

REPORT ON MACHINERY.

No. 9269

Received at London Office MON. DEC. 29. 1913

Date of writing Report 19 When handed in at Local Office 24/12/13 Port of Grimsby
 No. in Survey held at Grimsby Date, First Survey 27/6/13 Last Survey 22/12 1913
 Reg. Book. on the SS. Helgiani (Cochrane H.N. 589) (Number of Visits 40)
 Master Built at By whom built When built
 Engines made at Grimsby By whom made St. Central Co. op. E. H. R. C. H. when made 1913
 Boilers made at do: By whom made do: when made 1913
 Registered Horse Power Owners St. Central Co. op. E. H. R. C. H. Port belonging to Grimsby
 Nom. Horse Power as per Section 28 75 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion Inverted No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 12-2 1/2-3 1/4 Length of Stroke 24 Revs. per minute 112 Dia. of Screw shaft as per rule 7.05 as fitted 7.375 Material of screw shaft Iron
 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 33
 Dia. of Tunnel shaft as per rule 6.3 as fitted Dia. of Crank shaft journals as per rule 6.61 as fitted Dia. of Crank pin 4 Size of Crank webs 4 1/4 x 13 Dia. of thrust shaft under collars 4 Dia. of screw 8-6 Pitch of Screw 10-9 No. of Blades 4 State whether moveable no Total surface 28A
 No. of Feed pumps 1 Diameter of ditto 2 1/8 Stroke 24 Can one be overhauled while the other is at work
 No. of Bilge pumps 1 Diameter of ditto 2 1/8 Stroke 24 Can one be overhauled while the other is at work
 No. of Donkey Engines 1 Sizes of Pumps 6 x 3 1/2 + 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 sea hotwell bilge In Holds, &c. 2 forehold stowroom

No. of Bilge Injections 1 sizes 3 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 2 1/2 ejector
 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 none
 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 rich steam exhaust How are they protected wood casings
 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 29.9.13. of Stern Tube 29.9.13 Screw shaft and Propeller 29/9/13

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from
 OILERS, &c.—(Letter for record 5) Manufacturers of Steel Phoenix Abt. Horder Verein Horder

Total Heating Surface of Boilers 1340 Is Forced Draft fitted no No. and Description of Boilers one SE return tube
 Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb. Date of test 13.11.13 No. of Certificate 120

Can each boiler be worked separately Area of fire grate in each boiler 35.0 No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 3.98 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 8 Mean dia. of boilers 12-6 Length 10-0 Material of shell plates 5

Thickness 1 3/32 Range of tensile strength 28/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
 long. seams tr. butt Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 3/4 Lap of plates or width of butt straps 16 5/8

Per centages of strength of longitudinal joint rivets 87.0 plate 85.5 Working pressure of shell by rules 194 Size of manhole in shell 12 x 16
 Size of compensating ring 16 x 16 x 1 1/8 No. and Description of Furnaces in each boiler 2 plain Material 5 Outside diameter 43

Length of plain part top 3.70 Thickness of plates crown 3/4 Description of longitudinal joint welded No. of strengthening rings none
 Working pressure of furnace by the rules 181 Combustion chamber plates: Material 5 Thickness: Sides 2/32 Back 2/32 Top 2/32 Bottom 13/16

Pitch of stays to ditto: Sides 9 1/4 x 8 3/4 Back 9 x 8 3/4 Top 9 1/4 x 8 3/4 stays are fitted with nuts or riveted heads nuts Working pressure by rules 184
 Material of stays 5 Diameter at smallest part 2.1 Area supported by each stay 81 Working pressure by rules 207 End plates in steam space:

Material 5 Thickness 1 1/8 Pitch of stays 17 1/2 x 8 How are stays secured 9 nuts + washers Working pressure by rules 190 Material of stays 5
 Diameter at smallest part 6.6 Area supported by each stay 320 Working pressure by rules 215 Material of Front plates at bottom 5

Thickness 1 Material of Lower back plate 5 Thickness 15/16 Greatest pitch of stays 16 Working pressure of plate by rules 180
 Diameter of tubes 3/4 Pitch of tubes 4 1/2 Material of tube plates 5 Thickness: Front 1 Back 3/4 Mean pitch of stays 9

Pitch across wide water spaces 1 1/4 Working pressures by rules 190 Girders to Chamber tops: Material 5 Depth and thickness of girder at centre 2 (9 x 3/4) Length as per rule 31.5 Distance apart 8 1/4 Number and pitch of stays in each 2-9 1/4
 Working pressure by rules 223 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
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

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

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date of writing

No. in Reg. Book.

27 Sep 0

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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 _____ Radius of do. _____ Stayed by _____

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

SPARE GEAR. State the articles supplied:— 2mo top and bottom end and main bearing bolts & nuts, a set of coupling bolts & nuts, feed circulating air pump, and relief valves, safety valves & springs, studs and assorted bolts & nuts

The foregoing is a correct description, The Great Central Co. of Eng Ship Repairing Co Manufacturer. Mo W Punge

1913

Dates of Survey while building: During progress of work in shops - June 27-30 July 7-10-15-18-21-22-29 Aug 6-11-16-21-26-29 Sep 4-11-19-20-23-25-29-30 Oct 2-15-22-25-28-29 Nov 4-6-13

During erection on board vessel - Nov 6-11-13-17-19-22 Dec 4-22

Total No. of visits _____ Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders HP 11-8-13 MP 11-8-13 LP 4-9-13 Slides MP 3-4-9-13 LP 20-9-13 Covers 20-9-13 Pistons 16-8-13 20-9-13 Rods 11-8-13

Connecting rods 20-9-13 Crank shaft 22-10-13 Thrust shaft 3-11-13 Tunnel shafts ✓ Screw shaft 23-8-13 Propeller 11-9-13

Stern tube 4-9-13 Steam pipes tested 20/11/13 Engine and boiler seatings at Hull Engines holding down bolts 19-11-13

Completion of pumping arrangements 22-11-13 Boilers fixed 19-11-13 Engines tried under steam 22-11-13

Main boiler safety valves adjusted 22-11-13 Thickness of adjusting washers Both 1/32"

Material of Crank shaft pmc steel, nob / journals Identification Mark on Do. N. 646 Material of Thrust shaft Iron Identification Mark on Do. 3-11-13

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 23-8-13

Material of Steam Pipes solid drawn copper-6 1/2" Test pressure 360 lbs!

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery has been built under special survey, and the material and workmanship are good.

The boiler has been built in accordance with the approved plan of duly tested material.

The machinery seen fitted on board the vessel in an efficient manner, and is eligible in my opinion for record of + LMC 12-13.

This machinery is a duplicate of that fitted in the St. Glahan. Pms report N. 9067 ✓

It is submitted that this vessel is eligible for **THE RECORD. + LMC. 12. 13.**

JWR 30/10/13

GRB

Chambers

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

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

The amount of Entry Fee ... £ 1 : - : When applied for, 24/2/13

Special ... £ 11 : 5 : When received, 14/4/14

Donkey Boiler Fee ... £ : : 16

Travelling Expenses (if any) £ : : 16

Committee's Minute FRI. JAN. 30. 1914

Assigned + LMC. 12. 13

MACHINERY CERTIFICATE WRITTEN

