

## REPORT ON MACHINERY.

No. 6335

MON. 22 JUL 1907

Port of Belfast Received at London Office

No. in Survey held at Belfast Date, first Survey 10<sup>th</sup> Jan<sup>y</sup> Last Survey 10<sup>th</sup> July 1907

Reg. Book. J.B. Whakana (Number of Visits 47)

on the

Master Built at Belfast By whom built Workman Clark & Co Tons { Gross 6597.25 Net 4241.02 When built 1907

Engines made at Belfast By whom made " when made "

Boilers made at " By whom made " when made "

Registered Horse Power 650 Owners The Tyne Line L<sup>d</sup> Port belonging to London

Nom. Horse Power as per Section 28 650 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion of Cylinders 6 No. of Cranks 6

Dia. of Cylinders 20"-83½"-56" Length of Stroke 45 Revs. per minute 82 Dia. of Screw shaft 12.3 as per rule 12.3 Material of Steel as fitted 12.62 screw shaft

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 4-6"

Dia. of Tunnel shaft 11.7 as per rule 11.7 Dia. of Crank shaft journals 11.7 as per rule 11.7 Dia. of Crank pin 12 Size of Crank web 25x8 Dia. of thrust shaft under collars 12 Dia. of screw 14-9 Pitch of Screw 17-9 No. of Blades 3 State whether moveable Yes Total surface 5829 ft.

No. of Feed pumps 2 Diameter of ditto 8½ Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 Diameter of ditto 5 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 4 Sizes of Pumps 2 8x10 2x20 2 10x11 2 12x14 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4-8½ General 8x5x8 1-2½ 10-3½ Sanitary 6x4x6

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump Yes 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 Both (see letter)

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 For hold suction How are they protected Wood casing

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 27-6-07 of Stern Tube 27-6-07 Screw shaft and Propeller 27-6-07

Is the Screw Shaft Tunnel watertight Steel & L<sup>d</sup> Is it fitted with a watertight door Yes worked from Engine Room Top Platform

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel Glaziers & S. Co L<sup>d</sup>

Total Heating Surface of Boilers 9784 sq ft Forced Draft fitted Yes No. and Description of Boilers 4-Single End Cyl.

Working Pressure 200 lb Tested by hydraulic pressure to 400 lb Date of test 28-5-07 No. of Certificate 401

Can each boiler be worked separately Yes Area of fire grate in each boiler 61.5 sq ft No. and Description of Safety Valves to each boiler 2-12 inch Springs Area of each valve 9.62 sq Pressure to which they are adjusted 205 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 8" Mean dia. of boilers 15-0" Length 2'-0" Material of shell plates Steel

Thickness 1/2" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Left & Right

long. seams Butt & Lap Diameter of rivet holes in long. seams 1/32" Pitch of rivets 10" Lap of plates or width of butt straps 228"

Per centages of strength of longitudinal joint 80% Working pressure of shell by rules 246 lb Size of manhole in shell 16"x12"

Size of compensating ring McNeil No. and Description of Furnaces in each boiler 4-12 inch Material Steel Outside diameter 41 1/4"

Length of plain part top 10" Thickness of plates bottom 3/4" Description of longitudinal joint Weld No. of strengthening rings ✓

Working pressure of furnace by the rule 221 lb Combustion chamber plates: Material Steel Thickness: Sides 1/4" Back 1/6" Top 1/4" Bottom 3/8"

Pitch of stays to ditto: Sides 8x8 Back 8x8 Top 8x8 If stays are fitted with nuts or riveted heads Nuts & washers Working pressure by rules 214 lb

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by one stay 75 sq Working pressure by rules 247 lb End plates in steam space: Material Steel Thickness 1/2" Pitch of stays 22x18 How are stays secured Nuts & washers Working pressure by rules 227 lb Material of stays Steel

Diameter at smallest part 3 1/2" supported by one stay 369 sq Working pressure by rules 229 lb Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 237 lb

Diameter of tubes 2 1/2" Pitch of tubes 3 1/2"x3 3/4" Material of tube plates Steel Thickness: Front 1/4" Back 1/6" Mean pitch of stays 7 1/2"x7 1/4"

Pitch across wide water spaces 13 1/2" Working pressures by rules 200 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2"x(3x2) Length as per rule 34 1/2" Distance apart 8 1/4" Number and pitch of stays in each 3-8"

Working pressure by rules 241 lb 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

© 2020

Lloyd's Register  
W1058-0200  
Foundation



# VERTICAL DONKEY BOILER—

Manufacturers of Steel

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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *Propeller shaft, 2 blades, main crank pin bushes, main piston rod bushes, air pump bucket rod, 2 slide valves & spindles, 2 sets piston packing rings, Main Pump rod & bucket set, & all as per Lloyd's Rules*

The foregoing is a correct description,  
FOR WORKMAN, CLARK & CO., LIMITED  
*M. H. Bell* Manufacturer.

Dates of Survey while building { During progress of work in shops - - *Jan 10. 11. 14. 29 Feb 6. 8. 11. 13. 19. 22. 28 March 14. 21. 26. 27. April 4. 8. 11. 12. 12. 16. 19. 22. 23. 23. 24. 27. 29. May 1. 2. 9 up to 10 July 1907*  
During erection on board vessel - -  
Total No. of visits *47*

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *6' 4" 10-07* Pistons *10-07* Rods *10-07*  
Connecting Rods *3-7-07* Crank shaft *4-3-07* Thrust shaft *10-07* Tunnel shafts *10-07* Screw shaft *10-07* Propeller *16-4-07*  
Stern tube *16-4-07* Steam pipes tested *14-6-07* Engine and boiler seatings *27-6-07* Engines holding down bolts *25-6-07*  
Completion of pumping arrangements *27-6-07* Boilers fixed *27-6-07* Engines tried under steam *3-7-07*  
Main boiler safety valves adjusted *3-7-07* Thickness of adjusting washers *10-12-32*  
Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S 7-5-14* Material of Thrust shaft *Alto* Identification Mark on Do. *Alto*  
Material of Tunnel shafts *Alto* Identification Marks on Do. *Alto* Material of Screw shafts *Alto* Identification Marks on Do. *Alto*  
Material of Steam Pipes *W. Iron & Copper* Test pressure *600 lbs*

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

*The machinery of this vessel has been examined under Special Survey, and in accordance with the Rules. The workmanship is of good description, and an trial under steam in Belfast Lough the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 4-07*

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

ELEC LIGHT

LME 7.07

F.D.

The amount of Entry Fee. £ *3 : 0 :* When applied for, \_\_\_\_\_  
Special . . . . . £ *52. 10 :* \_\_\_\_\_  
Donkey Boiler Fee . . . . . £ \_\_\_\_\_ When received, \_\_\_\_\_  
Travelling Expenses (if any) £ \_\_\_\_\_

Committee's Minute

TUES. JUL 23 1907

Assigned

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



© 2020

Lloyd's Register  
Foundation

MACHINERY CERTIFICATE  
WRITTEN