

SUPPLY TO SHIPS OF CHARTS, NAUTICAL DOCUMENTS AND INSTRUMENTS

General information concerning the use of nautical documents and instruments sometimes gives the basic regulations under which supplies are made to and obligations imposed on ship-owners to provide vessels with charts, sailing directions and instruments necessary for navigation.

The rules laid down in accordance with which the supplies for ships are made, appear to differ very greatly in the various countries and it appears to the International Hydrographic Bureau that it might be useful for its studies to collate on this subject information with reference to the Rules formulated by the various countries in their laws.

For this purpose, the Directing Committee has requested the Hydrographic Offices of the various countries to obtain for it, so far as possible, the following information :-

1°) The text of the law now in existence in their country which lays down the supply and the keeping up to date of nautical charts and documents (Sailing Directions, Lists of Lights, Notices to Mariners, Signal Codes, etc.) on board Merchant vessels of various categories.

2°) The same for the supply, testing and replacement of navigational instruments (compasses, sextants, chronometers, wireless appliances, sounding appliances, etc.).

3°) Which is the authority, or which is the Office, which sees to the carrying out of the above-mentioned regulations and carries out inspections?

In reply to these questions, the International Hydrographic Bureau has received a fairly large amount of information supplied by the Hydrographic Offices of its Members.

An extract of the regulations in force in Italy was published on page 87 of the *Hydrographic Bulletin* of April, 1929.

The standard documents concerning the question for Portugal and the Netherlands were mentioned in *Hydrographic Bulletin* N° 5 of May, 1929, page 116, and N° 6 of June, 1929, page 114.

The International Hydrographic Bureau had intended to publish this information in-extenso in the *Hydrographic Review* for November, 1929, but the abundance of matter received has compelled it to spread the publication of the complete data over several numbers of the Review.

The publication of extracts from the replies forwarded to the International Hydrographic Bureau is begun below. This first series includes the regulations in force in Great Britain, Denmark, Italy and France.

GREAT BRITAIN.

SUPPLY OF CHARTS, NOTICES TO MARINERS,
COMPASSES AND OTHER EQUIPMENT TO BRITISH MERCHANT SHIPS.

(Extracts from a memorandum prepared by the BOARD OF TRADE)

1. *Charts, Sailing Directions, Lists of Lights, Notices to Mariners, Signal Codes, etc.*

There is no Statute Law or Regulation in Great Britain and Northern Ireland laying down that these should be carried on board ship. It is, however, a Common Law obligation on the Master of a British Merchant ship to supply himself with proper charts, sailing directions, notices to mariners and other similar aids to navigation, and the absence of such aids would be taken into account in any investigation or inquiry arising out of a casualty at sea. There is a similar obligation as regards such matters as the provision of compasses, sounding appliances, chronometers, and sextants in cargo ships. A signal manual is carried on every British foreign-going ship of over 100 tons net.

2. *Compasses.*

The Regulations relating to the supply and maintenance of ships' compasses in passenger steamers are contained in paragraphs 432 to 434 of the Instructions as to the Survey of Passenger Steamships 1928, (*see* : Appendix A), and are made under Sections 285 and 290 of the Merchant Shipping Act, 1894, (*see* : Appendix B). Regulations relating to compasses in ships' lifeboats are contained in paragraphs 136 to 139 of the "Instructions as to the Survey of Lifesaving Appliances, 1926", (*see* : Appendix C). These Regulations are at present under revision.

3. *Sounding Appliances.*

Regulations as to lead-lines in passenger steamers are contained in paragraph 436 of the "Instructions as to the Survey of Passenger Steamships, 1926", (*see* : Appendix A).

4. *Chronometers.*

In accordance with Section 290 of the Merchant Shipping Act, 1894, (*see* : Appendix B), every emigrant ship :

- (1) if proceeding to any place north of the Equator must be provided with at least one chronometer, and
- (2) if proceeding to any place south of the Equator must be provided with at least two chronometers.

5. *Sextants.*

There are no Regulations relating to the provision of sextants, but see Paragraph (1) above.

6. *Wireless Appliances.*

The Regulations as to ships' wireless installations are contained in the Merchant Shipping (Wireless Telegraphy) Act 1919 (Chapter 38) and Statutory Rules and Orders 1927, N^o 529. (*)

The inspection of the apparatus is carried out by the Board's Surveyors and the Post Office Wireless Inspectors.

Regulations relating to the provision and maintenance of wireless installations in ships' lifeboats are contained in the "Instructions as to the Survey of Life-Saving Appliances, 1926", (*) and are made under Sections 427 to 431 of the Merchant Shipping Act, 1894. (*)

(*) *Not reproduced here.*

APPENDIX A.

EXTRACTS FROM INSTRUCTIONS AS TO THE SURVEY OF PASSENGER STEAMSHIPS.

PART V. — SURVEY OF EQUIPMENTS.

(excluding Rules as to Life-saving Appliances and Instructions as to the Survey of Lights and Sound Signals which are published separately).

432. *Compasses.*

Every foreign-going steel, iron, or compositebuilt passenger steamship should be provided with at least three good compasses complete in or on binnacles. One of them should be a standard compass fitted with the means for taking accurate bearings, and a table of errors for this compass should be furnished by a competent compass adjuster.

Home Trade ("St. 2") and Excursion ("St. 3") steamships must be provided with at least one standard and one steering compass properly adjusted and vessels plying in partially smooth water ("St. 4") limits are to be provided with at least one properly adjusted compass.

Paragraph 433 of these instructions applies to the standard compass in common with the others.

433. *Adjustment of Compasses in New Ships.*

The compasses of every sea-going passenger steamship must be properly adjusted from time to time to the satisfaction of the Surveyor, and according to the following regulations :-

On the first survey of a new steamship, whether built of steel, iron, or wood, the Surveyor shall require the compasses to be properly adjusted or verified by a person selected by the shipowner as competent to adjust the compasses of ships. The certificate of such a person, to the effect that the compasses of the ship, if a steel or iron ship are properly adjusted and a table of errors furnished, or, if a wooden ship, are properly verified and a table of errors furnished, should be handed by the owners to the Surveyor, before the latter gives his declaration, and the Surveyor should subsequently return it to the owners with his declaration for transmission to the Board of Trade. (*See, however, paragraph 435.*)

In ships fitted with electric light and power, as disturbing effects are likely to arise from electric circuits which may pass near the compasses, it is necessary that the adjustments should be made both when the dynamo is at rest and when it is running, and the various electric circuits are on. The Surveyor should in all such instances require the certificate of adjustment to be in the following form :

"This is to certify that the compasses of the iron (steel) steamship.....
O. N.....have been adjusted for magnetic deviation, and are now in perfect order. Tables showing the effect of such deviation have this day been handed to the Master. The deviations have been ascertained on the various courses both with the dynamo stopped, and with it running at full speed, with electric current "on" and "off" all circuits in the vicinity of the compasses.

"The deviations so found are practically identical under both conditions, and are in accordance with the tables furnished this day to the Master."

"Dated at.....this.....day of.....19.....

(SIGNATURE).

The Surveyor should satisfy himself as to the proficiency of the person whose signature is attached to the adjustment certificate.

In the case of steel and iron ships which are submitted for survey after lying idle for a long time, or after having undergone repairs or alterations involving the removal or addition of any plates, beams, etc., from or to the hull of the ship, or the boilers, funnel, mast, &c., a certificate of adjustment is to be attached to the declaration.

Apart from the adjustment of compasses in the circumstances mentioned on the foregoing paragraph, all compasses should be occasionally adjusted, but this is less essential if, when ships have been in service for a long period, the Surveyor is satisfied that the Compass Deviation Book has been kept up-to-date, and if a comparison extending over two or three voyages shows that there has been no marked change in the deviation.

434. Master's and Mate's Compass Certificate.

In the case of steel or iron ship which has not been lying idle for a long time, nor undergone repairs or alterations involving the removal or addition of any plates, beams, &c., from or to the hull, boiler, funnel, masts, &c., the Surveyor should, before he grants his declaration, obtain a certificate signed by the master and mate who are going to make the next voyage in the ship to the effect that the compasses are to their satisfaction, and that correct deviation cards have been supplied. This certificate should be attested by the owners and the wording should be as shown on form Surveys 23.

If, however, either the master or mate who is to make the next voyage in the ship does not sign a certificate of this kind, or if the owners decline to attest it, the Surveyor must require the compasses to be readjusted, and must transmit a certificate from an adjuster.

435. Delay in obtaining Compass Certificate.

If the master of a ship has not been able to procure a certificate of the adjustment of the compasses, and the omission does not appear to be due to any negligence or fault of the master or owner, the Surveyor may issue the declaration without it. Similarly, if there is a delay in obtaining the certificate of the master and mate required by paragraph 434, and there is no reason to believe that they will refuse to sign this certificate, or that the owners will decline to attest it, the Surveyor may issue the declaration without it. In either case, however, the fact should be noted in the appropriate space on the declaration and the Surveyor should specify which of the two certificates it is that is required. The Board, upon receipt of the declaration from the owners, will instruct the Superintendent of the Mercantile Marine Office to whom the passenger certificates are forwarded, to withhold them until the necessary compass certificate is produced. In such a case the Superintendent will subsequently forward the compass certificate to the Surveyors for their information.

436. Lead-Lines.

A deep sea lead-line of at least 120 fathoms, a lead of at least 28 lbs. weight, and a suitable reel, together with not less than two hand lead-lines of at least 25 fathoms, and leads of at least 7 lbs., should be supplied to all foreign-going passenger steamships. In home-trade steamships ("St. 2" and "St. 3") two hand lead-lines of 25 fathoms each and leads of at least 7 lbs. must be demanded. These are regarded as the minimum requirements.

For a declaration extending over the full period allowed by the Merchant Shipping Acts, double the above number of lines and leads should be provided. Where, however, an efficient sounding machine is provided on a ship, one of the deep sea leads and lines required by the instructions may be dispensed with; and if a second drum and extra 300 fathoms of wire are fitted, it is unnecessary to require the provision of any deep-sea leads or lines. The hand leads and lines will be required in all cases.

The Surveyor should see that the lead-lines are properly marked. The following marks are those usually adopted :-

At	2 fathoms	a piece	of leather split in two strips.
»	3	»	» in three strips.
»	5	»	white bunting.
»	7	»	red bunting.
»	10	»	leather with a hole.
»	13	»	blue bunting.
»	15	»	white bunting.
»	17	»	red bunting.
»	20	»	a strand with two knots tied in it.

It is always best, however, to have the lines fitted with calico for white marks, bunting for red marks, and serge for blue marks, because it is possible to distinguish these by the feel in the dark.

APPENDIX B.

EXTRACTS FROM MERCHANT SHIPPING ACT, 1894.

GENERAL EQUIPMENT OF PASSENGER STEAMERS.

Equipment of passenger steamers with compasses, and safety appliances.

285. (1) A sea-going passenger steamer shall have her compasses properly adjusted from time to time, to the satisfaction of the shipwright surveyor and according to such regulations as may be issued by the Board of Trade.

(5) If a passenger steamer plies or goes to sea from a port in the United Kingdom without being equipped as required by this section, then, for each matter in which default is made, the owner (if in fault) shall be liable to a fine not exceeding one hundred pounds, and the master (if in fault) shall be liable to a fine not exceeding fifty pounds.

EQUIPMENTS.

Equipment with compasses, chronometers, etc.

290. (1) Every emigrant ship shall, in addition to any other requirement under this Act, be provided with the following articles, namely :-

- a) with at least three steering compasses and one azimuth compass; and
- b) if proceeding to any place north of the Equator with at least one chronometer; and
- c) if proceeding to any place south of the Equator with at least two chronometers;

(2) If any requirement of this section is not complied with in the case of any emigrant ship, the master of that ship shall for each offence be liable to a fine not exceeding fifty pounds.

APPENDIX C.

EXTRACTS FROM

INSTRUCTIONS AS TO THE SURVEY OF LIFE SAVING APPLIANCES 1926. (*)

136. *Compasses.*

Subject to the provisions of paragraph 138 of these Instructions, no compass may be passed under General Rule 16 (2) unless it complies with the following specification :-

- 1° The compass must be of the "liquid" type. The liquid must be a mixture consisting of a minimum of two parts of unpotable methylated spirit and three parts of distilled water.
- 2° The magnet must have ample directive force. In the United Kingdom a period of 18 to 22 seconds after a deflection of 40° at a temperature of about 60° F. would be satisfactory. (**)

(*) *These Regulations are at present under revision.*

(**) *Note. — The "period" is the time of a complete oscillation of the card after deflection, i. e., after a deflection of 40°, a swing past the position of rest and back again to the side to which it was originally deflected.*

- 3° The weight of the card when submerged in liquid should be between 4 and 6 grammes on the pivot.
- 4° The card must be not less than 4 inches in diameter and must have a clearance from the bowl of at least 1/4 inch. It should be marked to half points, the eight principal points being distinctively marked.
- 5° The centre must be of sapphire or equally hard jewel. The jewel should also be removable from the float.
- 6° The pivot must be of iridium or equally suitable hard material.
- 7° The arrangements made to allow for the expansion and contraction of the liquid must be efficient.
- 8° The bowl must be weighted at the bottom and fitted with gimbals giving fore and aft and thwartship action, and must be placed in a binnacle or box of suitable strength and of non-magnetic material. The compass must be efficiently lit by an oil lamp capable of burning 10 hours.
- 9° The materials and workmanship must be good throughout and the compass capable of remaining efficient under sea-going conditions.
- 10° The maker's or assembler's name and address must be shown on the card or float. The name of the dealer may also be shown if desired.

137. *Reduced number of Compasses allowed on certain North Atlantic Passengers Ships.*

In a ship which carries passengers in the North Atlantic and is equipped with Wireless Telegraphy, compasses need only be provided in four of the rowing boats and every motor boat, but these boats must be marked so as to distinguish them from other boats.

138. *Existing Compasses.*

Any compasses which have previously been passed and are still in good conditions may continue to be accepted; but on and after 1st. September, 1926, all new compasses and all compasses fitted in boats for new ships, or in new boats for existing ships, must comply with paragraph 136.

139. *Testing Compasses.*

Compasses should be periodically tested as they receive distinctly hard usage, and experience has shown that it is essential that they should be overhauled and repaired, where necessary, at specified intervals, if they are to be kept in reasonably efficient condition. The Director, Admiralty Compass Observatory, is prepared to test compasses and to advise on technical points. Application should be made to the Director, Admiralty Compass Observatory, Langley, Bucks.

DENMARK.

The regulations concerning the supply and checking of Nautical Documents and Instruments supplied to ships in Denmark are contained in the "Notification containing detailed Regulations as to the Build and Equipment etc... of the Ships and Vessels coming within the Law of Survey of Steam Ships and as to the Government Survey of such Ships and Vessels", published in 1912 by J.-H. SCHULTZ, Copenhagen.

This Booklet contains the detailed regulations in accordance with Law N^o 16 of 13th February, 1903 ("Law on the Survey of Steam Ships"), amended by Law N^o 2 of 3rd July, 1911.

Extracts from the different articles of the regulations which apply to the various categories of vessels are given below.

CHAPTER 3. — PASSENGER SHIPS.*A) Decked Passenger ships.***§ 24.***Compasses and examinations of deviation.*

The ship shall be provided with at least one compass besides the standard compass. The compasses shall from time to time be examined as to their deviation, which as regards the standard compass in vessels beyond the limited trade is to be entered in the log book (cf. § 35 of the Merchant Shipping Law) or in a particular book of deviations according to the rules thereabout given in Chapter 8, Letter A.

The standard compass shall be placed as favourably as possible as regards magnetic influences in the ship; it should therefore be as far away as local circumstances permit from any iron, especially moveable or portable irons, see also Chapter 7, § 146.

All compasses to be good, accurate instruments, cf. Chapter 8, Letter B. In iron vessels, new or of new procuring of above 20 tons, also after rebuilding or thorough repairs of such vessels, the deviation of the compasses shall be examined by a reliable and competent person, and the deviation shall be kept within reasonable bounds by means of suitable compensators. This examination to be repeated at least once every year.

The above mentioned examinations may be made by the master of the ship (or by the mate) if he be sufficiently competent as to these matters. For the rest the deviation of the compasses shall be now and then controlled by the master of the ship; such controlling will especially have to be undertaken where the ship has taken in a cargo that may affect the compasses.

§ 25.*Appliances and spare gear for safe navigation. Charts, etc... Notices to Mariners.*

The ship shall be provided with all other appliances, sparegear and other articles necessary for safe navigation, in proportion to size and description of the vessel and the trade intended,.....

Seagoing ships and decked vessels always to be provided, amongst appliances necessary for safe navigation, with lead and means of shaping a course, with the necessary charts, light-lists and the like, as also with the officially published notices to mariners or a copy of the same, authorized by the Ministry of Commerce and Shipping. It is besides incumbent on the master of the ship to see that charts etc... as far as possible are rectified up-to-date, due regard being had to the trade the ship is intended for.

Ships beyond limited trade shall be provided with at least one spare set of side-lights and masthead lights, cf. Chapter 8, Letter B, moreover with 45 kilos of vegetable or animal oil for wave-subduing, a national and a pilot-flag, log, deap-sea lead, spy-glass and sextant, a barometer, at least one chronometer and the international signal book with accompanying flags.

§ 27.

The ship to have onboard a copy of the regulations in force about the rules of the road at sea and about distress signals etc... and a copy of the law about the survey of steamships and the regulations belonging thereto,.....

B.) *Open Passenger Ships.*

§ 36

Concession as to compasses.

Open vessels need only be provided with one good and properly placed compass, cf. Chapter 8, Letter B. If trading exclusively on harbours, canals, rivulets and smaller lakes and not going further away from land than half a mile, they need only have a serviceable boat-compass.

CHAPTER 4. — OTHER SHIPS AND VESSELS.

A.) *Decked-ships, vessel for special purposes excepted.*

§ 48.

Compasses and examinations of deviation.

(Text similar to that of § 24.)

§ 49.

Sparegear etc... for safe navigation. Charts etc. Notices to Mariners.

(Text similar to that of § 25.)

Ships beyond limited trade shall be provided with a spare set of side-lights and masthead-lights, cf. Chapter 8, Letter B, moreover with a national and a pilot-flag, log, deap-sea lead, spy-glass and sextant and a barometer; ships of above 150 tons and trading on foreign continents shall besides be fitted with a chronometer.

§ 50.

(Text similar to that of § 27.)

B.) *Open Vessels.*

§ 54.

Concession as to compasses.

For open vessels the rules laid down sub Letter A of this chapter shall apply to the extent that occasion may require, however restricted by the special regulations below.

The rules about compasses do not apply to open coasting vessels. Seagoing vessels shall be provided with at least one good compass, properly placed, cf. Chapter 8, Letter B.

C.) *Vessels for special purposes.*

§ 55

As to vessels for special purposes the rules laid down sub Letter A of this chapter shall apply to the extent that occasion may require, however restricted by the special regulations below.

The regulations about compasses do not apply to coasting vessels intended for special purposes, seagoing vessels shall be provided with at least one good and properly placed compass, cf. Chapter 8, Letter B.

CHAPTER 5. — SAILING VESSELS WITH AUXILIARY ENGINE POWER.

A.) *Decked-vessels.*

§ 66

Compasses and examination of deviation.

The vessel shall be provided with at least one compass besides the standard compass; coasting vessels need however only have one compass.

In vessels of above 20 tons the compasses shall frequently be examined as to their deviation, which as regards the standard compass in vessels beyond the limited trade is to be entered in the log-book

§ 67.

Sparegear etc... for safe navigation. Charts etc... Notices to Mariners.

(Text similar to that of § 25.)

.....
 Vessels beyond the limited trade shall besides have a national and pilot-flag, log, deep-sea lead, barometer, spy-glass, watch, etc...

In vessels of above 150 tons trading on other continents are moreover required chronometer, sextants (quadrants), etc...

§ 69.

(Text similar to that of § 27.)

B.) *Open Vessels.*

§ 73.

The regulations about compasses do not apply to open coasting vessels. Seagoing vessels shall be provided with at least one good and properly placed compass, cf. Chapter 8, Letter B.

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CHAPTER 6. — FISHING MOTOR VESSELS.

A.) *Vessels plying in limited trade.*

§ 78.

Compass.

The vessel shall if seagoing be provided with an accurate compass that can be solidly placed where it is in no immediate neighbourhood of the motor or of moveable irons, a distance of 1 ½ m. from the motor may be deemed sufficient; cf. further Chapter 8, Letter B.

§ 79.

Charts.

Deeked vessels should be provided with charts necessary to satisfy the surveyors, and with lead and means of shaping a course.

.....

§ 81.

(Text similar to that of § 27.)

.....
 This rule shall be considered complied with when the vessel has onboard a copy of the last publication of the "Annuals of the Danish fishing fleet".

B.) *Vessels plying beyond the limited trade.*

§ 89.

Compasses and examinations of deviation.

The vessel shall be provided with at least one compass besides the standard compass.

As to quality and placement of the compasses and as to examination and rectification of deviation the same rules hold good, as mentioned in Chapter 5, § 66 for sailing-vessels with auxiliary engine power, plying beyond the limited trade.

§ 90.

Sparegear etc... for safe navigation. Charts etc... Notices to Mariners.

The vessel shall be provided with all other appliances, sparegear and other articles necessary for safe navigation, in proportion to the size and description of the vessel, and the trade intended, in accordance with the rules given in Chapter 5, § 67 for sailing-vessels with auxiliary engine power.

CHAPTER 7. — MACHINERY, ELECTRIC INSTALLATION, ETC. IN ALL SHIPS AND VESSELS.

C.) *Electric Installation.*

§ 146.

Affecting compasses or Chronometers.

Electric apparatus and leads that may affect compasses or chronometers shall be placed at proper distances from them. Flow circuits and their return circuits shall be close to one another.

CHAPTER 8. — DEVIATION AND SURVEY-BOOKS. CERTIFICATES FOR SHIPS' LIGHTS AND NAUTICAL INSTRUMENTS. POSITION OF CLASSIFIED SHIPS.

A.) *Deviation-books and Survey-books.*

§ 151.

Deviation book in sea-going ships.

In every sea-going ship or vessel coming within the Law of the Survey of steam ships a deviation-book shall be kept, cf. § 152, restricted, however, by the regulations in Chapters 3-6.

Authorization and sealing.

The deviation-book shall be paged and taped. It is to be authorized and sealed at the place where the voyage begins; in Copenhagen by the Secretary of the Maritime and Commercial Court, and outside Copenhagen by the ordinary judge of the place. For the authorization no fee shall be paid.

Arrangement and keeping.

The deviation-book to be kept by the master of the ship or under his supervision and co-responsibility by the mate.

On the title page of the book shall be stated the description of the ship, its name and home port (cf. The Merchant Shipping Law § 4.) and the name of the master.

On one of the first pages is to be stated the description of the standard compass and its place in the ship, the compensators used, and the changes their places have undergone during the voyage; everything of importance as to the deviation of the standard compass is further to be entered.

The book shall be kept in two parts.

In the first part are to be entered the deviation tables, steering tables or deviation curves for the standard compass found by a thorough examination of deviation (swinging of the ship). Moreover shall be stated the year and day of the examination, and where and by whom it was done. If there is electric installation onboard, examination of deviation shall take place while the plant is being used, as also when it is not. Remarks upon this to be entered in the deviation-book.

In the second part of the book all the observations made without special swinging for the examination, or of control of the deviation on particular courses shall be entered. For every observation must be stated year, date and the approximate hour, as also the place where it was made, further the heeling of the ship, and if possible its trim, the course by the compass and the deviation. Besides, so many items that the deviation can be retraced.

§ 152

The log-book may be used as deviation-book.

In ships where log-book is kept (cf. § 35 of the Merchant Shipping Law), the same may also serve as deviation-book.

If the log-book is used as deviation book, the above stated regulations must be observed, *i. e.* that the results etc... of the complete examinations of deviations are entered in the earlier part of the book, and the controlling observations together with the other daily records.

§ 153.

Survey-book in all ships.

Every Danish ship or vessel coming within the Law of the Survey of steam ships shall be provided with a survey-book.....

B.) *Certificates for ships' lights and Nautical Instruments.*

§ 154.

Ships' lights and compasses must be sanctioned by the Proving House of the Royal Dockyard. At the Proving House other nautical instruments — such as sextants, chronometers and barometers — may be examined.

The fees for examinations at the Proving House of the Royal Dockyard to be fixed by the Ministry of Commerce and Shipping.

The sanction of the Proving House shall however not be required, if the articles named have the Board of Trade's certificate, or they have been examined and approved by the *Deutsch Seewarte* in Germany or by the *Kew Proving House* in England.

Upon sanction, the Proving House will make out two certificates, one to be kept onboard, the other to be kept by the owner.

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The regulations concerning the installation of wireless telegraphy on board ships is given in the *Notification relating to Wireless Telegraphy Installation and Wireless Service on board Ships*, published by the Ministry of Industry, Commerce and Shipping, and dated 5th March, 1928.

The Survey of ships is carried out by the "Statens Skibstilsyn", the official survey Service for ships.

ITALY

The standard Regulations concerning nautical instruments, documents and their supervision are set out in the "Regolamento per la sicurezza delle navi mercantili e della vita umane in mare" (Regulation for the safety of merchant ships and human life at sea) approved by Royal Decree N° 2752 of 10th. August 1928 and published in the *Gazzetta Ufficiale del Regno d'Italia* N° 12 of 15th. January 1929 (VII); of which the following are extracts :-

(Translation of the Italian text).

ART. 4.

DIFFERENT KINDS OF VOYAGES FOR WHICH A SHIP MAY BE CONSIDERED SUITABLE.

According to the Regulations a ship may be classified as suitable for different kinds of voyages which are distinguished in the following manner :-

Long Sea Voyages. — In any sea and at any distance from the shore.

General Coasting Voyages. — Mediterranean Sea, Black Sea and Sea of Azov and, outside of the Straits of Gibraltar :- the Oceanic Coasts of Spain, Portugal, France and the British Isles,

North Sea, Baltic Sea, west coast of Africa as far as Senegal together with the islands situated within 300 miles from the aforesaid coasts and, beyond the Suez Canal:— the Red Sea, Persian Gulf and Coasts of India as far as Bombay and the adjacent islands.

Short Coasting Voyages. — Mediterranean Sea.

Short Trading voyages. — Mediterranean Sea between Gibraltar and the line joining Cape Matapan to Port Bardia in Cyrenaica (Beacon Point).

Coasting Voyages abroad. — Permission is granted by the Central Shipping Authority for each voyage within the limits defined for each case.

Coasting Voyages. — The whole length of the coasts of the Kingdom or of the Colonies within the limits of territorial waters.

ART. 86

INSTRUMENTS AND SUPPLIES.

1° *Ships suitable for long sea voyages or general coasting, must possess:—*

Two sextants; general coasting, 1 sextant.

One Chronometer.

One Pocket Chronometer for astronomical observations.

Two good bulkhead-clocks, one at the steering station, and the other in the engine room.

One Barometer. Ships considered fit for the conveyance of passengers for voyages of long duration must also have a Barograph.

One Thermometer, one Psychrometer (hygrometer).

Two pairs of Binoculars, one of special make for night use; ships considered fit for the conveyance of passengers on voyages of long or short duration must have a pair of long-range prism glasses or a telescope also.

Two semicircular bearing-plates, with alidades for bearings, fixed at the ends of the bridge so as to enable the changes of bearing of ships in sight or of points on land to be followed, or a bearing circle or semicircle fixed to the centre of the bridge, provided that it has a clear view through at least eight points from right ahead on each side.

Two marked lead lines of sufficient length for a depth of 40 Meters, weight of lead about 8 Kilogs.

One ordinary marked lead line of sufficient length for depths of 100 meters, lead about 15 Kilogs.

One lead line for small depths with 75 meters of marked line and lead of about 5 Kilogs.

A machine for taking soundings, prescribed only for ships considered suitable for the conveyance of passengers on long sea voyages, not including however those ships, which at the date of the coming into force of this rule, are already more than 10 years old since entering into service.

A mechanical log.

Supply of general and special charts published officially by the Hydrographic Offices of the various Governments. This Supply is based on the itinerary of the voyage, in conformity with the orders of the Shipping Authorities. It is completed by the corresponding Sailing Directions and Light Lists, Nautical Almanach, Nautical Tables and, for ships propelled mechanically, by Tide Tables.

Compasses, parallel rulers and a protractor, with spares, for ships considered fit for long sea voyages and for the conveyance of passengers on journeys of short duration.

International Code of Signals and two complete sets of the necessary flags, Morse signal-lamps.

The Merchant Service Code, with the rules bearing on it, the present Regulations, the Commercial Code, the Civil Code and Regulations for preventing collisions. All these documents can be replaced by a Manual, approved by the Merchant Marine Board, which embodies the above regulations with which the Commander must be familiar, and which must embody *word for word* the Regulations for Prevention of Collisions at Sea.

It is laid down that ships suitable for the conveyance of passengers on long voyages should have a wireless direction-finding appliance; for other ships this is recommended, but is optional.

For ships conveying passengers on long sea voyages, revolution counters on the bridge are compulsory.

Apparatus for taking sonic soundings is recommended, but optional.

It is advisable, but optional, to instal on board one or two hydrophones connected with a headphone in the chart room for use with sounding-bombs, leader-cables, or for any other purpose.

2° *Ships considered suitable for short coasting voyages.*

The supplies set out above in paragraph 1 of the present article with the following variations:

For ships propelled mechanically, when there is no navigating officer on board, and in every case for sailing ships, omission will be made of the sextant, chronometer, watch, nautical tables and Tide Tables — the Commercial and Civil Codes will always be omitted.

One pair of binoculars of ordinary pattern for use in daylight.

Two ordinary lead lines with sufficient length marked for depths of 40 meters and a lead line for small depths.

3° *Ships considered suitable for all kinds of voyages of a secondary nature.*

The following supplies are prescribed:

One watch, one Barometer, one lead line for small depths, one log, one pair of binoculars, Two semicircular bearing-plates at the ends of the bridge, or a single, a circular or semi-circular bearing-plate, with unobstructed view from right ahead as far as possible on each side.

Charts, Sailing Directions and Lists of Lights, prescribed by the Shipping Authorities and suitable to the itinerary of the voyage.

Dividers, parallel rulers and a protractor.

Merchant Shipping Code with the rules bearing on it, these regulations, together with the Regulations for avoiding collisions at sea, or the Manual mentioned in paragraph 1 of the present article.

The flags of their own distinctive international call signals for vessels to which one has been allotted.

ART. 85.

COMPASSES.

1° A magnetic or gyroscopic compass must be placed near to each steering-station; in addition the vessel must have two magnetic compasses, one to be used as the standard compass, the other to be placed at the main steering-station.

In ships propelled mechanically the graduation of the compass card should read from 0° to 360°.

Wooden sailing vessels are exempted from carrying a standard compass, provided that the compass at the main steering-station has a good command over the horizon for taking bearings and is fitted with a graduated flange forming a bearing-plate.

Mechanically propelled vessels suitable for long sea voyages must have at least three magnetic compasses, when they carry no gyroscopic compass.

All compasses must be fitted with a suitable lighting system for use at night. If the lighting be electric, there must also be an emergency light, which must be totally independent of the lighting circuit of the ship.

The magnetic compasses of any ship must all be of the same pattern and be interchangeable from one binnacle to another. Ships considered suitable for long sea voyages should have two compass cards for each magnetic compass, each with pivot and cap.

Ships propelled mechanically and sailing ships which only undertake the transport of cargo on short trading voyages or coasters need only carry one compass, placed near to the steering-station.

In special cases, and upon a reasoned request made by the ship's owner, the Board of Merchant Shipping may give permission for one magnetic compass only to be carried on board.

The Central Board of Merchant Shipping shall decide what ships suitable for the conveyance of passengers in gulfs or closed estuaries and in canals, must be provided with a compass.

All compasses must be fixed in such a way that the centre of the compass card is exactly in the keel-line of the ship. At the time when the binnacles are fitted particular attention should be paid that the lubber-line coincides exactly with the said keel-line.

2° *Standard Compass.* — The standard compass must be so placed that the magnetic influence of the ship upon the card is as small as possible, that this card be as little subject as possible to vibration and shall have a clear view over the horizon so as to reduce blind sectors as far as possible.

As far as is compatible with the above conditions, the standard compass should be placed as near as possible to the bridge. On ships considered suitable for the conveyance of passengers on voyages of long or short duration, as well as for cargo vessels considered suitable for long sea voyages, there must also be a speaking tube to facilitate communication between the standard compass and the main steering station and to make it more certain.

When standard compasses are being installed, as far as possible they should not be placed on very high superstructure platforms. Should it be necessary to do so however, the platforms must be built of a non magnetic substance. Care must also be taken that there are no metallic objects placed dissymmetrically near the standard compass; that it is not too near to the ends of elongated masses of iron, especially those which are vertical, such as funnels, masts, derricks, davits and awning stanchions; that no iron object likely to be shifted, is within its immediate vicinity; that within a radius of three metres around the standard compass no iron objects are installed, or that, where metal is necessary, a non magnetic be used.

Large cowls of air-shafts should, when fitted within less than six metres of the standard compass, be of non magnetic metal. Dynamos, electric motors, search-lights, wireless apparatus and electric apparatus of all kinds must be kept clear of the standard compass as far as it is necessary, so as not to affect the indications perceptibly.

Electric power cables must be fixed at such a distance from the standard compass so as not perceptibly to influence its indications.

The standard compass must be fitted with a graduated bearing-plate and a prism alidade enabling stars or elevated objects to be brought down to the horizon. Ships suitable for long sea voyages should be supplied with a spare bearing-plate which may not be fitted with a prism.

3° *Steering Compass.* — Steering Compasses should be placed as near as possible to the steering wheel. For this purpose, it is advisable to place the helm-indicator on the right side and a little abaft of the compass. The helmsman will thus be nearer to the compass and will be able to see the graduations more distinctly whilst steering with the wheel at the side.

Care must also be taken that the helmsman has a clear view forward and over the sides of the ship.

The steering wheel, supports and requisite gearing must be of non magnetic metal; the wheel may be of wood.

The transmission gear from the wheel and the engine-room telegraphs situated within a radius of three metres of the compass should be of non magnetic metal. When steering is done by hand, the axle of the wheel and the uprights may be of iron; the wheel, on the other hand, should be of wood or of non magnetic metal. The axle should be placed in the keel-line of the ship.

The compass should be placed forward of the axle, its centre should be in the axial line of the axle produced and at a sufficient distance so as not to feel its influence too much.

4° *General Provisions for all Compasses.* — For the construction of new ships with a metallic hull, under the control of the Registro Italiano, the position and installation of magnetic compasses must be shown on the plans submitted for examination to the Registro Italiano. The competent official shall ascertain whether the installation is satisfactory and will come to an agreement with the builder as to any changes it may be possible to make by way of improvement, should this be necessary.

Whenever local conditions permit, newly built ships, after being launched, shall be moored with the bow turned approximately in the opposite direction to that in which it lay when on the slips.

Before carrying out trials at sea, the compensation and determination of deviation shall be made at least provisionally and the necessary tables shall be drawn up.

5° *Navigating Bridge. Main Steering Station. Chart Room.* — The cabin which is usually built on the Bridge near the main steering station should be of wood or of some other non magnetic substance.

The use of iron beams will be permitted if it is considered indispensable to the frame which forms part of the Helmsman's station.

The Chart Room, when it is situated abaft the wheel, should also be built at least partly of wood or of some other non magnetic substance and so that the compass is at least three metres clear of all iron structures, except for the exceptions above mentioned as to the beams.

ART. 124.

NAVIGATION.

1° In all ships the estimated position of the ship should be known at all times with the greatest accuracy, and, for this purpose :-

a) The compasses should be properly corrected to show the course which the ship is steering.

b) The distance run by the ship should be measured either by deducing it from the number of revolutions made by the propeller, or by measuring it with a log.

The adjustment of magnetic compasses should be carried out at the outset before the ship is placed in commission. This operation may however be made after the speed-trials when the magnetism of the ship has developed after the vibrations and shocks endured. Should it be necessary to adjust the compasses for the speed-trials this shall be done provisionally.

In normal service, the adjustment of the compasses should be carried out during the special visits of inspection every 4 years, and in every case when the deviation exceeds 10° for standard compasses and 15° for steering compasses. Special compensation and checking will be carried out whenever important alterations to the ship may have changed the magnetic surroundings of the compass, or when the ship, since being put into commission, has been laid up for two or three months, and then resumes her voyage.

The compensation and checking of magnetic compasses should be carried out by persons holding an Extra Master's Certificate or the title of Professor of Astronomy and Navigation duly appointed to one of the Government Schools of Navigation, who besides should be considered as being very skilled in the subject, by the Shipping Authorities ; when this is not the case, the Shipping Authorities may insist that the compensation and checking of the compass shall be carried out afresh. From this, the deviation tables of the compass, drawn up after a compensation, shall be signed by the person who has directed the operations and countersigned by the Commander of the ship.

During the voyage the deviation of the standard compass on the course steered shall be checked, whenever possible, at least twice in every 24 hours by observation of stars near the horizon.

Ships considered suitable for long sea voyages, general and short coasting voyages, and ships conveying passengers on voyages of short duration shall keep a "compass log" in which shall be noted all the data and elements affecting the compensation, the deviations ascertained afterwards and more especially those which have been arrived at during voyages, giving the latitude and longitude of the ship at the moment when they were determined. All other ships should always have ready two copies of the deviation tables of the standard compass and the magnetic steering compass, and on to these tables should be transcribed the data relative to the compensation ; of these two copies, one should be kept in the Chart Room, and the other with the documents which constitute the ship's papers.

On all voyages the course should be given to the helmsman according to the standard compass. The officer on watch on the bridge should in addition, at least once during his watch, compare the steering compass (magnetic or gyroscopic) with the standard compass.

To estimate the run made by ships driven by screw propellers :-

a) If there are revolution counters on the bridge, and their accuracy is ascertained, the officer on watch shall observe and make a note of the number of revolutions at sufficient intervals to ascertain the average number of revolution every two hours.

b) If there is no revolution counter on the bridge, or if any doubt exists as to their accuracy, the officer on watch in the Engine Room shall estimate by reference to the counters, or failing these, directly, the number of revolutions per minute at such intervals as will suffice to ascertain the average number of revolution every two hours. At the end of each of these intervals, he shall communicate the average thus obtained by means of a speaking tube, or in some other sure manner, to the officer on watch on the bridge.

c) If there is a towing or pressure log or log of any other type, the speed of the ship shall be deduced from the indication of such log, when the number of revolutions of the screw cannot be relied upon or when it is not possible or convenient to make these observations.

In ships which are not propelled by screw the run made should be estimated by means of a suitable log of which the coefficient of reduction of the direct records should be determined and then verified periodically.

2° When the ship is navigating within sight of points of land, which can be identified on the chart, the position or position lines of the ship deduced from bearings according to the conditions of navigation should be frequently ascertained both by day and at night, but never at intervals exceeding 4 hours; the officer on watch should enter in the ship's log the position of the ship by bearings, noting the time and giving the true bearing and distance from some point shown on the chart.

3° When the ship is navigating out of sight of land for periods of more than 24 hours, the position of the ship should be ascertained whenever possible by lines of position deduced from observation of stars at morning and evening twilight. During the day, observations of the sun shall be taken at azimuth intervals of 30° to 40° and by observing at altitudes of not less than 15° so as to determine the position or lines of position.

Determinations of position either by bearings of points on land or by observations of heavenly bodies, should be as numerous as possible when approaching land or when the ship is about to pass close to some danger.

4° When the ship is in proximity to a danger and it is impossible to fix the ship or obtain lines of position by observation of points on land or of heavenly bodies, recourse should be had, when possible, to wireless direction-finding observations from the ship or from land stations; should such bearings be unobtainable, recourse should be had to echo-soundings, to the submarine sentry or lead-line soundings, or all of these last may be used in conjunction with wireless bearings.

5° When a ship is in sight and there is doubt whether the courses steered will carry her clear, the officer on watch should observe the change of bearing of the approaching ship by means of the bearing plate on the bridge.

During fog, in addition to carrying out the Regulations for avoiding collisions, the ship should, whenever possible, note the change of bearing of ships in the neighbourhood by means of the wireless D. F. or acoustic apparatus.

6° In cases where it is compulsory to carry a chronometer for observation of heavenly bodies, the error correction shall be determined by observation of wireless time signals at least once a day when at sea, and at least once in every five days when in port. A Chronometer Log must be kept and in this the errors obtained should be noted and the assumed daily rate should be added.

7° In all ships at sea, the officer of the watch should always have at his disposal a chart of the vicinity in which he is navigating and the ship's course should be drawn upon it. This course should not be rubbed out until the ship is about to pass again over the same area.

8° Charts should always be kept in good condition without erasures or blots which may hide or change the indications. Charts and the corresponding Sailing Directions should be kept up to date by the Notices to Mariners and should be of sufficiently recent date, which, when necessary, shall be determined by reference to the Hydrographic Institute of the Royal Navy.

In order to verify that the charts and Sailing Directions have been kept up to date in accordance with the Notices to Mariners, reference can be made to the Royal Hydrographic Institute, to its branch offices or to those authorized by the Institute.

9° In ships of more than 12,000 tons, a deck officer, exempt from keeping watch, should be specially detailed to help the Commander in navigational duties, if possible being released from all watches when at sea.

In all ships the time taken by officers in taking observations and making astronomical calculations is never regarded as extra work and consequently the officer is not entitled to any compensation therefor.

Generally speaking, the officer of the watch on the bridge should never take observations or make astronomical calculations during his watch, except on an explicit order given by the Commander.

10° Navigating officers on watch on the bridge are personally responsible for the entries in the ship's log and for verifying the accuracy of the entries laid down hereby with regard to the course, to meteorological conditions or to any unusual events during their watches.

It is their duty to warn the Commander at once of any abnormal occurrence or of anything which they may consider to be unknown to the Commander.

11° The Commander should personally see that the ship's Log is properly kept; when he affixes his signature to it daily he should satisfy himself that all the prescribed information has been duly entered in it and that this is plausible.

When astronomical determinations of position, made either by himself or by his officers are more numerous than is provided for in the ship's log, he must select those which are to be entered in the ship's log. On the other hand, when meteorological conditions or other circumstances have prevented the requisite determinations from being made, the Commander must give a short account in his "Remarks" of the causes of such prevention.

12° When the Commander intends to leave the bridge during the night for a fairly long period, he should write down his orders for the officers of the watch. Amongst other things, he should indicate the speed and the course to be steered and finally the time at which he wishes to be awakened in order to resume his duties on the bridge.

13° In areas where storms (cyclones, typhoons etc.) are to be feared the Commander should take care that his wireless picks up all meteorological reports from the observatories in the region, and he should note carefully whether the meteorological conditions under observation coincide with those communicated by these reports.

14° If, during the voyage, he encounters ice or wrecks which constitute a danger to navigation, the Commander should notify them and their geographical coordinates to ships with which he is in wireless communication and to the nearest wireless stations on shore.

ART. 2

AUTHORITIES RESPONSIBLE FOR THE EXECUTION OF THESE ORDERS.

The Central Bureau of the Merchant Service is responsible for the due observance of these orders. The Shipping Authorities at the Ports within the Kingdom and its Colonies are its executive representatives; abroad the Royal Consular authorities are its representatives.

The Naval and Aeronautical "Registro Italiano" (*), for the classification and inspection of merchant vessels and merchant aircraft, is, unless otherwise specified, the sole technical organ of the Central Bureau and the aforesaid authorities for the enforcement of these orders. The "Registro Italiano" was reorganized by the Act of 11 Nov. 1926, N° 2138, and by Royal Decree of 9 June, 1927, N° 2163.

Consequently, unless the regulations in force expressly prescribe some procedure for visits, making valuations, inspections, etc. other than that laid down by the present regulations, the technical authority lies exclusively with the "Registro Italiano".

(*) The "Registro Italiano" is a body analogous to Lloyds and to the Bureau Veritas.

The authorities cited in the first paragraph of the present article have, in addition, the option of appealing to the Institution mentioned above whenever they deem it advisable, independently of the regulations contained in the present order.

When an opinion given by the "Registro Italiano" on facts dependent on the present regulations, but not including those which affect a certificate of Category, is not accepted by the ship-owner, the point at issue is submitted, together with the necessary details, to the Central Board of Merchant Shipping by the local Shipping Authority.

The Central Board, after having heard, if necessary, the technical Naval Committee of the "Registro Italiano", deliberates as a final Court of Appeal.

ART. 3.

PROCEDURE TO ENFORCE THE REGULATIONS.

The "Registro Italiano" is entrusted with the drafting, keeping up to date, and validating of the documents which deal with technical verifications within its competence, in all cases connected with safety of navigation.

When the validity of the documents prescribed by the regulations expires, or the Shipping Authority deems it necessary to obtain special proofs of a ship's condition, it shall notify the Bureau or local representative of the "Registro Italiano" or the nearest Bureau or representative, who shall take action accordingly.

Abroad the Royal Consular Authorities shall notify the local representative or the nearest Branch Office of the "Registro Italiano".

In urgent cases, however, or if by reason of the distance or difficulties of communication with the nearest agency, it becomes necessary to make some other arrangement, the Royal Consular Authority shall cause the evidence mentioned above to be obtained by Italian naval officers, naval engineers, marine engineers, or Italian naval constructors serving in Italian vessels which are present or who may be residing in the vicinity, giving them legal authority for so doing; failing this, the Royal Consular Authority shall have recourse to local experts, chosen preferably from among those who work on behalf of Italian Shipping Insurance Companies.

The expert or experts mentioned above should always draw up a report supported by technical considerations together with a report on the ship's condition. A copy of the report and of the documents which may be attached thereto shall be forwarded by the Royal Consular Authority to the Technical Bureau of the "Registro Italiano", which granted a Certificate of Seaworthiness to the ship.

The report made by the experts aforesaid is valid, so far as seaworthiness, until the arrival of the ship in one of the ports of the Kingdom and for a journey afterwards to some other port of the Kingdom, where the ship has to go in order to be discharged completely, and be placed in dry-dock.

If on the other hand the ship, after being in possession of the report is employed for trading between foreign ports, she must within six months undergo a fresh examination as to her condition in a foreign port where the "Registro Italiano" has a Bureau or representative. If, during this period of six months, she has never touched at a port where the "Registro Italiano" has a Bureau or representative she will, in any event, have to submit herself again to the Royal Consular Authority and the procedure set out above will be followed. This maximum delay of six months may be reduced, should the reports of the various examinations undergone by the vessel so prescribe, in order to make a further enquiry into her seaworthiness.

In addition to the technical documents supplied by the "Registro Italiano", the Shipping Authority or, abroad, the Royal Consular Authorities, shall draft or receive, or if necessary, cause the other documents specified in the present regulations and necessary for certifying the ship's fitness for navigation, to be delivered to it by the competent bodies.

After having ascertained that the set of the aforesaid documents is complete, that the documents themselves are in order and properly valid and finally after having obtained proof as to the efficiency of the Ship's organization, the Shipping Authority will supply the certificate which authorises the ship to sail, *i. e.* the "Permit to Sail" as set out in Chapter II of the present Regulations.

FRANCE

I^o and II^o.

In conformity with the law of 19th April 1907, dealing with the Safety of Navigation of ships at sea, the shipowner must equip his ships with the nautical documents necessary for the voyages to be undertaken.

He cannot, on the plea of incompetence, shift this responsibility on to the captains whom he employs, and whilst relying on their experience, must control their acts by calling for the register which every ship possesses, and in which the Inspector of Navigation records his observations at the time of his various visits.

The nautical documents of which merchant ships must be in possession, are set out in Articles 66, 67 & 70 of the Regulations of 21 Sept. 1908 dealing with the safety of navigation of ships at sea, the wording of which is as follows :-

ART. 66.

Ships of more than 25 tons intended for long sea voyages, international and general coasting trade, shall be provided at least with the nautical documents and instruments, as well as articles of equipment and spares, a list of which is included in the following article.

Should they undertake voyages other than those enumerated above they must, as a rule, be provided with the same instruments and equipment, save for reductions and exemptions expressly mentioned in the tables set out below.

Nevertheless, the Inspection Commission may exempt these ships from carrying on board the instruments and objects marked with an asterisk, if it is considered that such exemption will entail no risk.

ART. 67.

Art. 67 of the Government Regulations of 21 Sept. 1908, already amended by a decree of June, 1912, is now amended to read as follows : (Decree of 31 August 1921) :

NOMINAL LIST OF NAUTICAL DOCUMENTS AND INSTRUMENTS
WITH WHICH SHIPS MUST BE EQUIPPED AND THE CONDITIONS TO WHICH
THESE INSTRUMENTS MUST COMPLY.

A. *Long Sea Voyages.* B. *International and General Coasting Trade.*

OBJECTS.	A.	B.	OBSERVATIONS.
<i>Chronometer</i>	2	1	Chronometers must be suspended in gimbals in boxes which are fixed in some place where they will be most sheltered from vibration, jolting, variations of temperature, etc...
<i>Bulkhead-clock</i>	1	1	Steamers or ships propelled mechanically must, in addition, carry in the engine-room a Bulkhead-clock.
<i>Barometer</i>	2	1	Ships making long voyages must carry two barometers one of which must be a barograph.

OBJECTS.	A.	B.	OBSERVATIONS.
<i>Thermometer</i>	1	1	An extra one in the engine room in steamers or ships propelled mechanically.
<i>Sextant (*)</i>	2	1	Sextant must be provided with all their accessories.
<i>Telescope (*)</i>	1	1	
<i>Marine Binoculars</i>	2	1	
<i>Compasses complete</i>	The necessary number being in accordance with the establishment.		One to each steering station and another for bearings, if these cannot be taken with a steering compass. There shall never be less than two compasses. Of these one at least must be fixed, compensated and corrected — it must also be adjusted before departure and provided with an alidade together with a deviation table. In addition, a spare compass with alidade, and a compass for each lifeboat according to the provisions of Art. 86.
<i>Compass Card</i>	2	1	In addition to those belonging to the Compasses.
<i>Propeller Log or Electric Log with suitable line</i>	1	1	Obligatory in all passenger ships, steamers of 500 tons and more and in sailing vessels of 100 tons and more.
<i>Charts and Sailing Directions</i> (1)...	According to voyages to be undertaken.		These documents must be kept up-to-date by means of the information provided by the Hydrographic Office.
<i>Nautical Books</i> (Nautical Almanach or Ephemeris, Tide Tables, List of Lights and Beacons for the voyage to be undertaken (1).	1 copy of each		
<i>Protractor</i>	2	1	
<i>Dividers</i>	2	2	
<i>Navigation Lights and Lenses, Material for signalling by day or night, during fog and in times of distress</i>	A sufficient quantity so as to comply with the regulations in force.		

(1) *The charts, instruments and Nautical Reference Books must be at the disposal of the Officer of the watch, whenever land or lights are in sight.*

OBJECTS.	A.	B.	OBSERVATIONS
<i>A Signal Lamp, electric or otherwise, for the Morse code</i>	1	1	
<i>Sounding Lines with leads</i>	3	2	Of which one shall have a length of 200 m.
<i>Sounding machines to take soundings under way</i>	1	1	For all steamers or ships driven mechanically intended for long voyages, international or general coasting trade, as well as for all sailing ships intended for long voyages.
<i>International Code of Signals and a complete set of flags</i>	1	1	
<i>Azimuth Tables</i>	1	1	

For the due performance of these orders :-

1^o) Ships of more than 25 tons, no matter what kind of voyage they may undertake, must be provided with the annual supplements giving the corrections and additions relating to Sailing Directions, List of Lights and other nautical books on board, when such exist.

2^o) Whatever trade they be engaged in, transport, fishing, etc., ships of more than 25 tons scheduled for long voyages and international and general coasting trade must be provided with Notices to Mariners. Ships over 25 tons, intended for coasting service in the Mediterranean, and which ply between the south coast of France (Corsica included) and Algerian or Tunisian ports, are subject to the same rule.

The same category of ships intended for other voyages need not have the Notices to Mariners.

ART. 69.

.....
The error and rate of each chronometer must be determined. If the ship is provided with electric installation, the correction of the compass must be made with the dynamo successively in motion and stopped.

ART. 70.

Pleasure vessels must be provided with the Instruments and Nautical Documents, as well as the objects of equipment and spares, as set out below :-

a) In Yachts which only necessitate a skipper being in command :-

Charts and Sailing Directions.

List of Lights.

1 Steering Compass and one compass for bearings, unless the steering compass is fitted for taking bearings.

1 Protractor.

1 Pair of dividers.

1 Aneroid Barometer

1 Lead line of 100 metres with leads.

1 Pair Marine Binoculars.

b) In Yachts which require a Yacht-Master in command :-

In addition to the objects set out in the above paragraph :-

1 Sextant or Octant.

1 Chronometer or Hack watch or a watch with seconds hand. Nautical Almanach or Ephemeris.

c) In Yachts making general coasting or long voyages, the objects as enumerated in paragraphs a) and b) above, but with a Chronometer and a Hack-watch.

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III°

The Commission of Inspection, which includes an Inspector of Navigation must, at the time of its visit or else at the time of the ship's departure, and before delivery of the "Permit to sail", make sure that the regulations set out above have been duly complied with. The "Order of 17 May 1909 for the application of the law of 17 April 1907 as to Safety of Navigation at Sea", describes in detail the manner in which these visits of inspection are to be carried out. This order is worded as follows in articles 63, 64 and 65.

ART. 63.

INSPECTION OF NAUTICAL DOCUMENTS.

The Inspector shall verify the presence on board of all the nautical instruments set out in Art. 67 of the Regulations, taking into account any exemption which the Inspection Commission may have granted to ships of certain categories and shall satisfy himself as to their being in good working order.

In ships undertaking a long voyage, international and general coasting trade or deep sea fishing, he shall make sure that the error and rate of each Chronometer has been determined.

It is not possible to prescribe fixed rules for Navigation Inspectors as to the checking of the navigating instruments. In this respect it is all the more prudent to leave this to a great extent to their own initiative, as they frequently find instruments which are both ill assorted and of foreign make. Besides, the testing of a compass, for example, and its correction require a long time and the making of observations, which it would be impossible to do in the course of one visit.

In every case, they should examine the card-pivots of compasses, make sure that the horizontal plane passing through the compensating spheres (if fitted) coincides with the plane of the card, see that the card is well balanced and that its magnetic moment is sufficient and that each spare card is provided with a pivot-cap and a pivot.

They will be most careful to examine standard compasses, and will have their deviation tables shown to them. If the ship is provided with electric installation, the compasses should have been regulated, the dynamos being successively in motion and stopped.

Lastly the Inspector shall examine the logs and the lead lines and shall check the markings on the lines and the accuracy of the hour glasses.

ART. 64.

INSPECTION OF NAUTICAL DOCUMENTS AND CHARTS.

The Inspector of Navigation shall assure himself of the presence on board of all nautical documents necessary for safe navigation during the voyage in contemplation, that is to say :-

1° Copies of the Nautical Almanach or of the Abridged Nautical Almanach, Azimuth Tables, Tides and, finally, books or tables used for calculating the position.

2° Charts, Sailing Directions, Light Lists and other nautical books; this list to be in accordance with the following rules :-

As to Charts, the Inspector can refer to the Index Charts and the Catalogue of publications issued by the Hydrographic Office in order to ascertain whether the Captain has provided himself with all those requisite for the voyage in contemplation.

The charts which a ship should carry, in view of the voyage to be undertaken and the areas which she will be called upon to pass through, can be grouped under the four following heads :-

1° Special Charts or plans, showing on a large scale the probable ports of departure, arrival, shelter or call of the ship. If these plans are in the form of insets on other charts which are to be found on board, there is no necessity for them to be shown on the list.

2° General charts, on which the courses will be drawn when the ship is out of sight of land or sufficiently off shore that a chart on a small scale will suffice. (In this group are included not only charts of the greater seas, but also charts of gulfs and secondary seas, which form part of the greater ones. For example, to navigate in the Eastern Basin of the Mediterranean, in addition to the chart of the whole Basin, the general charts should include the two of the Archipelago, the two of the Adriatic, the charts of the Sea of Marmara, of the Black Sea and of the Sea of Azov).

3° Channel Charts, showing the Straits or narrow channels (Gibraltar, the Kattegat, the Sound and the Straits of Dover).

4° Coastal charts, required when the ship keeps so close to the shore that the general chart is insufficient, or when, for making the land, the general chart on the plan of the harbour does not give the necessary detail.

Bearing in mind these directions it is an easy matter to decide, in each particular case, what are the charts which a ship should have on board for the voyage in contemplation.

With regard to fishing vessels, the list laid down in accordance with the preceding rules may be simplified by the omission, first, of the special charts of the ports of departure, when their approach is well known to the Captains, Masters or Skippers, and, secondly, of the coastal charts which are usually of little use to ships of small tonnage.

These same remarks are applicable to small coasting craft. Nevertheless, so far as these latter are concerned, it must be borne in mind that they are often obliged to hug the coast in order to take advantage of any shelter offered, and consequently certain coastal charts will be indispensable to them at times.

Where any uncertainty exists as to the charts to be carried by any ship, the Inspector of Navigation will refer the matter to the Administration de l'Inscription Maritime which will obtain an opinion from the Hydrographic Office, to be applied to similar cases in the future.

Captains can avail themselves either of the charts issued by the French Hydrographic Office, or, failing these, of documents published by foreign Governments; the conditions of sale and delivery of charts and all other nautical documents of the Hydrographic Office are shown in the Bulletin inserted at the end of all the publications issued by that Office.

In order to make sure that the charts are kept up to date and to facilitate the work of revision, the following documents will be placed at the disposal of Captains, at the offices of Inspectors of Navigation :-

- 1° Catalogue of Charts, Plans, Sailing Directions etc. which constitute the French hydrographic documents.
- 2° Index Charts.
- 3° A statement showing, for some fixed date, the latest editions of and the latest small corrections to all charts issued by the French Hydrographic Office.
- 4° The annual and monthly statements which have appeared since the publication of the above.
- 5° A collection of the corrections to the various charts.

These documents are distinct from those which will be placed at the disposal of the Navigation Inspector for his own use: they can be referred to or copied on the premises, but they must on no account be taken away from the offices of the Navigation Inspector.

ART. 65.

INSPECTION OF SAILING DIRECTIONS AND LISTS OF LIGHTS.

As to Sailing Directions and other nautical reference books, ships fitted out for long sea voyages, international and general coasting trade and deep sea fishing, must carry on board the Sailing Directions and Lists of Lights concerning the ports to which they are bound, or the coasts along which they will have to sail.

At the same time, in order to limit the number of documents on board to those strictly necessary, Sailing Directions and Lists of Lights which only concern isolated places or distant points in sight only of which the ship passes, will not be insisted upon, as the chart will be sufficient for navigating purposes in such cases.

To decide upon the list of Sailing Directions requisite for a ship proceeding on a definite voyage, the Inspector of Navigation shall base his decision upon the Catalogue of the publications of the Hydrographic Office. In case of uncertainty he shall refer the matter to the Administration de l'Inscription Maritime which shall obtain an opinion through official channels to enable him to deal with future cases, as already laid down above in the case of charts (Art. 64).

Lists of Lights used on board ships must be of the latest edition issued or have been kept strictly up to date.

Each Inspection Bureau will keep a copy of each of the documents (Light Lists and Sailing Directions) used by ships which generally sail from the port.

Sea-going ships must be provided with the Notices of Mariners which, according to the Bulletin of Information concerning the sale and delivery of nautical documents, inserted in the last page of the publications issued by the Hydrographic Office, are delivered gratis as are also the monthly and annual tables to any person who applies for them and can show that he is either a master or a ship-owner; the cost of postage is the only charge made.

Notices to Mariners intended for Merchant shipping are printed on white paper in order that they may be used as correction slips for insertion in the respective books.

Inspectors of Navigation will receive sets of these Notices; in important ports Inspectors will be supplied with several sets. Sailing Directions and Light Lists in Merchant vessels shall be kept up to date by means of the correction slips published monthly by the Hydrographic Office, or by means of Notices to Mariners. The monthly corrections will be supplied in duplicate, at least, to the Navigation Inspectors. One copy is to enable the Inspection Service to keep their books up to date, and the other is to be kept at the disposal of ships, who must take copies thereof. The monthly statements of corrections of the various reference books are supplied on the same basis and for similar use.

Articles 66 and 67 of the Order of 21 Sept. 1908 compel ships making long voyages and international and general coasting vessels to carry the International Code of Signals, and a complete set of flags. It is left to the discretion of the Commission set up by Art. 4 to decide whether to enforce this rule on board ships engaged in other kinds of traffic.

