二規則　承金又ハ壺金

艙口梁及縦材ニ對スル承金又ハ壺金ハ少クトモ十二ミリメートル五ノ厚サノ鋼製ノモノタルベク且少クトモ七十五ミリメートルノ支面幅ヲ有スベシ

第十三規則　帶金承

少クトモ六十三ミリメートルノ幅ヲ有スル堅牢ナル帶金承ヲ中心ヨリ中心迄零メートル六一ヲ超エザル間隔ニ於テ取附クベシ端末ノ帶金承ハ艙口ノ各隅ヨリ百五十ミリメートルヲ超エザル個所ニ之ヲ置クベシ

第十四規則　帶金及楔

帶金及楔ハ實效アリ且良好ナル狀態ニ在ルベシ

第十五規則　覆布

乾舷甲板及船樓甲板ノ暴露部ニ於ケル各艙口ニハ良好ナル狀態ニ在リ、完全ニ防水セラレ及十分ナル強サヲ有スル覆布ヲ少クトモ二枚備フベシ其ノ材料ハ黄麻ヲ交ヘザルコトガ保障セラレ且各主管廳ニ依リ定メラレタル標準ノ重量及性質ノモノタルベシ

(欄外標目) 承金又は壺金　帶金承　帶金及び楔　覆布

Rule XII.—*Carriers or Sockets.*

Carriers or sockets for hatchway beams and fore-and-afters are to be of steel at least ½ inch thick, and are to have a width of bearing surface of at least 3 inches.

Rule XIII.—*Cleats.*

Strong cleats at least 2½ inches wide are to be fitted at intervals of not more than 2 feet from centre to centre; the end cleats are to be placed not more than 6 inches from each corner of the hatchway.

Rule XIV.—*Battens and Wedges.*

Battens and wedges are to be efficient and in good condition.

Rule XV.—*Tarpaulins.*

At least two tarpaulins in good condition, thoroughly waterproofed and of ample strength, are to be provided for each hatchway in an exposed position on freeboard and superstructure decks. The material is to be guaranteed free from jute, and of the standard weight and quality laid down by each Administration.

艙口蓋の定著

艙口縁材及び閉鎖設備

第一級閉鎖設備より実効の少い閉鎖設備を設ける船樓内に於ける乾舷甲板の貨物艙口及び他の艙口

第十六規則　艙口蓋ノ定著

乾舷甲板及船樓甲板ノ暴露部ニ於ケル一切ノ艙口ニハ締附ノ爲ノ鐶附螺釘又ハ其ノ他ノ装置ヲ備フベシ

艙口ノ幅ガ該艙口ノ所在個所ニ於ケル甲板ノ幅ノ六十「パーセント」ヲ超エ且縁材ガ高サ六百十ミリメートルタルコトヲ要スルトキハ覆布ヲ帶金ニ依リ締附ケタル後艙口蓋ヲ定著スル爲特別ノ締附装置ヲ備フベシ

第十七規則　第一級閉鎖設備ヨリ實效少キ閉鎖設備ヲ備フル船樓内ノ乾舷甲板ニ於ケル貨物艙口及他ノ艙口

本艙口ノ構造及装置ハ第十八規則ニ規定スル標準ト少クトモ同等ノモノタルベシ

第十八規則　艙口縁材及閉鎖設備

第二級閉鎖設備ヲ備フル船樓内ノ乾舷甲板ニ於ケル貨物艙口、載炭艙口及他ノ艙口ハ高サ少クトモ二百二十九ミリメートルノ縁材ヲ備ヘ且縁材ノ高サ四百五十七

Rule XVI.—*Security of Hatchway Covers.*

At all hatchways in exposed positions on freeboard and superstructure decks ring bolts or other fittings for lashings are to be provided.

Where the breadth of the hatchway exceeds 60 per cent. of the breadth of the deck in way of the hatchway, and the coamings are required to be 24 inches high, fittings for special lashings are to be provided for securing the hatchway covers after the tarpaulins are battened down.

Rule XVII.—*Cargo and other Hatchways in the Freeboard Deck within Superstructures which are fitted with Closing Appliances less efficient than Class 1.*

The construction and fitting of such hatchways are to be at least equivalent to the standards liad down in Rule XVIII.

Rule XVIII.—*Hatchway Coamings and Closing Arrangements.*

Cargo, coaling and other hatchways in the freeboard deck within superstructures which are fitted with Class 2 closing appliances are to have coamings at least 9 inches

ミリメートルノ暴露セル貨物艙口ニ要スルモノト同一ノ實效アル閉鎖設備ヲ備フベシ

閉鎖設備ガ第二級閉鎖設備ヨリ實效少キトキハ右艙口ハ高サ少クトモ四百五十七ミリメートルノ縁材ヲ備ヘ且暴露セル貨物艙口ニ要スルモノト同一ノ實效アル装置及閉鎖設備ヲ備フベシ

第十九規則　乾舷甲板及低船尾樓甲板ノ暴露部ニ於ケル機關室口

本開口ハ之ヲ適當ニ組立テ且十分ナル強サノ鋼製圍壁ニ依リ實效的ニ蔽圍スベシ右圍壁ガ他ノ建設物ニ依リ保護セラレ居ラザルトキハ其ノ強サニ付特ニ考慮スベシ右圍壁ニ於ケル戸ハ鋼製ニシテ、實效的ニ防撓セラレ、常設的ニ取附ケラレ且兩側ヨリ閉鎖定著セラレ得ルモノタルベシ開口ノ敷居ハ乾舷甲板ノ上方少クトモ六百十ミリメートル又低船尾樓甲板ノ上方少クトモ四百五十七ミリメートルタルベシ

乾舷甲板及び低船尾楼甲板の暴露部における機関室口

焚火室口、煙筒及通風筒ノ緣材ハ甲板ノ上方合理的且實行可能ナル限リ高カルベシ焚火室口ニハ適當ノ位置ニ常設的ニ取附ケラレタル堅牢ナル鋼製蓋ヲ備フベシ

in height and closing arrangements as effective as those required for exposed cargo hatchways whose coamings are 18 inches high.

Where the closing appliances are less efficient than Class 2, the hatchways are to have coamings at least 18 inches in height, and are to have fittings and closing arrangements as effective as those required for exposed cargo hatchways.

Rule XIX.—*Machinery Space Openings in Exposed Position on Freeboard and Raised Quarter Decks.*

Such openings are to be properly framed and efficiently enclosed by steel casings of ample strength, and where the casings are not protected by other structures their strength is to be specially considered. Doors in such casings are to be of steel, efficiently stiffened, permanently attached, and capable of being closed and secured from both sides. The sills of openings are to be at least 24 inches above the freeboard deck and at least 18 inches above the raised quarter deck.

Fiddley, funnel, and ventilator coamings are to be as high above the deck as is reasonable and practicable. Fiddley openings are to have strong steel covers perma-

低船尾樓外甲板以外ノ船樓甲板ノ暴露部ニ於ケル機關室口

第一級閉鎖設備より實效の少い設備を備える船樓内の

第二十規則　低船尾樓甲板以外ノ船樓甲板ノ暴露部ニ於ケル機關室口

本開口ハ之ヲ適當ニ組立テ且堅牢ナル鋼製圍壁ニ依リ實效的ニ蔽圍スベシ右圍壁ニ於ケル戸ハ堅牢ニ構造セラレ、常設的ニ取附ケラレ且兩側ヨリ閉鎖定著セラレ得ルモノタルベシ開口ノ敷居ハ船樓甲板ノ上方少クトモ三百八十ミリメートルタルベシ

焚火室口、煙筒及通風筒ノ緣材ハ甲板ノ上方合理的且實行可能ナル限リ高カルベシ焚火室口ニハ適當ノ位置ニ常設的ニ取附ケラレタル堅牢ナル鋼製蓋ヲ備フベシ

第二十一規則　第一級閉鎖設備ヨリ實效少キ閉鎖設備ヲ備フル船樓内ノ乾舷甲板ニ於ケル機關室口

本開口ハ之ヲ適當ニ組立テ且鋼製圍壁ニ依リ實效的ニ蔽圍スベシ右圍壁ニ於ケル戸ハ堅牢ニ構造セラレ、常設的ニ取附ケラレ且定著的ニ閉鎖セラレ得ルモノタルベシ開口ノ敷居ハ船樓ガ第二級閉鎖設備ニ依リ閉鎖セ

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nently attached in their proper positions.

Rule XX.—Machinery Space Openings in Exposed Positions on Superstructure Decks other than Raised Quarter Decks.

Such openings are to be properly framed and efficiently enclosed by strong steel casings. Doors in such cases are to be strongly constructed, permanently attached, and capable of being closed and secured from both sides. The sills of the openings are to be at least 15 inches above superstructure decks.

Fiddley, funnel and ventilator coamings are to be as high above the deck as is reasonable and practicable. Fiddley openings are to have strong steel covers permanently attached in their proper positions.

Rule XXI.—Machinery Space Openings in the Freeboard Deck within Superstructures which are fitted with Closing Appliances less efficient than Class 1.

Such openings are to be properly framed and efficiently enclosed by steel casings. Doors in such casings are to be strongly constructed, permanently attached, and capable of being securely closed. The sills of the openings are to be

乾舷甲板における機関室口

平載炭孔

昇降口

ラルトキハ甲板ノ上方少クトモ二百二十九ミリメートル又ハ閉鎖設備ガ第二級閉鎖設備ヨリ實效少キトキハ甲板ノ上方少クトモ三百八十ミリメートルタルベシ

第二二規則　平載炭孔

平載炭孔ハ之ヲ船樓甲板ニ設クルコトヲ得ベク之ヲ設ケタルトキハ鐵製又ハ鋼製ニシテ且螺込ノ又ハ挿込ノ接合ヲ有スル堅牢ナル構造ノモノタルベシ蓋ガ蝶番ニ依リ定著セラレザルモノナルトキハ常設的ノ取附鎖ヲ備フベシ特殊ノ業務ニ從事スル小形船ニ於ケル平載炭孔ノ位置ハ各指定機關ニ於テ之ヲ定ムベシ

第二三規則　昇降口

乾舷甲板及薇圍セラレタル船樓ノ甲板ノ暴露部ニ於ケル昇降口ハ堅牢ナル構造ノモノタルベシ戸口ノ敷居ハ艙口縁材ニ關シ定メラレタル高サノモノタルベシ（第九規則及第十八規則參照）戸ハ堅牢ニ構造セラレ且兩側ヨリ閉鎖定著セラレ得ルモノタルベシ昇降口ハ船首材ヨリ船舶ノ長サノ四分ノ一以内ニ在ルトキハ鋼製ニシテ且鋼甲板ニ鉸著セラルベシ

at least 9 inches above the deck where the superstructures are closed by Class 2 closing appliances, and at least 15 inches above the deck where the closing appliances are less efficient than Class 2.

Rule XXII.—*Flush Bunker Scuttles.*

Flush bunker scuttles may be fitted in superstructure decks, and where so fitted are to be of iron or steel, of substantial construction, with screw or bayonet joints. Where a scuttle is not secured by hinges, a permanent chain attachment is to be provided. The position of flush bunker scuttles in small ships in special trades is to be dealt with by each Assigning Authority.

Rule XXXIII.—*Companionways.*

Companionways in exposed positions on freeboard decks and on decks of enclosed superstructures are to be of substantial construction. The sills of the doorways are to be of the heights specified for hatchway coamings (see Rules IX and XVIII). The doors are to be strongly constructed and capable of being closed and secured from both sides. Where the companionway is situated within a quarter of the ship's length from the stem, it is to be of steel and

乾舷甲板及び船楼甲板の暴露部における通風筒

第二十四規則　乾舷甲板及船樓甲板ノ暴露部ニ於ケル通風筒

本通風筒ニシテ乾舷甲板ノ下方ノ場所又ハ閉鎖セラルルカ若ハ第一級閉鎖設備ヲ備フル船樓ノ甲板ノ下方ノ場所ニ通ズルモノハ堅牢ニ構造セラレ且徑ノ四倍ノ心距ニ配置セラレタル鋲ニ依リ又ハ之ト同等ノ實效アル装置ニ依リ甲板ニ實效的ニ取附ケラレタル鋼製ノ緣材ヲ備フベシ緣材ノ底部ノ鋼甲板ハ甲板梁ノ間ニ於テ實效的ニ防撓セラルベシ通風筒ノ開口ニハ實效アル閉鎖設備ヲ備フベシ

本通風筒ガ乾舷甲板ニ又ハ船首材ヨリ船舶ノ長サノ四分ノ一以内ニ於ケル船樓甲板ニ在リテ其ノ閉鎖設備ガ一時的性質ノモノナルトキハ緣材ノ高サハ少クトモ九百十五ミリメートルタルベシ船樓甲板ノ他ノ暴露部ニ於テハ緣材ノ高サハ少クトモ七百六十ミリメートルタルベシ通風筒ノ緣材ハ高サ九百十五ミリメートルヲ超ユルトキハ特別ニ支持定著セラルベシ

第二十五規則　空氣管

riveted to the deck plating.

Rule XXIV.—*Ventilators in Exposed Positions on Freeboard and Superstructure Decks.*

Such ventilators to spaces below freeboard decks or decks of superstructures which are intact or fitted with Class 1 closing appliances are to have coamings of steel, substantially constructed, and efficiently connected to the deck by rivets spaced four diameters apart centre to centre, or by equally effective means. The deck plating at the base of the coaming is to be efficiently stiffened between the deck beams. The ventilator openings are to be provided with efficient closing arrangements.

Where such ventilators are situated on the freeboard deck, or on the superstructure deck within a quarter of the ship's length from the stem, and the closing arrangements are of a temporary character, the coamings are to be at least 36 inches in height; in other exposed positions on the superstructure deck they are to be at least 30 inches in height. Where the coaming of any ventilator exceeds 36 inches in height, it is to be specially supported and secured.

Rule XXV.—*Air Pipes.*

空気管

脚荷水槽及他ノ槽ニ通ズル空氣管ガ乾舷甲板又ハ船樓
甲板ノ上方ニ及ブトキハ管ノ暴露部ハ堅牢ナル構造ノ
モノタルベシ甲板ヨリ管ノ開口ニ至ル高サハ乾舷甲板
ノ「ウェル」ニ在リテハ少クトモ九百十五ミリメート
ル、低船尾樓甲板ニ在リテハ七百六十ミリメートル又
ハ他ノ船樓甲板ニ在リテハ四百五十七ミリメートル又
ハ空氣管ノ開口ヲ閉鎖スル爲十分ナル裝置ヲ備フベ
シ

舷ニ於ケル開口
第二十六規則　舷門、載貨門、載炭門等

舷門、載貨門、載炭門等

乾舷甲板ノ下方ニ在ル舷ニ於ケル開口ニハ水密ナル戸
又ハ蓋ヲ取附クベシ右ノ戸又ハ蓋ハ定著設備ヲ有シ十
分ナル強サノモノタルベシ

排水管及び衛生排出管

第二十七規則　排水管及衛生排出管

乾舷甲板ノ下方ニ在ル場所ヨリ舷ヲ貫通スル排出管ニ
ハ船內ニ水ノ浸入スルコトヲ防グ爲實效アリ且近寄リ
得ル裝置ヲ備フベシ各個ノ排出管ニハ乾舷甲板ノ上方
ニ在ル位置ヨリ之ヲ閉鎖シ得ル積極裝置ヲ有スル自働
不還瓣一個ヲ備フルカ又ハ積極閉鎖裝置ヲ有セザル自
働不還瓣二個ヲ備フベシ後ノ場合ニ於テハ上方ノ瓣ヲ
就役狀態ニ於テ檢查ノ爲常ニ近寄リ得ル位置ニ置クコ

Where the air pipes to ballast and other tanks extend
above freeboard or superstructure decks, the exposed parts
of the pipes are to be of substantial construction; the height
from the deck to the opening is to be at least 36 inches
in wells on freeboard decks, 30 inches on raised quarter
decks, and 18 inches on other superstructure decks. Satis-
factory means are to be provided for closing the openings
of the air pipes.

Openings in the Sides of Ships.

Rule XXVI.—*Gangway, Cargo and Coaling Ports, &c.*

Openings in the sides of ships below the freeboard deck
are to be fitted with watertight doors or covers which, with
their securing appliances, are to be of sufficient strength.

Rule XXVII.—*Scuppers and Sanitary Discharge Pipes.*

Discharges led through the ship's sides from spaces
below the freeboard deck are to be fitted with efficient and
accessible means for preventing water from passing inboard.
Each separate discharge may have an automatic non-return
valve with a positive means of closing it from a position
above the freeboard deck, or two automatic non-return
valves without positive means of closing, provided the upper

舷

窗

トヲ要ス積極操作ノ瓣ハ容易ニ近寄リ得ルモノタルベク且瓣ノ開閉ヲ示ス裝置ヲ備フベシ右瓣ニ對シテハ之ガ舷ニ取附ケラルルトキハ鑄鐵ハ許サレザルベシ

指定機關ハ右開口ノ型式及其ノ船内ニ於ケル端ノ位置ニ應ジ薇圍セラレタル船樓内ノ場所ヨリノ排出管ニ關シ類似ノ規定ヲ設クルコトヲ得

排水管ガ第一級閉鎖設備ナキ船樓内ニ設ケラレアルトキハ右排水管ハ乾舷甲板ノ下方ニ不時ニ水ノ浸入スルコトヲ防グ爲實效アル裝置ヲ備フベシ

第二十八規則　舷窗

乾舷甲板ノ下方ニ在ル場所又ハ第一級若ハ第二級閉鎖設備ニ依リ閉鎖セラルル船樓ノ船樓甲板ノ下方ニ在ル場所ノ舷窗ニハ實效的ニ閉鎖セラレ且水密ニ定著セラレ得ル樣適當ノ位置ニ常設的ニ取附ケラレタル實效アル内蓋ヲ備フベシ

尤モ船樓内ニ於ケル右場所ガ下級旅客以外ノ旅客又ハ

valve is situated so that it is always accessible for examination under service conditions. The positive action valve is to be readily accessible and is to be provided with means for showing whether the valve is open or closed. Cast iron is not to be accepted for such valves where attached to the sides of the ship.

Conditional upon the type and the location of the inboard ends of such openings, similar provisions may be prescribed by the Assigning Authority as to discharges from spaces within enclosed superstructures.

Where scuppers are fitted in superstructures not fitted with Class 1 closing appliances they are to have efficient means for preventing the accidental admission of water below the freeboard deck.

Rule XXVIII.—Side Scuttles.

Side scuttles to spaces below the freeboard deck or to spaces below the superstructure deck of superstructures c ossed by Class 1 or Class 2 closing appliances are to be fitted with efficient inside deadlights permanently attached in their proper positions so that they can be effectively closed and secured watertight.

Where, however, such spaces in superstructures are

船員ニ充テラレタルトキハ舷窓ハ船舶就役中何時ニテモ容易ニ近寄リ得ルモノナル限リ之ニ接近シテ配備セル取外シ得ル蓋ヲ備フルコトヲ得

舷窓及蓋ハ堅牢ニシテ承認ヲ受ケタル構造ノモノタルベシ

第二十九規則　保護欄干

乾舷甲板及船樓甲板ノ一切ノ暴露部ニハ實效アル保護欄干又ハ舷墻ヲ備フベシ

第三十規則　放水口

乾舷甲板又ハ船樓甲板ノ露天部ニ於ケル舷墻ガ「ウェル」ヲ形成スルトキハ甲板ヨリ迅速ニ放水シ且排水スル爲十分ナル設備ヲ爲スベシ乾舷甲板及低船尾樓甲板ノ各「ウェル」ニ對スル船舶ノ各舷ニ於ケル最小放水口面積ハ左ノ表ニ掲ゲラルル通トシ其ノ他ノ船樓甲板ノ各「ウェル」ニ對スル最小面積ハ此ノ表ニ掲ゲラルル面積ノ二分ノ一タルベシ「ウェル」ノ長サガLノ十分ノ七ヲ超ユルトキハ右表ハ之ヲ變更スルコトヲ得

保護欄干

放水口

appropriated to passengers other than steerage passengers or to crew, the side scuttles may have portable deadlights stowed adjacent to the side scuttles, provided they are readily accessible at all times on service.

The side scuttles and deadlights are to be of substantial and approved construction.

Rule XXIX.—*Guard Rails.*

Efficient guard rails or bulwarks are to be fitted on all exposed portions of freeboard and superstructure decks.

Rule XXX.—*Freeing Ports.*

Where bulwarks on the weather portions of freeboard or superstructure decks form "wells," ample provision is to be made for rapidly freeing the decks of water and for draining them. The minimum freeing port area on each side of the ship for each well on the freeboard deck and on the raised quarter-deck is to be that given by the following scale; the minimum area for each well on any other superstructure deck is to be one-half the area given by the scale. Where the length of the well exceeds .7 L, the scale may be modified.

放水口面積ノ表

SCALE of Freeing Port Area.

「ウェル」ニ於ケル舷墻ノメートルニ依ル長サ	各舷ニ於ケル平方デシメートルニ依ル放水口面積	Length of Bulwarks in "Well" in Feet.	Freeing Port Area on each side in Square Feet.
4·57	74·3	15	8.0
6·10	79·0	20	8.5
7·62	83·6	25	9.0
9·14	88·3	30	9.5
10·67	92·9	35	10.0
12·19	97·5	40	10.5
13·72	102·2	45	11.0
15·24	106·8	50	11.5
16·76	111·5	55	12.0
18·29	116·1	60	12.5
19·81	120·8	65	13.0
19·81 ヲ超ユルトキ	舷墻ノ長サ1·52メートルヲ増ス毎ニ9·3平方デシメートル	Above 65	1 square foot for each additional 5 feet length of bulwark.

放水口ノ下縁ハ實行可能ナル限リ甲板ニ近ク且成ルベク舷縁材ノ上縁ヨリ高カラザルベシ要求セラレタル放水口面積ノ三分ノ二ハ船舶ノ中央寄リノ「ウェル」ノ半部ニ之ヲ設クベシ標準ヨリモ小ナル舷弧高ヲ有スル船舶ニ在リテハ放水口面積ハ之ヲ適當ニ增加スベシ

The lower edges of the freeing ports are to be as near the deck as practicable and preferably not higher than the upper edge of the gunwale bar. Two-thirds of the freeing port area required is to be provided in the midship half of the well. In ships with less than the standard sheer the freeing port area is to be suitably increased.

舷墻ニ於ケル右ノ一切ノ開口ハ約二十三センチメートルノ間隔ニ配置セラレタル柵又ハ棒ニ依リ之ヲ保護スベシ扉ガ放水口ニ取附ケラルルトキハ閉塞ヲ防グ爲十分ナル間隙ヲ設クベシ蝶番ハ黄銅製ノ軸針ヲ備フベシ

第三十一規則　船員ノ保護

船員室區域ニ出入スル際船員ヲ保護スル爲通路、救命索又ハ其ノ他ノ十分ナル裝置ヲ備フベシ平甲板汽船ニ於ケル船員室用甲板室ノ强サハ船樓隔壁ニ關シ要求セラルルモノト同等タルベシ

第三編　汽船ニ對スル滿載吃水線

第三十二規則　長サ（L）

規則及乾舷表ニ用フル長サハ船首材ノ前面ヨリ舵柱ノ後面迄ノ夏期滿載吃水線ニ於ケルメートル二依ル長サトス舵柱ナキトキハ長サハ船首材ノ前面ヨリ舵頭ノ中心線迄之ヲ測ル巡洋艦型船尾ヲ有スル船舶ニ關シテハ長サハ夏期滿載吃水線ニ於ケル全長ノ九十六「パーセント」ヲ採ルベク又船首材ノ前面ヨリ舵頭ノ中心線迄ノ長サノ方ガ大ナルトキハ之ヲ採ルベシ

All such openings in the bulwarks are to be protected by rails or bars spaced about 9 inches apart. If shutters are fitted to freeing ports, ample clearance is to be provided to prevent jamming. Hinges are to have brass pins.

Rule XXXI.—*Protection of Crew.*

Gangways, lifelines or other satisfactory means are to be provided for the protection of the crew in getting to and from their quarters. The strength of houses for the accommodation of crew on flush deck steamers is to be equivalent to that required for superstructure bulkheads.

Part III.—Load Line for Steamers.

Rule XXXII.—*Length* (L).

The length used with the Rules and Freeboard Table is the length in feet on the summer load water-line from the foreside of the stem to the afterside of the rudder post. Where there is no rudder post, the length is measured from the foreside of the stem to the axis of the rudder stock. For ships with cruiser sterns, the length is to be taken as 96 per cent. of the total length on the designed summer load water-line or as the length from the fore side

第三十三規則　幅（Ｂ）

幅ハ鐵船又ハ鋼船ニ在リテハ肋骨ノ外面ヨリ外面迄又ハ木船又ハ木鐵交造船ニ在リテハ外板ノ外面ヨリ外面迄船舶ノ中央ニ於テ測リタルメートルニ依ル最大幅トス

第三十四規則　型深

型深ハ龍骨ノ上面ヨリ舷ニ於ケル乾舷甲板梁ノ上面迄船舶ノ中央ニ於テ測リタルメートルニ依ル垂直距離トス木船及木鐵交造船ニ在リテハ右距離ハ龍骨ノ溝ノ下緣ヨリ之ヲ測ル船體中央橫截面ノ下部ノ形狀ガ凹形ノモノナルトキ又ハ厚キ龍骨翼板ガ取付ケラレタルトキハ型深ハ底面ノ扁平部ノ內方ヘノ延長線ガ龍骨ノ側面ニ交叉スル點ヨリ之ヲ測ル

第三十五規則　乾舷ニ關スル深サ（Ｄ）

乾舷表ニ用フル深サハ型深ニ梁上側板ノ厚サヲ加ヘタルモノトシ又ハ

$$\dfrac{T(L-S)}{L}$$

ノ方ガ大ナルトキハ之ヲ加ヘタルモノトス

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of the stem to the axis of the rudder stock if that be the greater.

Rule XXXIII.—Breadth (B).

The breadth is the maximum breadth in feet amidships to the moulded line of the frame in iron or steel ships, and to the outside of the planking in wood or composite ships.

Rule XXXIV.—Moulded Depth.

The moulded depth is the vertical distance in feet, measured amidships, from the top to the keel to the top of the freeboard deck beam at side. In wood and composite ships the distance is measured from the lower edge of the keel rabbet. Where the form at the lower part of the midship section is of a hollow character, or where thick garboards are fitted, the depth is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel.

Rule XXXV.—Depth for Freeboard. (D).

The depth used with the Freeboard Table is the moulded depth plus the thickness of stringer plate, or plus $\dfrac{T(L-S)}{L}$ if that be greater, where—

Ｔハ甲板口以外ノ暴露甲板ノ平均ノ厚サトス

Ｓハ第四十規則ニ定ムル船樓ノ全長トス

Rule XL.

上部舷ガ特殊ノ形狀ノモノナルトキハＤハ垂直ナル上部舷、標準ノ梁矢及實際ノ船體中央横截面ノ上部截面積ニ等シキ上部截面積ヲ備フル船體中央横截面ノ深サトス上部舷ニ階段又ハ屈折アルトキ（例ヘバ「タレット」甲板船ニ於ケルガ如キ）ハ階段又ハ屈折ヨリ上方ノ面積ノ七十「パーセント」ハ之ヲ同値横截面ノ決定ニ用フル截面積ニ算入ス

船舶ノ中央ニ於テ少クトモＬノ十分ノ六ニ亙ル蔽圍セラレタル船樓ヲ有セザル船舶、全通「トランク」ヲ有セザル船舶又ハ閉鎖セラレル部分船樓ト「トランク」トノ連續ガ船首尾ニ全通セザル船舶ニ在リテＤガＬノ十五分ノ一ヨリ小ナルトキハ乾舷表ニ用フル深サハＬノ十五分ノ一ヨリ小ナルモノヲ採ルベカラズ

第三十六規則　肥瘠係數（c）

乾舷表ニ用フル肥瘠係數ハ左ノ算式ニ依リ之ヲ求ム

$$c = \frac{\Delta}{1.025\ L.\ B.\ d_1}$$

Δハ型深ノ八十五「パーセント」ニ相當スル平均型

肥瘠係數
（c）

T is the mean thickness of the exposed deck clear of deck openings, and

S is the total length of superstructures as defined in

Rule XL.

Where the topsides are of unusual form, D is the depth of a midship section having vertical topsides, standard round of beam and area of topside section equal to that in the actual midship section. Where there is a step or break in the topsides (*e. g,* as in the Turret Deck ship) 70 per cent. of the area above the step or break is included in the area used to determine the equivalent section.

In a ship without an enclosed superstructure covering at least .6 L amidships, without a complete trunk or without a combination of intact partial superstructures and trunk extending all fore and aft, where D is less than $\frac{L}{15}$, the depth used with the Table is not to be taken as less than $\frac{L}{15}$.

Rule XXXVI.—*Coefficient of Fineness.* (c).

The coefficient of fineness used with the Freeboard Table is given by—

$$c = \frac{35\Delta}{L.\ B.\ d_1},$$

where Δ is the ship's moulded displacement in tons (exclud-

吃水 d_1 ニ於ケル船舶ノトンニ依ル型排水量（船尾管膨出部ヲ除外ス）トス

係数 c ハ〇・六八ヨリ小ナルモノヲ採ルベカラズ

強　さ

指定機關ハ乾舷ノ指定ヲ受ケル船舶ノ構造上ノ強サノ十分ナルコトヲ確ムベシ

第三十七規則　強　サ

主管廳ニ依リ承認セラレタル船級協會ノ規則ノ最高標準ニ適合スル船舶ハ規則ニ依リ許サルル最小乾舷ニ對シ十分ナル強サヲ有スルモノト看做サルベシ

主管廳ニ依リ承認セラレタル船級協會ノ規則ノ最高標準ニ適合セザル船舶ハ指定機關ニ依リ決定セラルベキ増加乾舷ノ指定ヲ受クベク且指針トシテ左ノ強力抵抗率ヲ定ム

材料　強力抵抗率ハ建設物ガ平爐法（酸性又ハ鹽基性）ニ依リ製造セラレ且毎平方ミリメートル四十一キログラム乃至五十キログラムノ抗張力及二百三十ミリメートルノ長サニ於テ少クトモ十六「パーセント」ノ伸長ヲ有スル軟鋼ヲ以テ構造セラルルモノトノ前提ヲ基礎トス

強力甲板　強力甲板ハ船舶ノ中央ニ於テ長サノ二分ノ

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ing bossing) at a mean moulded draught d_1 which is 85 per cent. of the moulded depth.

The coefficient c is not to be taken as less than .68.

Rule XXXVII.—*Strength.*

The Assigning Authority is to be satisfied with the structural strength of ships to which freeboards are assigned.

Ships which comply with the highest standard of the rules of a Classification Society recognised by the Administration, shall be regarded as having sufficient strength for the minimum freeboard allowed under the Rules.

Ships which do not comply with the highest standard of the rules of a Classification Society recognised by the Administration, shall be assigned such increased freeboards as shall be determined by the Assigning Authority, and for guidance the following strength moduli are formulated:

Material.—The strength moduli are based on the assumption that the structure is built of mild steel, manufactured by the open hearth process (acid or basic), and having a tensile strength of 26 to 32 tons per square inch, and an elongation of at least 16 per cent. on a length of 8 inches.

Strength Deck.—The strength deck is the uppermost

一ニ互リ縦通桁ト一體ヲ爲ス最上層甲板トス

強力甲板迄ノ深サ（Ds）　強力甲板迄ノ深サハ龍骨ノ上面ヨリ舷ニ於ケル強力甲板梁ノ上面迄ノ船舶ノ中央ニ於ケルメートルニ依ル垂直距離トス

吃水（d）　吃水ハ龍骨ノ上面ヨリ圓標ノ中心迄ノ船舶ノ中央ニ於ケルメートルニ依ル垂直距離トス

縦抵抗率　縦抵抗率 $\frac{I}{y}$ ハ中性軸ニ對スル船體中央横截面ノ惰率 I ヲ甲板ロノ所在個所ニ於テ鋲孔ニ對スル控除ヲ爲スコトナク計算シ之ヲ中性軸ヨリ舷ニ於ケル強力甲板梁ノ上面迄ニ測リタル距離 y ニテ除シタルモノトス　面積ハ平方ミリメートルニ依リ又距離ハメートルニ依リ測ル

強力甲板ノ下方ニ於テハ甲板下ノ桁中専ラ支持ノ爲ニ要スル部分以外ノ一切ノ連續縦通材ヲ算入ス強力甲板ノ上方ニ於テハ舷緣山形材及舷側厚板ノ延長部ノミヲ算入スベキ縦通材トス

實效アル材料ニ對スル所要ノ縦抵抗率ハ f.d.B ニ依リ之ヲ表ハスf ハ左ノ表ヨリ求メラルル係數トス

deck which is incorporated into and forms an integral part of the longitudinal girder within the half-length amidships.

Depth to Strength Deck (D_s).—The depth to strength deck is the vertical distance in feet amidships from the top of the keel to the top of the strength deck beam at side.

Draught (d).—The draught is the vertical distance in feet amidships from the top of the keel to the centre of the disc.

Longitudinal Modulus.—The longitudinal modulus $\frac{I}{y}$ is the moment of inertia I of the midship section about the neutral axis divided by the distance y measured from the neutral axis to the top of the strength deck beam at side, calculated in way of openings but without deductions for rivet holes. Areas are measured in square inches and distances in feet.

Below the strength deck, all continuous longitudinal members other than such parts of under deck girders as are required entirely for supporting purposes, are included. Above the strength deck, the gunwale angle bar and the extension of the sheerstrake are the only members included.

The required longitudinal modulus for effective material is expressed by f.d.B., where f is the factor obtained from the following table :—

L	f	L	f
30·48	3810	109·73	19896
36·58	4233	115·82	21801
42·67	4974	121·92	23705
48·77	5715	128·02	25717
54·86	6667	134·11	27728
60·96	7620	140·21	29951
67·06	8890	146·30	32067
73·15	10160	152·40	34396
79·25	11535	158·50	36725
85·34	13123	164·59	39053
91·44	14710	170·69	41487
97·54	16298	176·78	44027
103·63	18097	182·88	46567

L	f	L	f
100	1·80	360	9·40
120	2·00	380	10·30
140	2·35	400	11·20
160	2·70	420	12·15
180	3·15	440	13·10
200	3·60	460	14·15
220	4·20	480	15·15
240	4·80	500	16·25
260	5·45	520	17·35
280	6·20	540	18·45
300	6·95	560	19·60
320	7·70	580	20·80
340	8·55	600	22·00

中間ノ長サニ對シテハfノ値ハ挿間法ニ依リ之ヲ決定ス

右ノ算式ハLガ百八十一メートル八八ヲ超エズ、$\dfrac{L}{10}$ +1.52若ハ $\dfrac{L}{10}$ +6.10又ハ其ノ中間ニ在リ且 $\dfrac{L}{D_s}$ ガ一〇若ハ一三・五又ハ其ノ中間ニ在ルトキニ適用セラル

肋骨　肋骨抵抗率ニ付テハ肋骨ハ各相等シキ大サ及厚サノ正肋材及副肋材ヲ以テ構成セラレタルモノト看做

For intermediate lengths, the value of f is determined by interpolation.

This formula applies where L does not exceed 600 feet; B is between $\dfrac{L}{10}$+5 and $\dfrac{L}{10}$+20, both inclusive, and $\dfrac{L}{D_s}$ is between 10 and 13.5, both inclusive.

Frame.—For the purpose of the frame modulus, the frame is regarded as composed of a frame angle and a

ス

肋骨抵抗率　最下層梁ノ下方ニ於テ船體中央部肋骨ノ抵抗率 $\frac{I}{y}$ ハ中性軸ニ對スル肋骨横截面ノ惰率Iヲ鋲孔及螺釘孔ニ對スル控除ヲ爲スコトナク計算シ之ヲ中性軸ヨリ肋骨横截面ノ端迄測リタル距離yニテ除シタルモノトス抵抗率ハセンチメートル單位ニ依リ之ヲ測ル

所要ノ肋骨抵抗率ハ $\dfrac{s(d-t)(f_1+f_2)}{1000}$ ニ依リ之ヲ表ハス

sハメートルニ依ル肋骨心距トス

tハ船舶ノ中央ニ於テ龍骨ノ上面ヨリ舷ニ於ケル内底板ノ上面ト肋骨根部ニ附スル肘板ノ上端トノ中央點迄測リタルメートルニ依ル垂直距離トス（第二圖參照）二重底ナキトキハtハ中心線ニ於ケル肋板ノ上端ト舷ニ於ケル肋板ノ上端トノ中央點迄之ヲ測ル

f_1 ハHニ應ズル係數トシHハ二重底ヲ備フル船舶ニ在リテハ舷ニ於ケル最下層梁ノ梁肘板ノ中央ヨリ舷ニ於ケル内底板ノ上面ト肋骨根部ニ附スル肘板ノ上端トノ中央點迄ノメートルニ依ル垂直距離トス（第二圖參照）二重底ナキトキハHハ中心線ニ於ケル肋板ノ上端ト舷ニ於ケル肋板ノ上端トノ中央點迄之ヲ

reverse angle each of the same size and thickness.

Frame Modulus.—The modulus $\frac{I}{y}$ of the midship frame below the lowest tier of beams is the moment of inertia I of the frame section about the neutral axis divided by the distance y measured from the neutral axis to the extremity of the frame section, calculated without deduction for rivet and bolt holes. The modulus is measured in inch units.

The required frame modulus is expressed by

$$\frac{s(d-t)(f_1+f_2)}{1,000}$$ where—

s is the frame spacing in inches.

t is the vertical distance in feet measured at amidships from the top of the keel to a point midway between the top of the inner bottom at side and the top of the heel bracket (see Figure 2); where there is no double bottom, t is measured to a point midway between the top of the floor at centre and the top of the floor at side.

f_1 is a coefficient depending on H, which, in ships fitted with double bottoms, is the vertical distance in feet from the middle of the beam bracket of the lowest tier of beams at side to a point midway between the top of the inner bottom at side and the top of the heel bracket (see Figure 2). Where there is no double bottom, H is measured to a