

# REPORT ON MACHINERY.

No. 49715

Port of Newcastle-on-Tyne

Received at London Office 11th Nov 1905

No. in Survey held at South Shields Date, first Survey Mar 30 Last Survey Oct 18 1905  
(Number of Visits 31)

Reg. Book. on the S.S. TROJAN Tons { Gross 165  
Net 67  
When built 1905

Master Built at South Shields By whom built Hepple & Co Ltd  
Engines made at South Shields By whom made Hepple & Co Ltd when made 1905

Boilers made at South Shields By whom made J. F. Stringham & Co when made 1905

Registered Horse Power 34 Owners The Prodn Agents of the Colonies Port belonging to  
Government of Southern Nigeria  
Nom. Horse Power as per Section 28 3389 Is Refrigerating Machinery fitted no Is Electric Light fitted no

**ENGINES, &c.—Description of Engines** Compound No. of Cylinders 2 No. of Cranks 2

Dia. of Cylinders 13" X 26" Length of Stroke 18 Revs. per minute 110 Dia. of Screw shaft as per rule 5.9 Material of screw shaft as fitted 6.1/2 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 ✓ 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 25"

Dia. of Tunnel shaft as per rule 5.9 Dia. of Crank shaft journals as per rule 5.5 Dia. of Crank pin 5 3/4 Size of Crank webs 6 1/2 x 1 1/4 Dia. of thrust shaft under collars 5 3/4 Dia. of screw 6-6" Pitch of screw 10ft No. of blades 3 State whether moveable no Total surface 14.3 sq ft

No. of Feed pumps 1 Diameter of ditto 2 1/4" Stroke 9" Can one be overhauled while the other is at work ✓

No. of Bilge pumps 1 Diameter of ditto 2 1/4" Stroke 9" Can one be overhauled while the other is at work ✓

No. of Donkey Engines 1 Sizes of Pumps 4 1/2 x 2 3/4 x 4" duplex No. and size of Suctions connected to both Bilge and Donkey pumps no

In Engine Room on 2" In Holds, &c. on 2"

No. of bilge injections 1 sizes 3 1/2" Connected to condensers or to circulating pump no Is a separate donkey suction fitted in Engine room & size yes 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 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 14th Oct 1905 Is the screw shaft tunnel watertight machinery aft

Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.—** (Letter for record S) Total Heating Surface of Boilers 656 sq ft Is forced draft fitted no

No. and Description of Boilers 1 Single Ended Working Pressure 130 Tested by hydraulic pressure to 260

Date of test 17-7-05 Can each boiler be worked separately ✓ Area of fire grate in each boiler 30 sq ft No. and Description of safety valves to each boiler Two Spring loaded Area of each valve 4.9 Pressure to which they are adjusted 135 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean dia. of boilers 9'6" Length 9' Material of shell plates Steel

Thickness 3/4" Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams Lap D.R long. seams Lap T. riv

Diameter of rivet holes in long. seams 1/8" Pitch of rivets 4 1/2" Lap of plates or width of butt straps 7 7/8"

Per centages of strength of longitudinal joint rivets 75 Working pressure of shell by rules 133 Size of manhole in shell 12 x 16

Size of compensating ring 7 1/2 x 3/4 No. and Description of Furnaces in each boiler 2 Plain Material Steel Outside diameter 36"

Length of plain part top 6.8 1/4 bottom 7:10 1/4 Thickness of plates crown 9/16 Description of longitudinal joint Lap Single riveted No. of strengthening rings ✓

Working pressure of furnace by the rules 137 Combustion chamber plates: Material Steel Thickness: Sides 9/16 Back 1/2 Top 1/2 Bottom 2/32

Pitch of stays to ditto: Sides 9 7/8 x 12 Back 9 x 10 Top 10 x 10 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 135

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 10 x 9 Working pressure by rules 149 End plates in steam space: Material Steel Thickness 1 5/16 Pitch of stays 20 1/4 x 15 How are stays secured D. Nut & W' Working pressure by rules 131 Material of stays Steel

Diameter at smallest part 2 9/16 Area supported by each stay 16 x 18 5/8 Working pressure by rules 141 Material of Front plates at bottom Steel

Thickness 1 5/16 Material of Lower back plate Steel Thickness 1 5/16 Greatest pitch of stays 1 1/2 x 10 Working pressure of plate by rules 130

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4 x 4 5/8 Material of tube plates Steel Thickness: Front 1 5/16 Back 2 3/32 Mean pitch of stays 13 7/8 x 9 1/4

Pitch across wide water spaces 14" Working pressures by rules 140 Girders to Chamber tops: Material ✓ Depth and thickness of girder at centre ✓ Length as per rule ✓ Distance apart ✓ Number and pitch of Stays in each ✓

Working pressure by rules ✓ 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 \_\_\_\_\_ Percentage 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:— 2 Top end, 2 bottom end, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set pump valves, 1 set piston rings & springs  
Bolts, nuts & iron assorted

p.pro HEPPLÉ & CO. LTD, Engine Builders.  
W. S. Hepple  
MANAGING DIRECTOR

The foregoing is a correct description,  
J. S. E. Thompson  
Manufacturers of Boilers

Dates of Survey while building  
During progress of work in shops:— ENR. 1905. June 20, July 08, Aug 25, Sep. 19, 20, 27, Oct. 23, 29, 11, 14, 18  
During erection on board vessel:— B.H.R. 1905. Mch. 30, Apr. 6, 12, 27, May 3, 8, 15, 23, 25, 29, June 1, 8, 15, 20, July 6, 11, 17  
Total No. of visits:— 31  
Is the approved plan of main boiler forwarded herewith  Yes  
" " " donkey " " "

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
The machinery of this vessel has been built under special survey & in my opinion is eligible for record F.L.M.C. 10.05

It is submitted that this vessel is eligible for THE RECORD F.L.M.C. 10.05.

W.S.  
23.11.05  
J.S.  
23.11.05

Newcastle-on-Tyne

Certificate (if registered) 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 : : :  
Special .. .. £ 8 : : :  
Donkey Boiler Fee .. .. £ : : :  
Travelling Expenses (if any) £ : : :  
When applied for, 22 NOV 1905  
When received, 24/11/05  
FRI. 24 NOV 1905

G. A. Dayden Joyne  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
Assigned  
+ Lmb. 1005

