

## REPORT ON MACHINERY.

Port of *Belfast*

WED 5 JUN 1895

Received at London Office 18

No. in Survey held at  
Reg. Book.*Belfast*Date, first Survey *18 Oct 1894* Last Survey *21 Jan 1895*(Number of Visits *15*)1 Sep. on the *Steel Screw Steamer "Hornston Grange"*Tons { Gross *3444*  
Net *2202*

Master

Built at

*Belfast*

By whom built

*Workman Clark & Co. Ltd*

When built

*1894*

Engines made at

*Belfast*

By whom made

*Workman Clark & Co. Ltd*

when made

*1894*

Boilers made at

*"*

By whom made

*"**"**"*

when made

*1894*

Registered Horse Power

*500*

Owners

*Houlder Bros & Co*

Port belonging to

*London*

Nom. Horse Power as per Section 28

*284**Fitting of Donkey Boilers*

## ENGINES, &amp;c.—

Description of Engines

No. of Cylinders

Diameter of Cylinders

Length of Stroke

Revolutions per minute

Diameter of Screw shaft

as per rule

Diameter of Tunnel shaft

as per rule

Diameter of Crank shaft journals

Diameter of Crank pin

Size of Crank webs

Diameter of screw

Pitch of screw

No. of blades

State whether moveable

Total surface

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

Sizes of Pumps

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

In Holds, &amp;c.

No. of bilge injections

sizes

Connected to condenser, or to circulating pump

Is a separate donkey suction fitted in Engine room &amp; size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel

Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers

How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight

Is it fitted with a watertight door

worked from

## DONKEY

## BOILERS, &amp;c.—

(Letter for record

Total Heating Surface of Boilers

No. and Description of Boilers *Horizontal Multitub. Donkey Boilers* Working Pressure *90 lb* Tested by hydraulic pressure to *180 lb*Date of test *20.12.94* Can each boiler be worked separately ☒ Area of fire grate in each boiler *36 sq ft* No. and Description of safety valves toeach boiler *Two. Adams design* Area of each valve *9.62 sq ft* Pressure to which they are adjusted *90* Are they fittedwith easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or woodwork *12* Mean diameter of boilers *11.0*Length *10.0* Material of shell plates *Steel* Thickness *3/16* Description of riveting: circum. seams *middle double long. seams* *treble lap*Diameter of rivet holes in long. seams *15/16* Pitch of rivets *4 1/4 x 2 1/8* Lap of plates or width of butt straps *6 1/16*Per centages of strength of longitudinal joint *84* Combined *76.9* Working pressure of shell by rules *91.6 lb* Size of manhole in shell *16" x 12"*Size of compensating ring *2.4 x 2.0 x 3/4* No. and Description of Furnaces in each boiler *Two plain* Material *Steel* Outside diameter *37"*Length of plain part *6.4* Thickness of plates *17/32* Description of longitudinal joint *Double straps* No. of strengthening rings *1*Working pressure of furnace by the rules *101* Combustion chamber plates: Material *Steel* Thickness: Sides *1/2* Back *15/32* Top *1/2* Bottom *1/2*Pitch of stays to ditto: Sides *9"* Back *8 5/8 x 8* Top *8 5/8 x 7 3/8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *95 lb*Material of stays *Steel* Diameter at smallest part *1 1/8* Area supported by each stay *69 sq in* Working pressure by rules *90* End plates in steam space:Material *Steel* Thickness *5/8* Pitch of stays *12 3/4 x 13* How are stays secured *Double nuts* Working pressure by rules *109* Material of stays *Steel*Diameter at smallest part *1 5/8* Area supported by each stay *162 1/2* Working pressure by rules *114* Material of Front plates at bottom *Steel*Thickness *9/16* Material of Lower back plate *Steel* Thickness *9/16* Greatest pitch of stays *as appx* Working pressure of plate by rules *90 lb*Diameter of tubes *3"* Pitch of tubes *4 1/4 x 4 3/8* Material of tube plates *Steel* Thickness: Front *5/8* Back *3/4* Mean pitch of stays *10 7/8*Pitch across wide water spaces *14 1/2* Working pressures by rules *90 lb* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre *5 1/2 x 1 1/4* Length as per rule *24 1/2* Distance apart *8 5/8* Number and pitch of Stays in each *Two at 7 3/8*Working pressure by rules *103 lb* Superheater or Steam chest; how connected to boiler *-* Can the superheater be shut off and the boiler workedseparately *-* Diameter *-* Length *-* Thickness of shell plates *-* Material *-* Description of longitudinal joint *-* Diam. of rivetles *-* 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

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:—

The foregoing is a correct description,

Manufacturer.

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

The above described donkey boiler has been made by Messrs Wm. Ruman Class K & Co. Ltd. under special survey & in accordance with the photograph forwarded herewith.

This boiler was not ready when the vessel left here new (Ref. Rep 444) but has now been forwarded & is stated to have been fitted on board in London. The safety valves were adjusted under steam before the boiler left the shop but should be readjusted & the satisfactory fitting of the boiler on board requires to be reported. When the survey has been completed in these respects the vessel will in any opinion be eligible for having the donkey boiler pressure of 90 lbs recorded in the Register Book.

PS This donkey boiler has been properly fitted please see Ref. Rep. No. 10794 24th Dec

Certificate (if required) to be sent to

|                                  |   |                   |
|----------------------------------|---|-------------------|
| The amount of Entry Fee. . . . . | : | When applied for, |
| Special . . . . .                | : | 18                |
| Donkey Boiler Fee . . . . .      | : | When received,    |
| Travelling Expenses (if any) £   | : | 18                |

*A. L. Jones*

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

Committee's Minute

FRI 27 JUN 1891

Signed



© 2019

Lloyd's Register Foundation