

Rpt. 4.

# REPORT ON MACHINERY.

No. 53291.

Port of Newcastle on Tyne

Received at London Office TUES. 30 JUL 1907

No. in Survey held at Newcastle Date, first Survey Jan 25 Last Survey 27 July 1907  
 Reg. Book. on the Steel S.S. "Townburg" (Number of Visits 30)  
 Master H. J. Locken Built at Newcastle By whom built Swan Hunter & W Richardson Ltd When built 1907  
 Engines made at Newcastle By whom made Swan Hunter & W Richardson Ltd when made 1907  
 Boilers made at D. By whom made D. when made 1907  
 Registered Horse Power 403 Owners Hansa Co. Port belonging to Bremen  
 Nom. Horse Power as per Section 28 403 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 26 - 42½ - 70 Length of Stroke 48 Revs. per minute 62 Dia. of Screw shaft as per rule 14-67 Material of Steel  
 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 Yes 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 Yes Length of stern bush 68  
 Dia. of Tunnel shaft as per rule 13 Dia. of Crank shaft journals as per rule 13 65 Dia. of Crank pin 13 7/8 Size of Crank webs 8 7/8 Dia. of thrust shaft under  
 collars 14 1/8 Dia. of screw 18-0 Pitch of Screw 19-0 No. of Blades 4 State whether moveable Yes Total surface 90 1/4  
 No. of Feed pumps 2 Diameter of ditto 3½ Stroke 28 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4½ Stroke 28 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps 9 7/8 x 5 7/8 x 1 1/4 - 9 7/8 x 1 3/4 x 2 3/4 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 7 - 3½ In Holds, &c. In each hold - two 3½. Tunnel Well. One 3.  
 No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump C.P. 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 Yes  
 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 ford bilge pipes How are they protected strong 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 8-6-07 of Stern Tube 8-6-07 Screw shaft and Propeller 8-6-07  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform.

BOILERS, &c.—(Letter for record R) Manufacturers of Steel J. Spencer & Son  
 Total Heating Surface of Boilers 5356 1/4 Is Forced Draft fitted Yes No. and Description of Boilers Two. Cyl. S. Ends.  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 28-5-07 No. of Certificate 7496  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 60.5 1/4 No. and Description of Safety Valves to  
 each boiler Two Spring Area of each valve 9-62 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 24 Outside Mean dia. of boilers 15-3 Length 12-0 Material of shell plates S  
 Thickness 1 5/16 Range of tensile strength 28 3/4 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams d lap  
 long. seams d shap Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 1/4 Lap of plates or width of butt straps 20 5/8  
 Per centages of strength of longitudinal joint rivets 91 Working pressure of shell by rules 200 Size of manhole in shell 16 x 12  
 Size of compensating ring 9 x 1 5/16 No. and Description of Furnaces in each boiler 3 Suspension Material S Outside diameter 47 1/2  
 Length of plain part top 37 Thickness of plates crown 3 1/4 Description of longitudinal joint weld No. of strengthening rings Yes  
 Working pressure of furnace by the rules 192 Combustion chamber plates: Material S Thickness: Sides 2 1/32 Back 5/8 Top 2 1/32 Bottom 3 1/32  
 Pitch of stays to ditto: Sides 7 1/8 x 7 1/8 Back 7 3/4 x 7 1/8 Top 8 3/4 x 7 1/8 If stays are fitted with nuts or riveted heads nut Working pressure by rules 220  
 Material of stays Iron Diameter at smallest part 2-03 Area supported by each stay 67 Working pressure by rules 228 End plates in steam space:  
 Material S Thickness 3 1/32 Pitch of stays 16 1/2 x 14 1/8 How are stays secured d n x w Working pressure by rules 180 Material of stays S  
 Diameter at smallest part 5-56 Area supported by each stay 245 Working pressure by rules 226 Material of Front plates at bottom S  
 Thickness 3 1/4 Material of Lower back plate S Thickness 15 1/16 Greatest pitch of stays as per plan Working pressure of plate by rules 180  
 Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 1/16 Material of tube plates S Thickness: Front 3 1/32 Back 3/4 Mean pitch of stays 9 9/16  
 Pitch across wide water spaces 13 1/2 Working pressures by rules 184 Girders to Chamber tops: Material S Depth and  
 thickness of girder at centre 11 x 13 1/8 Length as per rule 33 1/2 Distance apart 8 3/4 Number and pitch of stays in each 3 - 7 5/8  
 Working pressure by rules 214 Superheater or Steam chest; how connected to boiler - Can the superheater be shut off and the boiler worked  
 separately Yes 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 -



# VERTICAL DONKEY BOILER—Manufacturers of Steel

No. *The* Description *Please see attached sheet.*

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:— *Tail shaft, crank shaft, Propeller blade, two top end, two bottom end, two main bearings & one set coupling bolts, feed & bilge valves, piston rings, slide rods, various hoses, pump links, assorted bolts & nuts, a few bars of iron & other gear.*

The foregoing is a correct description,

*J. H. Hunter & W. G. Richardson, Ltd.* Manufacturer.

Dates of Survey { During progress of work in shops - *1907 Jan 28 Feb 7 11 20* }  
 { During erection on board vessel - *Mar 8 14 1907 Apr 9 15 29 May 26 19 24 28 31* }  
 while building { Total No. of visits *30* }  
 Is the approved plan of main boiler forwarded herewith *yes* ✓  
 " " " donkey " " " *yes* ✓

Dates of Examination of principal parts—Cylinders *29-4-07* Slides *29-4-07* Covers *29-4-07* Pistons *29-4-07* Rods *29-4-07*  
 Connecting rods *29-4-07* Crank shaft *9-4-07* Thrust shaft *13-5-07* Tunnel shafts *13-5-07* Screw shaft *13-5-07* Propeller *8-6-07*  
 Stern tube *23-5-07* Steam pipes tested *16-5-07* Engine and boiler seatings *8-6-07* Engines holding down bolts *4-23-7-07*  
 Completion of pumping arrangements *23-7-07* Boilers fixed *23-7-07* Engines tried under steam *23-27-7-07*  
 Main boiler safety valves adjusted *23-7-07* Thickness of adjusting washers *P<sup>5</sup> 3/8 9/16 5/8 7/16 5/8*  
 Material of Crank shaft *Steel* Identification Mark on Do. *1584-PA-2-07* Material of Thrust shaft *Steel* Identification Mark on Do. *J. H. H. 1907*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *J. H. H. 1907* Material of Screw shafts *S* Identification Marks on Do. *J. H. H. 1907*  
 Material of Steam Pipes *Steel* Test pressure *540 (Tested at Swansea)*

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

*The material & workmanship is good.*  
*The Machinery has been built under special survey & is eligible in my opinion for classification & the record + I.M.C. 7-07.*

It is submitted that this vessel is eligible for THE RECORD.

*+ LMC 707*

*Elec. light*

*J.D.*

*J.H.H. 30/7/07*

*30.7.07*

The amount of Entry Fee.. £ *3* : : When applied for, *26<sup>th</sup> July 1907*  
 Special .. £ *40* : *3* : When received, *27<sup>th</sup> July 1907*  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : :  
 TUES. JUL 30 1907

Committee's Minute

Assigned

*John H. Heck*

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



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MACHINERY CERTIFICATE WRITTEN.