

# REPORT ON MACHINERY.

NO.

32702

Port of Newcastle on Tyne

WED. JAN 1 1896

Received at London Office

No. in Survey held at South Shields  
Reg. Book. "S.S. Champion"  
on the

Date, first Survey 4<sup>th</sup> July 1895 Last Survey December 25 1895  
(Number of Vols. 36)

Master W. F. Robertson Built at South Shields By whom built J. P. Remondens When built 1895  
Tons { Gross 306.76  
Net 16.22

Engines made at South Shields By whom made J. P. Remondens when made 12-1895

Boilers made at South Shields By whom made J. P. Ellingham when made 12-1895

Registered Horse Power 1000 Owners James & Alexander Brown Port belonging to Newcastle & S.W.

Nom. Horse Power as per Section 28 149

ENGINES, &c.— Description of Engines Triple - Surface condensing No. of Cylinders 3

Diameter of Cylinders 14 1/4, 28 1/2, & 44 Length of Stroke 33 Revolutions per minute 160 Diameter of Screw shaft as per rule 8-5  
as fitted 9

Diameter of Tunnel shaft as fitted 8 1/2 Diameter of Crank shaft journals 9 Diameter of Crank pin 9 Size of Crank webs 13 1/2 x 6 1/8

Diameter of screw 11-4 Pitch of screw 15-4 1/2 No. of blades 4 State whether moveable yes Total surface 36.77

No. of Feed pumps 2 Diameter of ditto 2 1/4 Stroke 16 1/2 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 Stroke 16 1/2 Can one be overhauled while the other is at work yes

No. of Donkey Engines one Sizes of Pumps duplex 5 1/2 x 8 1/2 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 - 2" dia In Holds, &c. one in fore hold & one in after hold 2" dia

No. of bilge injections 1 sizes 4 1/2 Connected to condenser or to circulating pump yes 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 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 none How are they protected yes

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 11-12-95 Is the screw shaft tunnel watertight no tunnel

Is it fitted with a watertight door yes worked from yes

OILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 2561

No. and Description of Boilers One Multi-Cyl Single ended Working Pressure 165 lbs Tested by hydraulic pressure to 330 lbs

Date of test 1-11-95 Can each boiler be worked separately yes Area of fire grate in each boiler 72.8 No. and Description of safety valves to each boiler two Adams spring

Area of each valve 8.94 Pressure to which they are adjusted 168 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean diameter of boilers 15-8 1/2"

Length 11-0" Material of shell plates steel Thickness 1 1/2 Description of riveting: circum. seams lap d. 7" long. seams double butt, 3 rows

Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 1/4 Top of plates on width of butt straps 28 1/2

Per centages of strength of longitudinal joint rivets 85 plate 82 Working pressure of shell by rules 193 lbs Size of manhole in shell 16 x 12"

Size of compensating ring 7 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 4 Purvis Material steel Outside diameter 39"

Length of plain part top 1 1/2 bottom 1 1/2 Thickness of plates crown 1 1/2 bottom 1 1/2 Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 178 lbs Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 3/4"

Pitch of stays to ditto: Sides 9 x 9" Back 8 1/2 x 9" Top 7 1/2 x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 166 lbs

Material of stays steel Diameter at smallest part 1 1/2 Area supported by each stay 70.0 Working pressure by rules 87 1/2 End plates in steam space:

Material steel Thickness 3/2 x 1 1/2 Pitch of stays 21 x 16 1/2 How are stays secured D.N.W Working pressure by rules 201 lbs Material of stays steel

Diameter at smallest part 2 3/2 Area supported by each stay 346.5 Working pressure by rules 164 lbs Material of Front plates at bottom steel

Thickness 1 1/2 Material of Lower back plate steel Thickness 5/8 Greatest pitch of stays 17" Working pressure of plate by rules 68 lbs

Diameter of tubes 3 1/2 Pitch of tubes 4 1/4 x 4 1/4 Material of tube plates steel Thickness: Front 1 1/2 Back 3/2 Mean pitch of stays 11 1/2"

Pitch across wide water spaces 14 1/2 Working pressures by rules 171 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 2 plates 7 x 1 1/2 Length as per rule 34 1/2

Distance apart 8" Number and pitch of Stays in each three 7 1/2"

Working pressure by rules 168 lbs Superheater or Steam chest; how connected to boiler none 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 —



**DONKEY BOILER—** Description *None fitted*

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 \_\_\_\_\_ Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_  
 Description of riveting long seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_  
 Lap of plating \_\_\_\_\_ Per centage 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:— *Two top end & two bottom end bolts, two main bearing bolts, one set of coupling bolts, one set of feed & one set of bilge pump valves and a quantity of assorted bolts & pieces of iron.*

The foregoing is a correct description,  
*J. H. Penoldson* Manufacturer of main engines *J. H. Penoldson & Co. Ltd.* Manufacturers of Main Engines

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The engines & boiler of this vessel have been constructed & fitted on board under special survey, the workmanship being sound & good throughout. This vessel has been fitted with a 24" centrifugal pump for salvage purposes. An electric lighting installation has been fitted by Messrs. Clarke Chapman & Co. The machinery has been tried under steam & found to work well which in our opinion renders the vessel eligible for the record of **L.M.C. 12-95** in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD. L.M.C. 12-95. Electric Light.*

*J.H. Penoldson* 1/1/96 *J.H. Penoldson* 1/1/96

Certificate (if required) to be sent to \_\_\_\_\_  
 The amount of Entry Fee. £ *7* : *0* : *9* When applied for, *31.12.95*  
 Special .. .. £ *22* : *7* : *9*  
 Donkey Boiler Fee .. .. £ .. .. When received, *6.1.96*  
 Travelling Expenses (if any) £ .. ..  
 Committee's Minute  
 Assigned *L.M.C. 12-95*

*Robert Harvey & Harry Clarke*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
 812, 21.54  
 MACHINERY CERTIFICATE  
 WRITTEN  
 FRI, JAN 3 1896  
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