

REPORT ON MACHINERY.

No. 22654

Port of SunderlandReceived at London Office WED. 14 MAR 1906

No. in Survey held at Sunderland Date, first Survey 17th November 05 Last Survey 6th March 1906
 Reg. Book. on the Steel Screw Steamer "Cambria" (Number of Visits 29)
 Master A. Kell Built at Sunderland By whom built Sunderland S.B. & L. Tons { Gross 34.02.57
 Engines made at Sunderland By whom made N.E. Marine Engineering Co., Ltd. when made 1906 Net 22.04.29
 Boilers made at Sunderland By whom made N.E. Marine Engineering Co., Ltd. when made 1906 When built 1906
 Registered Horse Power 308 Owners W. H. Cockerline & Co. Port belonging to Hull
 Nom. Horse Power as per Section 28 308 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 23½ - 39 - 66 Length of Stroke 45 Revs. per minute 62 Dia. of Screw shaft as per rule 14.33 Material of Iron
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Is the after end of the liner made water tight
 in the propeller boss yes If the liner is in more than one length are the joints burned — If the liner does not fit tightly at the part
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If two
 liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4-10½
 Dia. of Tunnel shaft as per rule 12 Dia. of Crank shaft journals as per rule 12.56 Dia. of Crank pin 12½ Size of Crank webs 8½ x 7½ Dia. of thrust shaft under
 collars 12½ Dia. of screw 14-0 Pitch of screw 14-0 No. of blades four State whether moveable no Total surface 92 ft
 No. of Feed pumps Two Diameter of ditto 3 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Donkey Engines Two Duplex Sizes of Pumps 4x9x9 - 8x11x6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three 3½ dia In Holds, &c. Two in each fore hold & after main
 hold 3½ dia one 3½ Aftermost hold & tunnel well.
 No. of bilge injections one sizes 4 Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size yes 3½
 Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible no
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line above
 Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate yes
 What pipes are carried through the bunkers none How are they protected —
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock 29/1/06 on way Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from top platform.

BOILERS, &c.— (Letter for record 5) Total Heating Surface of Boilers 4610 ft Is forced draft fitted no
 No. and Description of Boilers Two single ended, Cyl. Mult. Working Pressure 180 lb Tested by hydraulic pressure to 360 lb
 Date of test 6/2/06 Can each boiler be worked separately yes Area of fire grate in each boiler 58 ft No. and Description of safety valves to
 each boiler Two, direct spring Area of each valve 4.04 ft Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean dia. of boilers 15-9½ Length 10-6 Material of shell plates steel
 Thickness 1¼ Range of tensile strength 28½ Are they welded or flanged no Descrip. of riveting: cir. seams Lap or R. long. seams 5/8 - 7/8
 Diameter of rivet holes in long. seams 19 Pitch of rivets 8½ Lap of plates or width of butt straps 19
 Per centages of strength of longitudinal joint 86.3 Working pressure of shell by rules 181.5 lb Size of manhole in shell end 16x12
 Size of compensating ring flanged No. and Description of Furnaces in each boiler Three, Brighton Material steel Outside diameter 44½
 Length of plain part top Thickness of plates crown 9 Description of longitudinal joint weld No. of strengthening rings —
 bottom — bottom 76
 Working pressure of furnace by the rules 185.5 lb Combustion chamber plates: Material steel Thickness: Sides 3¼ Back 13 Top 3 Bottom 4
 Pitch of stays to ditto: Sides 8½ x 11½ Back 11½ x 10½ Top 11½ x 8½ If stays are fitted with nuts or riveted heads into Working pressure by rules 181.4 lb
 Material of stays steel Diameter at smallest part 18½ Area supported by each stay 108.12 Working pressure by rules 181.1 lb End plates in steam space:
 Material steel Thickness 13 Pitch of stays 23½ x 22 How are stays secured on + in Working pressure by rules 180.9 lb Material of stays steel
 Diameter at smallest part 3.54 Area supported by each stay 51.4 Working pressure by rules 189.9 lb Material of Front plates at bottom steel
 Thickness 13 Material of Lower back plate steel Thickness 15 Greatest pitch of stays 14½ x 10½ Working pressure of plate by rules 185 lb
 Diameter of tubes 3¼ Pitch of tubes 4½ x 4¼ Material of tube plates steel Thickness: Front 13 Back 13 Mean pitch of stays 9 x 9½
 Pitch across wide water spaces 14½ Working pressures by rules 215.4 lb Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 8½ x 2 Length as per rule 30 Distance apart 11½ Number and pitch of Stays in each Two 8½
 Working pressure by rules 183 lb Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked
 separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet
 holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —
 Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

DONKEY BOILER— No. Description
Made at By whom made When made Where fixed
Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves
No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can enter the donkey boiler
Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength
Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets
Lap of plating Per centage of strength of joint Rivets Thickness of shell crown plates Radius of do. No. of Stays to do.
Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint
Thickness of furnace crown plates Stayed by Working pressure of shell by rules
Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— One set of coupling bolts & nuts, two each top end, bottom end & main bearing bolts & nuts, one set each feed & bilge pump valves, boiler & condenser tubes & fire bars, one propeller shaft & propeller & assorted bolts & iron.

The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.

Walter Beathings

Dates of Survey while building During progress of work in shops - 1905. Nov. 17. Dec. 8, 14, 21, 22, 28. - 06 - Jan. 8, 10, 12, 15, 16, 17, 19, 22, 24, 26, 29, 30, 31. Feb. 1, 2, 5, 6, 15.
During erection on board vessel - 20, 22, 28. Mch 26.
Total No. of visits 29
Is the approved plan of main boiler forwarded herewith yes.
" " " donkey " " " yes.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Machinery of this Vessel has been constructed under special survey, the material and workmanship sound & good, the Boilers and steam pipes have been tested by Hydraulic pressure in accordance with the Rules & the Machinery worked satisfactorily at the moorings, and the Safety Valves of the Main and Donkey Boilers have been adjusted under steam to their working pressure, and easing gear fitted.

This Vessel is Eligible in my opinion to have the notation of * L M C 3.06 in the Register Book -

It is submitted that this vessel is eligible for THE RECORD L M C 3.06

The amount of Entry Fee. £ 3 :
Special £ 35 : 8 :
Donkey Boiler Fee £ :
Travelling Expenses (if any) £ :

When applied for,

13.3.06

When received,

15.3.06

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

MACHINERY CERTIFICATE WRITTEN.



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