

## PERIODICAL SURVEYS.

IRON and STEEL vessels will be classed A with a Numeral prefixed, so long as, on careful annual and periodical Special Surveys, they are found to be in a fit and efficient condition for the safe conveyance of dry and perishable cargoes.

To entitle IRON AND STEEL VESSELS to retain the Characters assigned to them in the Register Book, they are required to be subjected to the following Special Surveys, designated No. 1, No. 2, and No. 3, respectively. In addition the machinery and boilers of steam vessels, and the donkey boilers of sailing vessels, are required to be submitted to the Periodical Surveys described in the third and fourth columns.

The periods at which the surveys on the hull are intended to be held, in the cases of vessels classed from 100A to 90A inclusive, are when a vessel is 4 years, 8 years, and 12 years old respectively, and at like periods from the date when the No. 3 Survey was held. See Footnote a.

In every case the date of build of a vessel is to be reckoned from the last date of the survey for first entry of classification, when such survey is completed within six months of the date of launching: but when the first entry survey is not completed within that period, then the date of build will be reckoned from six months after the date of launching. The date when the special periodical surveys respectively become due is to be calculated from the date of build, as above described, or the last date of the No. 3 survey.

Similarly, Iron vessels classed 85A and under, and Steel vessels classed A for special purposes, must be subjected to a special survey every three years, as per Nos. 1, 2, and 3, and afterwards as per Nos. 1, 2, and 3, consecutively.

In any case in which it may suit the convenience of the Owners, the Special Surveys Nos. 1 and 2 may be held at any time within twelve months previous to the expiration of the period when they severally become due, and the special survey No. 3 may be held at any time before the date when it becomes due. See Footnote a.

If a vessel is at a port in the United Kingdom after the expiration of the prescribed period for survey, and is not subjected to the special survey then due, before leaving the United Kingdom, the word "Expired" will be inserted against her character in the Register Book; and in no case will a vessel be allowed to retain her class if she has not been subjected to the whole of the requirements of the requisite special survey within twelve months from the date when the survey became due.

Vessels which have undergone either of the foregoing examinations, will be noted in the Register Book, thus:—s.s. No. 1—01, s.s. No. 2—01, s.s. No. 3—9,01, 2nd s.s. No. 3—9,01, indicating the special survey and date thereof.

Whenever the engines or boilers are taken out, the bearers, with the floor-plates, keelsons, rivets, &c., under them, are to be surveyed; and whenever the bottom plating is to be cemented a survey is to be held prior to the cement being laid.

**\*Survey No. 1.**—1. The vessel to be placed on blocks of sufficient height in a dry dock or on a slipway, proper stages to be made and the holds and peaks to be cleared; the limber boards and ceiling equal to not less than two (†) strakes fore and aft on each side removed, one of which is to be taken from the bilges. In Steel vessels where the ceiling in the flat of bottom is fitted in hatches, the whole of the hatches and one strake of ceiling at the bilges are to be removed, (b) and both surfaces of outside plating of Steel and Iron vessels are to be exposed, (c) and cleaned and coated where necessary.

2. The coal bunkers to be cleared for examination, and ceiling removed as in the holds.

3. In all vessels the masts, spars, and general equipment must be in good and efficient condition.

4. If the vessel has a double bottom, the ceiling must be removed therefrom and the efficiency of the tanks tested by a head of water to the height of the light water-line. Where deep water ballast tanks are fitted, their watertightness to be tested by a head of water not less than 8 feet above the crown of the tank.

5. When a deck originally required to be 4 inches thick is worn to 3 inches, 3½ inches to 2¾ inches, 3 inches to 2½ inches, it must be renewed, unless it be found on survey to be in good condition, when on application the case will receive the consideration of the Committee.

a Should a ship at any time be submitted to Special Survey No. 3 before being 12 years old, the subsequent Special Surveys may be Nos. 1, 2, and 3, consecutively, dating from the completion of such No. 3 Survey.

\* To facilitate the arrangements of Owners, a portion only of the requirements of the foregoing special surveys may be complied with at

6. Note.—At the Special Survey No. 1 succeeding No. 3, the chain cables are to be ranged for inspection. When any length of a chain cable is worn so that the sectional area at its most worn part is reduced by ¼th from the original area, it should be renewed.

7. The engines and boilers of steam vessels and the donkey boilers of sailing vessels must be examined and favourably reported on by the Society's Engineer-Surveyors.

8. The steam steering engine, its connections, the steering rods, chains, blocks, rudder quadrant, tillers and steering gear to be carefully examined and the condition of the various parts to be stated by the Surveyor on his report of Survey.

9. The hatches are to be examined in position at the hatchways, and, if defective, are to be renewed or made good.

**\*Survey No. 2.**—1. The vessel to be placed on blocks of sufficient height in a dry dock or on a slipway, proper stages to be made and the holds and peaks to be cleared; the limber boards and ceiling not less than three strakes fore and aft on each side removed, one of which is to be taken from the bilges. Where the ceiling in the flat of bottom is fitted in hatches, the whole of the hatches and one strake of ceiling at the bilges are to be removed, (b) and both surfaces of outside plating exposed, (c) and cleaned and coated where necessary.

2. The coal bunkers to be cleared for examination, and ceiling removed as in the holds.

3. The windlass at this and all subsequent alternate special surveys to be unhung, where necessary, and its wood linings sufficiently stripped, for examination. The chain cables are also to be ranged for inspection at this and all subsequent special surveys. When any length of a chain cable is worn so that the sectional area at its most worn part is reduced by ¼th from the original area, it should be renewed.

4. In all vessels the masts, spars, and general equipment must be in good and efficient condition.

5. If the vessel has a double bottom, the ceiling must be removed therefrom, and the efficiency of the tanks be tested by a head of water to the height of the light water-line. Where deep water ballast tanks are fitted, their watertightness to be tested by a head of water not less than 8 feet above the crown of the tank.

6. After a vessel has passed No. 3 Survey, in addition to the survey prescribed for No. 2, when that survey becomes due, ceiling should be lifted at other parts of the vessel where deemed necessary by the Surveyors to enable them to satisfy themselves as to the condition of the vessel.

7. When a deck originally required to be 4 inches thick is worn to 3 inches, 3½ inches to 2¾ inches, 3 inches to 2½ inches, it must be renewed, unless it be found on survey to be in good condition, when on application the case will receive the consideration of the Committee.

8. The steam steering engine, its connections, the steering rods, chains, blocks, rudder quadrant, tillers and steering gear to be carefully examined and the condition of the various parts to be stated by the Surveyor on his report of Survey.

9. The hatches are to be examined in position at the hatchways, and, if defective, are to be renewed or made good.

10. The engines and boilers of steam vessels and the donkey boilers of sailing vessels must be examined and favourably reported on by the Society's Engineer-Surveyors.

**\*Survey No. 3.**—1. TO BE HELD BY TWO SURVEYORS, ONE TO BE AN OFFICER OF THE SOCIETY.—The vessel to be placed on blocks of sufficient height in a dry dock or on a slipway; proper stages to be made and the holds and peaks to be cleared; all the close ceiling to be removed, so that the rivets, plates of keel and flat of bottom may be thoroughly examined; coal-bunkers of steam vessels to be cleared, the whole of the frames, stringers, hooks, floor-plates, keelsons, engine and boiler bearers, ends of beams, water-tight bulk-heads, rivets and inner surface of the plating to be exposed, and where side lights are fitted, the condition of the plating in way of the same to be ascertained. All oxidation to be removed by being cut or beaten off the several parts above named, also from the outside plating, rivets, keel, stem, sternpost, and rudder; the planksheers and waterways, if of wood, to be scraped bright. When the vessel is thus prepared, the Surveyors are to ascertain the thickness of the plating by having holes drilled in such parts as may be deemed necessary, (c) and to furnish a detailed statement of the thicknesses in their report.

2. Such parts as may be found defective, or materially less than the required substance by Rule, are to be removed and replaced with proper materials, equal in substance and quality to the

the expiration of the time specified, provided that the whole of the survey be completed within twelve months from the date when the survey became due. The Surveyors in such cases are to give the Owners or their agents, written notice of the parts not surveyed, and are also to report the same to the Committee.

† In the case of Iron vessels only one strake need be removed.

N.B.—It is to be understood that the foregoing requirements are subject to amendments made by the Committee from time to time.

original construction (d). The planksheers, waterways, flat of decks and their fastenings, are also to be examined and made good where necessary.

3. In all vessels the masts, spars, and general equipment must be in good and efficient condition. All mast and bowsprit wedging at this and subsequent Special Surveys to be removed, unless the plating of iron or steel masts and bowsprits is doubled in way of the same, when it will only be necessary to remove the wedging at the Special Surveys, No. 3. Iron or steel masts, bowsprits, and yards to be carefully tested by hammering, and if the plates are considered by the Surveyors to be materially wasted at any part, the thickness is to be ascertained by drilling. In sailing vessels the standing rigging should be lifted and the service and parcelling stripped off the nips, bends, and splices for examination, unless the rigging has been recently lifted, when particulars of the case should be submitted for the consideration of the Committee.

Note:—The masts and spars are to be subject to examination by the Surveyors when deemed necessary by them on other occasions besides Special Surveys.

4. If the vessel has a double bottom, the ceiling must be removed therefrom and the efficiency of the tanks tested by a head of water to the height of the light water-line. Where deep water ballast tanks are fitted, their watertightness to be tested by a head of water not less than 8 feet above the crown of the tank.

5. When a deck originally required to be 4 inches thick is worn to 3 inches, 3½ inches to 2¾ inches, 3 inches to 2½ inches, it must be renewed, unless it be found on survey to be in good condition, when on application the case will receive the consideration of the Committee.

6. The chain cables are to be ranged for inspection. When any length of a chain cable is worn so that the sectional area at its most worn part is reduced by ¼th from the original area, it should be renewed.

7. The steam steering engine, its connections, the steering rods, chains, blocks, rudder quadrant, tillers and steering gear to be carefully examined and the condition of the various parts to be stated by the Surveyor on his report of Survey.

8. The hatches are to be examined in position at the hatchways, and, if defective, are to be renewed or made good.

9. The engines and boilers of steam vessels and the donkey boilers of sailing vessels must be examined and favourably reported on by the Society's Engineer-Surveyors.

**Second and subsequent Special Surveys No. 3.**—1. The vessel must be submitted to the same survey as before described for Survey No. 3, with the following additions:—

2. The condition of the scantlings must be ascertained, the shell plating to be drilled at such parts as the Surveyors may consider necessary to satisfy themselves as to its thickness, the number of holes on each side in no case being less than the number of strakes of plating not covered with cement in the vessel.

3. Care should be taken especially to ascertain the extent of deterioration of steamers in the way of the side bunkers and boilers.

4. A sketch showing the thickness at the parts where drilled is to accompany the report on the vessel, for the consideration of the Committee.

5. The plating in way of cement in the bottom need not be drilled, provided the cement be found to be adhering satisfactorily to the plating, and the Surveyors consider drilling unnecessary.

6. In cases where the requirements of the Second Special Survey No. 3 may have been fully complied with, before the expiration of the period when the survey becomes due under the Rules, the fact will, if desired by the Owners, be noted in the Register Book. Such notation, however, will not exempt a vessel from the compliance with the requirements of the survey as regards drilling when she is 24 years old, or at the first Special Survey held after that time, unless the drilling has been done at the previous Special Survey.

## ENGINES & BOILERS.

1. The machinery and boilers of all steam vessels and the donkey boilers of sailing vessels are to be surveyed annually if practicable, and in addition are to be submitted to a Special Survey upon the occasion of the vessel's undergoing the Special periodical Surveys Nos. 1, 2, and 3, prescribed in the Rules, unless the machinery and boilers have been specially surveyed within a period of twelve months.

b In the case of vessels fitted with double ceiling, application may be made to the Committee if any relaxation be required.

c In cases where the inner surface of the bottom plating is coated with cement, or asphalt, if the coating be carefully inspected and tested, by beating or chipping, and found sound and adhering satisfactorily to the iron or steel, its removal may be dispensed with.

2. At these Special Surveys, and on other occasions, if deemed necessary by the Surveyor, the propeller, stern-bush, sea connections and their fastenings are to be examined while the vessel is in dry dock.

3. The stern shaft is to be examined annually and drawn at intervals of not more than two years.\*

4. The cylinders, pistons, slide valves, crank and tunnel shafts, and pumps are to be examined, and if necessary the condenser is to be examined and tested.

5. The arrangements of cocks, pipes, bilge-suctions, roses, &c., are to be examined.

6. The boilers and superheaters are to be examined internally and externally, and if deemed necessary by the Surveyors both boilers and superheaters are to be drilled or tested by hydraulic pressure; the safe working pressure is to be determined by their actual condition.

7. The safety valves are to be examined and set to the safe working pressure.

8. If satisfactory, these Surveys will be recorded in the Register Book thus:—"LMC 9.01" in red; or "B&MS 9.01" in red.

9. "LMC." (LLOYD'S MACHINERY CERTIFICATE), denotes that the machinery and boilers are fitted in accordance with the Rules, and when followed by a date, indicates that they were found at that time to be in good condition. "MS." with a date denotes that the engines at that time were found upon inspection to be in good condition. "BS." with a date denotes that the boilers were found upon inspection at that time to be in good condition.

10. "B&MS." (BOILERS AND MACHINERY SURVEYED), with a date, denotes that the boilers and machinery, though not fitted strictly in accordance with the Rules, were found upon inspection at that time to be in good condition.

11. In the event of either the machinery or boilers appearing to be impaired to such an extent as to render it desirable that either or both be specially surveyed within the periods prescribed above, a Certificate for either machinery or boilers for a limited period will be granted according to the nature of the case.

\* On the application of owners the Committee will be prepared to give consideration to the circumstances of any special case.

## BOILERS.

12. The boilers of all steam vessels and the donkey boilers of sailing vessels are to be specially surveyed when six years old, and subsequently they are to be specially surveyed annually.

13. At these surveys the boilers and superheaters are to be examined internally and externally, and if deemed necessary by the Surveyors, both boilers and superheaters are to be drilled or tested by hydraulic pressure; the safe working pressure is to be determined by their actual condition.

14. The safety valves are to be examined and set to the safe working pressure.

15. If satisfactory these surveys will be recorded in the Register Book thus:—"BS 9.01" (in red) in the case of steam vessels, and "DBS 9.01" (in red) in the case of sailing vessels.

16. "BS." (BOILERS SURVEYED), with a date, denotes that the boilers were found upon inspection at that time to be in good condition.

17. In the event of the boilers appearing to be impaired to such an extent as to render it desirable that they be specially surveyed within the periods prescribed above, a Certificate for a limited period will be granted according to the nature of the case.

N.B.—In reference to the Rules above quoted, and in order to prevent the disappointment arising from Ships losing their Characters from want of survey, it is hereby intimated that the duty of giving NOTICE OF PERIODICAL SURVEYS required by the Rules, or when repairs are necessary in consequence of damage, or from other causes, rests with the Owners, Masters, or Agents.

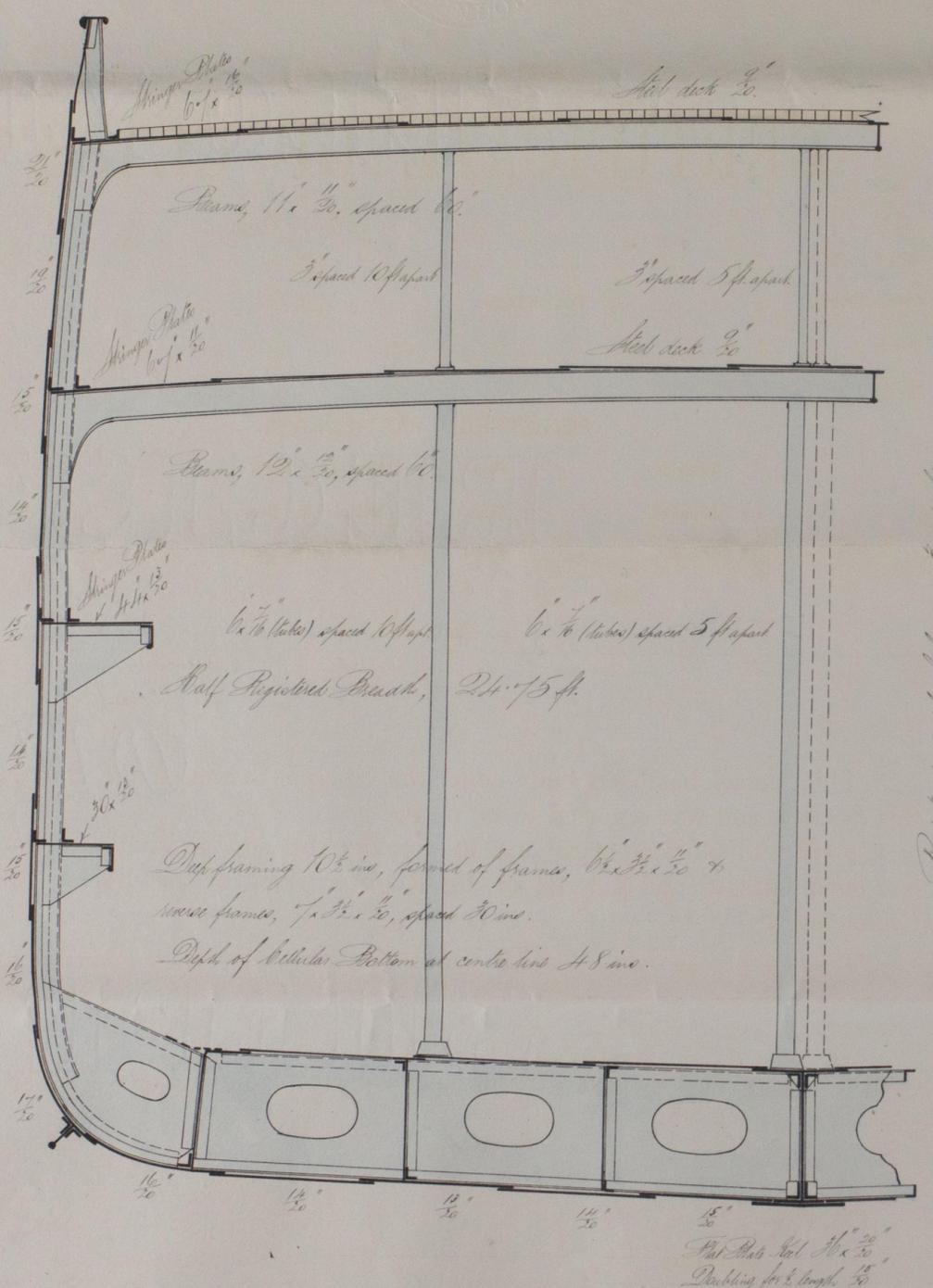
A. G. DRYHURST,

Secretary.

71, Fenchurch Street, London, E.C.  
1st July, 1902.

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Lloyd's Register  
Foundation  
WS 94-0250

*S.S. Aki Maru*



Marked Depth 33 ft

Registered depth of hold 30 ft

No. 8319

LLOYD'S REGISTER  
OF BRITISH AND FOREIGN SHIPPING.

ESTABLISHED 1834.

CERTIFICATE OF CLASS.

*Steel Twin Screw Steamer "Aki Maru"*

Official Number \_\_\_\_\_ Port of Registry *Tokio*  
 Owners *Nippon Yusen Kaisha, Tokio*  
 Builders, and where and when built *Mitsui Bishi Dockyard & Engine Works, Nagasaki, March 1903*

REGISTERED PARTICULARS.

Length *445.3* Feet. Tonnage, Gross *6443.89*  
 Breadth *49.5* Feet. Ditto under Deck *5373.84*  
 Depth *30.4* Feet. Ditto Net *3995.17*  
 Rig *Two & Aft-Screw (2 shafts)*

ENGINES.

Description.	When Made.	Name and Address of Maker.	Diameter of Cylinders.	Length of Stroke.	Steam Pressure Working.
<i>Triple Expansion (2 shafts)</i>	<i>1903</i>	<i>Mitsui Bishi Dockyard &amp; Engine Works, Nagasaki</i>	<i>21 1/2 x 56</i>	<i>48</i>	<i>200 lb.</i>

This Vessel has been built under the Special Survey of the Surveyors to this Society, and was reported to be on the *3<sup>rd</sup> March 1903* in a good and efficient state, and fit to carry dry and perishable cargoes, and has been Classed and entered in the Register Book of this Society, with the Character **100A1**.

subject to periodical surveys in accordance with the Rules, as on the other side.

*A. J. Dyball*  
Secretary.

*Georg Lind*  
Chairman.  
of the Committee of Classification.

71, Fenchurch Street,  
London, *13<sup>th</sup> April 1903.*

