

REPORT ON MACHINERY.

No. 51609.

WED. 19 SEP 1906

Port of Newcastle

Received at London Office

No. in Survey held at Newcastle Date, first Survey Jan 15 Last Survey Sep 12 1906
Reg. Book. (Number of Visits 30)

on the 3/5 "Sakkarah" Gross 4691 Tons Net 3001 When built 1906
Master Kopp Built at Newcastle By whom built Armstrong Whitworth & Co

Engines made at Newcastle By whom made Waldend Slip. Eng Co Z.N. 629 when made 1906

Boilers made at do By whom made Palmer Co Job No. 409 when made 1906

Registered Horse Power 478 Owners Deutsche Dampfschiffahrts-Gesellschaft Port belonging to Hamburg

Nom. Horse Power as per Section 28 478 Is Refrigerating Machinery fitted no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Inclpd. No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 27.45.75 Length of Stroke 48 Revs. per minute 64 Dia. of Screw shaft 15 1/8 Material of screw shaft S.

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 5'5"

Dia. of Tunnel shaft 13.4 Dia. of Crank shaft journals 13.27 14.86 Dia. of Crank pin 14.5 Size of Crank webs 29 1/2 x 9 3/4 Dia. of thrust shaft under collars 14.2 Dia. of screw 18 1/2 Pitch of screw 18 1/2 No. of blades 4 State whether moveable yes Total surface 110 sq.

No. of Feed pumps two Diameter of ditto 7 x 9 1/2 Stroke 21 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 24 Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 10 x 4 x 12 1/2 5 1/2 x 3 1/2 x 5 5 x 5 x 5 8 x 9 x 8 ballast. No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 of 32 In Holds, &c. nos 1-2-3-2 of 32 700 4 20/32

No. of bilge injections 1 sizes 8 Connected to condenser, or to circulating pump ep Is a separate donkey suction fitted in Engine room & size yes 32

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 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 Newcastle 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.) Total Heating Surface of Boilers 650 sq. Is forced draft fitted yes

No. and Description of Boilers three, single-ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 2/16/06 Can each boiler be worked separately yes Area of fire grate in each boiler 58.5 sq. No. and Description of safety valves to each boiler 2 Spring Area of each valve 11.04 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 2 feet Mean dia. of boilers 14'-3 1/2" Length 11'-6" Material of shell plates Steel

Thickness 1 5/16" Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams S. Lap long. seams S.B.S.T. Rivd

Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 7/16" Lap of plates or width of butt straps 20 1/2"

Per centages of strength of longitudinal joint rivets 89.6 plate 85.4 Working pressure of shell by rules 206 lbs Size of manhole in shell 18 x 16 x 12

Size of compensating ring McNeil No. and Description of Furnaces in each boiler 3-Modsons Material Steel Outside diameter 8'-9 1/4"

Length of plain part top ✓ bottom ✓ Thickness of plates crown 9 1/16" bottom 9 1/16" Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 192 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 15/16"

Pitch of stays to ditto: Sides 8 x 7 1/2" Back 8 x 7 1/2" Top 7 1/2 x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 220 lbs

Material of stays Steel Diameter at smallest part 1.450" Area supported by each stay 590" Working pressure by rules 193 lbs End plates in steam space:

Material Steel Thickness 1 1/16" Pitch of stays 15 1/2 x 14" How are stays secured S. N. Working pressure by rules 230 lbs Material of stays Steel

Diameter at smallest part 5.270" Area supported by each stay 2100" Working pressure by rules 250 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 13 3/16" Working pressure of plate by rules 217 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 1/2 x 3 5/8" Material of tube plates Steel Thickness: Front 1" Back 3/4" Mean pitch of stays 7 7/16"

Pitch across wide water spaces 13" Working pressures by rules 212 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2 x 1 1/2" Length as per rule 30 1/2" Distance apart 8" Number and pitch of Stays in each 3-7 1/4"

Working pressure by rules 188 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately ✓

Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint 2020 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 Report attached.
 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 _____ Plates _____ 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:— 1 set connecting rod bolts & nuts. 2 main bearing bolts & nuts. 1 set coupling bolts & nuts. set of valves for the pump. spare beige pump valves. propeller shaft. nuts bolts and assorted iron

The foregoing is a correct description,

Manufacturer.

Thainig.

Dates of Survey while building
 During progress of work in shops— 1906. Jan. 15. 16. Feb. 21. Mch. 26. 28. Apr. 26. May 11. 23. 30. 31. June 1. 15. 18. July 9. 12. 14. 20. 26. 27. Aug 3. 8. 17.
 During erection on board vessel— 21. 24. 27. 28. 31. Sep. 3. 5. 10. 12.
 Total No. of visits 32
 Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " Yes.

General Remarks (State quality of workmanship, opinions as to class, &c. Machinery and boilers.)
Constructed under special survey. Materials and workmanship good. Engines and boilers examined under full steam & found satisfactory. In my opinion this vessel is now eligible for the record of R.L.M.C. 9/06.

It is submitted that this vessel is eligible for THE RECORD R.L.M.C. 9.06. F.D. ELEC. LIGHT.

Pub. 19.9.06
19.9.06

Newcastle-on-Tyne.

The amount of Entry Fee... £ 3 : : :
 Special ... £ 43 : 8 : : :
 Donkey Boiler Fee ... £ : : : :
 Travelling Expenses (if any) £ : : : :
 When applied for, 18 SEP 1906
 When received, 22.9.06

Thomas Field - G. Lindley
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI, 21 SEP 1906
 Assigned + L.M.C. 9.06
F.D. Elec. Light



Certificate (if registered) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)