

REPORT ON MACHINERY.

FRI. 14 JAN 1910

No. 24307

Date of writing Report 28 Dec 1909 When handed in at Local Office 31 Dec 1909 Port of Sunderland
No. in Survey held at Sunderland. Date, First Survey 1st September 09 Last Survey 31 May 1910
Reg. Book. on the S/S "Benwood" (Number of Visits 3)
Master R. Owen Built at Middlesbrough By whom built Craig Taylor & Co. Ltd. Tons Gross 3869.40 Net 2412.80
Engines made at S'land. By whom made H. E. M. Eng. Co. Ltd. when made 1909
Boilers made at S'land. By whom made H. E. M. Eng. Co. Ltd. when made 1909
Registered Horse Power Owners Joseph Fowler & Co. Ltd. Port belonging to Liverpool
Nom. Horse Power as per Section 28 342 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ENGINES, &c.—Description of Engines In C.P.A.

Dia. of Cylinders 24. 40. 66 Length of Stroke 45 Revs. per minute 65. Dia. of Screw shaft as per rule 13.83 Material of S as fitted 148 screw shaft
Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes 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 yes If two
liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 4' 9"
Dia. of Tunnel shaft as per rule 12.11 as fitted 12.4 Dia. of Crank shaft journals as per rule 12.72 as fitted 13 Dia. of Crank pin 15 Size of Crank webs 19 1/2 x 8 Dia. of thrust shaft under
collars 13 Dia. of screw 17 3/4 Pitch of Screw 17 3/4 No. of Blades 4 State whether moveable f Total surface 94 1/2
No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes
No. of Donkey Engines 3 Sizes of Pump (2) 7 1/2 x 5 x 6, (1) 8 1/2 x 11 x 10 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 of 3 1/2 In Holds, &c. two of 3 1/2 each
1. Tunnel

No. of Bilge Injections 1 sizes 4 1/2 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2
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
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 yes
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
Dates of examination of completion of fitting of Sea Connections 10/11/09 of Stern Tube 7.12.09, Screw shaft and Propeller 7.12.09
Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons Ltd.

Total Heating Surface of Boilers 5604 1/2 Is Forced Draft fitted No. No. and Description of Boilers 3. S. E.
Working Pressure 180 lbs Tested by hydraulic pressure to 360 Date of test 12.11.09 No. of Certificate 2792
Can each boiler be worked separately yes Area of fire grate in each boiler 45 1/2 No. and Description of Safety Valves to
each boiler 2 Spring Area of each valve 4.9 Pressure to which they are adjusted 185 Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 2 feet Mean dia. of boilers 13.9 1/2 Length 11 ft Material of shell plates S
Thickness 1 3/8 Range of tensile strength 28 1/2-32 Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams 2.7. lap
long. seams 2.7. butt Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 8 1/4 Lap of plates on width of butt straps 1' 6"
Per centages of strength of longitudinal joint rivets 85.4 plate 86.4 Working pressure of shell by rules 180 Size of manhole in shell 16 x 12 end
Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 plain Material S Outside diameter 3' 5 1/2"
Length of plain part top 6' 8 3/4 bottom 6' 0 Thickness of plates crown 4 1/4 bottom 4 1/4 Description of longitudinal joint weld No. of strengthening rings
Working pressure of furnace by the rules 182 Combustion chamber plates: Material S Thickness: Sides 2 3/32 Back 3/4 Top 2 3/32 Bottom 1 1/8
Pitch of stays to ditto: Sides 8 1/2 x 11 Back 10 1/2 x 10 1/2 Top 8 1/2 x 11 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180
Material of stays S Area Diameter at smallest part 2.1 Area supported by each stay 94 1/2 Working pressure by rules 182 End plates in steam space:
Material S Thickness 1 1/8 Pitch of stays 22 1/2 x 19 1/2 How are stays secured 2 nuts Working pressure by rules 181 Material of stays S
Area Diameter at smallest part 8.48 Area supported by each stay 446.8 Working pressure by rules 196 Material of Front plates at bottom S
Thickness 3/4 Material of Lower back plate S Thickness 2 3/32 Greatest pitch of stays 14 x 10 1/2 Working pressure of plate by rules 188
Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates S Thickness: Front 3/4 Back 3/4 Mean pitch of stays 9 1/2 x 9
Pitch across wide water spaces 14 1/2 Working pressures by rules 192 Girders to Chamber tops: Material S Depth and
thickness of girder at centre 8" x 2 Length as per rule 302 Distance apart 11 1/2 Number and pitch of stays in each 2 @ 8 1/2
Working pressure by rules 182 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 180 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

VERTICAL DONKEY BOILER—

Manufacturers of Steel

None

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

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 _____ Plates _____

Working pressure of shell by rules _____ 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 _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 1 Set connecting rod bolts + nuts, 1 Set main bearing bolts + nuts, 1 Set coupling bolts + nuts, 1 Set feed + bilge pump valves, propeller, nuts bolts and assorted iron.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO LTD

G. M. P. & Co. Ltd. Manufacturer.

Dates of Survey while building { During progress of work in shops - 1909. Sept. 1, 6, 14, 21, 24, 30, Oct. 5, 6, 14, 16, 25, Nov. 1, 3, 8, 9, 11, 12, 15, 24, 26, 29, Dec. 1, 3, 8, 10, 13, 15, 18
During erection on board vessel - 1909. Oct. 6, 25, 1910. July 3.
Total No. of visits 28

Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts—Cylinders 17.9.09. Slides 17.9.09. Covers 17.9.09. Pistons 15/10/09. Rods 30.9.09.
Connecting rods 15.10.09. Crank shaft 7.11.09. Thrust shaft 8.11.09. Tunnel shafts 8.11.09. Screw shaft 8.11.09. Propeller 3.12.09.
Stern tube 11.11.09. Steam pipes tested 13.12.09. Engine and boiler seatings 10.12.09. Engines holding down bolts 10.12.09.
Completion of pumping arrangements 18.12.09. Boilers fixed 10.12.09. Engines tried under steam 18.12.09.
Main boiler safety valves adjusted 18.12.09. Thickness of adjusting washers P.B. 3/16. S.B. 3/16. C.B. 3/16. S.B. 3/16.
Material of Crank shaft S Identification Mark on Do. A. 4.89. Material of Thrust shaft S Identification Mark on Do. K.H. 11.09.
Material of Tunnel shafts S Identification Marks on Do. R. 12.09. Material of Screw shafts S Identification Marks on Do. R. 5.11.09.
Material of Steam Pipes Copper. Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c.) Machinery and boilers built under special survey. Materials & workmanship good. Engines & boilers examined under full steam found satisfactory.

It is submitted that this vessel is now eligible for the record of L.M.C. 1.10

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1.10

Date of build for machinery to be last date of survey viz 3 Jan 1910

APR 3

14.1.10

The amount of Entry Fee ... £ 3 : - : When applied for, 31 Dec. 1909
Special ... £ 37.2. :
Donkey Boiler Fee ... £ : : When received, 8.1.10
Travelling Expense (if any) £ : :

Committee's Minute

TUES. 18 JAN 1910

Assigned

+ L.M.C. 1.10

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



Lloyd's Register
Foundation