

# REPORT ON MACHINERY.

No. 26442

THU. MAY. 6 - 1915

Received at London Office

- 5 MAY 1915

Port of

Sunderland.

Writing Report

10

When handed in at Local Office,

Date, First Survey 8<sup>th</sup> June 1914 Last Survey 30<sup>th</sup> April 1915

(Number of Visits 48)

Gross 4651

Tons Net 2885

When built 1915

when made 1915

when made 1915

Survey held at Sunderland.

on the *Steel Single 5. "Hartfield"*

By whom built *Bartram & Sons Ltd*

By whom made *J. Dickinson & Sons Ltd*

By whom made

rated Horse Power

Owners *Woodfield Shipping Co. Ltd*

Port belonging to *London*

Horse Power as per Section 28 *461*

Is Refrigerating Machinery fitted for cargo purposes *no*

Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines

*Tri C P 5*

No. of Cylinders *3*

No. of Cranks *3*

of Cylinders *27 1/2 45 75*

Length of Stroke *48*

Revs. per minute *70*

Dia. of Screw shaft

as per rule *14.89*

as fitted *15.8*

Material of screw shaft

*W. I.*

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

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

the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two

are fitted, is the shaft lapped or protected between the liners

Length of stern bush *5.3*

of Tunnel shaft

as per rule *13.5*

as fitted *13.4*

Dia. of Crank shaft journals

as per rule *14.18*

as fitted *14.2*

Dia. of Crank pin *14.3*

Size of Crank webs *9.4 x 2.6*

Dia. of thrust shaft under

s *14.2* Dia. of screw *17.9* Pitch of Screw *16.9*

No. of Blades *4*

State whether moveable *no*

Total surface *99 sq ft*

of Feed pumps *2*

Diameter of ditto *4.2*

Stroke *24*

Can one be overhauled while the other is at work *yes*

of Bilge pumps *2*

Diameter of ditto *5*

Stroke *24*

Can one be overhauled while the other is at work *yes*

of Donkey Engines *3*

Sizes of Pumps

*4.10.10 - 4.2 x 10 - 7.2 x 6*

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

Engine Room *four of 3.2*

In Holds, &c. *two of 3.2 in each*

of Bilge Injections *1*

sizes *4"*

Connected to condenser, or to circulating pump

*CP*

Is a separate Donkey Suction fitted in Engine room & size *yes 4"*

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

all connections with the sea direct on the skin of the ship *yes*

Are they Valves or Cocks *both*

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*

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*

all pipes are carried through the bunkers *none*

How are they protected

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *yes*

*yes*

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *yes*

*yes*

es of examination of completion of fitting of Sea Connections *17.3.15*

of Stern Tube *7.4.15*

Screw shaft and Propeller *7.4.15*

the Screw Shaft Tunnel watertight *yes*

Is it fitted with a watertight door *yes*

worked from *top platform*

MANUFACTURERS, &c.—(Letter for record *B*)

Manufacturers of Steel

*J. Spencer & Sons Ltd*

al Heating Surface of Boilers *7638*

Is Forced Draft fitted *no*

No. and Description of Boilers *3 Multitubular*

Working Pressure *180*

Tested by hydraulic pressure to *360*

Date of test *17.2.15*

No. of Certificate *3283 see Sld. Ltr 8/5/15*

each boiler be worked separately *yes*

Area of fire grate in each boiler *65 sq ft*

No. and Description of Safety Valves to

boiler *two Spring*

Area of each valve *8.3*

Pressure to which they are adjusted *185*

Are they fitted with easing gear *yes*

allest distance between boilers or uptakes and bunkers or woodwork *about 3 ft*

Mean dia. of boilers *15.9*

Length *11.9*

Material of shell plates *S*

seams *7.7*

Range of tensile strength *28 3/4 - 32*

Are the shell plates welded or flanged *no*

Descrip. of riveting: cir. seams *2.7 Lap*

seams *7.7*

Diameter of rivet holes in long. seams *1 5/16*

Pitch of rivets *8 1/16*

Lap of plates or width of butt straps *1.7 1/4*

centages of strength of longitudinal joint

plate *85.31*

Working pressure of shell by rules *181 lbs*

Size of manhole in shell *16 x 12*

of compensating ring *8 5/8 x 13.2*

No. and Description of Furnaces in each boiler *3 Cornug*

Material *S*

Outside diameter *4.2*

length of plain part

top *3.9*

bottom *3.9*

Thickness of plates

top *19*

bottom *32*

Description of longitudinal joint *weld*

No. of strengthening rings

Working pressure of furnace by the rules *189 1/2*

Combustion chamber plates: Material *S*

Thickness: Sides *16*

Back *16*

Top *16*

Bottom *18*

of stays to ditto: Sides *10 x 9*

Back *10 x 8*

Top *9 x 9*

If stays are fitted with nuts or riveted heads *nuts*

Working pressure by rules *181*

Material of stays *S*

Diameter at smallest part *1.6*

Area supported by each stay *98*

Working pressure by rules *186*

End plates in steam space:

Material *S*

Thickness *13 1/16*

Pitch of stays *20 x 18 1/2*

How are stays secured *d. nuts*

Working pressure by rules *181*

Material of stays *S*

meter at smallest part *2.92*

Area supported by each stay *370*

Working pressure by rules *188 1/2*

Material of Front plates at bottom *S*

Thickness *8*

Material of Lower back plate *S*

Thickness *29*

Greatest pitch of stays *14 3/8 x 10 3/8*

Working pressure of plate by rules *183*

Mean pitch of stays *9 x 9*

meter of tubes *3 1/4*

Pitch of tubes *4.2 x 4.2*

Material of tube plates *S*

Thickness: Front *7/8*

Back *7/8*

Mean pitch of stays *9 x 9*

Depth and

ch across wide water spaces *1.17*

Working pressures by rules *288*

Girders to Chamber tops: Material *S*

Number and pitch of stays in each *3 of 1 1/2*

Thickness of girder at centre *8 x 1 1/2*

Length as per rule *2 11 3/8*

Distance apart *9*

Can the superheater be shut off and the boiler worked

Working pressure by rules *182*

Superheater or Steam chest; how connected to boiler

Material

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

End plates: Thickness

How stayed

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Working pressure of end plates

Working pressure of end plates

Area of safety valves to superheater

Working pressure of end plates

Area of safety valves to superheater

Working pressure of end plates

Area of safety valves to superheater

Working pressure of end plates

Area of safety valves to superheater



## VERTICAL DONKEY BOILER—Manufacturers of Steel.

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fired \_\_\_\_\_

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 \_\_\_\_\_ Rivets \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ 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 \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_

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

SPARE GEAR. State the articles supplied:— Propeller & Shaft. top & bottom end bolts & nuts  
Set of main bearing bolts & nuts. Set of coupling bolts. Set of Seed pump  
and bilge pump valves. 3 Main & 3 donkey check valves. 2 Safety valves.  
Springs. 2 Escape valve Springs. nuts bolts & assorted iron ✓

The foregoing is a correct description,

*John Dickinson & Sons, Limited.*

Manufacturer.

Dates During progress of work in shops -- 1914 Jun. 8. 19. 25. 30. Jul. 2. 3. 13. 29. Aug. 7. 12. 14. 19. 21. Sep. 4. 10. 11. 28. 29  
During erection on board vessel --- Oct. 7. 9. 19. 27. Nov. 5. 23. 27. Dec. 7. 18. 28. 30. Jan. 5. 11. 28. Feb. 2. 15.  
Total No. of visits 19. 22. 25. 26. Mar. 2. 8. Apr. 12. 16. 17. 22. 27. 28. 30  
(48) Is the approved plan of main boiler forwarded herewith Yes ✓  
" " " donkey " " " Yes.

Dates of Examination of principal parts—Cylinders 28. 12. 14. Slides 28. 12. 14. Covers 5. 2. 15. Pistons 5. 2. 15. Rods 28. 2. 15  
Connecting rods 28. 2. 15 Crank shaft 2. 3. 15 Thrust shaft 2. 3. 15 Tunnel shafts 2. 3. 15 Screw shaft 2. 3. 15 Propeller 2. 1. 15  
Stern tube 31. 12. 14. Steam pipes tested 17. 4. 15 Engine and boiler seatings 22. 4. 15 Engines holding down bolts 22. 4. 15  
Completion of pumping arrangements 23. 4. 15 Boilers fixed 21. 4. 15 Engines tried under steam 22/4/15  
Main boiler safety valves adjusted 22. 4. 15 Thickness of adjusting washers R.B. f 5/16 of 1/16 C.B. f 3/8 of 1/8 S.B. 1/16 of 1/8  
Material of Crank shaft L.S. Identification Mark on Do. R.I.T.F. Material of Thrust shaft L.S. Identification Mark on Do. R.I.T.F.  
Material of Tunnel shafts L.S. Identification Marks on Do. R.I.T.F. Material of Screw shafts W.S. Identification Marks on Do. R.I.T.F.  
Material of Steam Pipes Copper ✓ Test pressure 400 lbs ✓

General Remarks (State quality of workmanship, opinions as to class, &c. Machinery and boilers  
built under special survey. Materials and workmanship  
good. Engines and boilers examined under full working  
conditions & found satisfactory.  
It is submitted that the record of L.M.C. 4.1915  
be granted by the Committee for this vessel.

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC 4.15.

The amount of Entry Fee .. £ 3 : : : When applied for, 1. 5. 1915  
Special .. £ 43 : 1 : :  
Donkey Boiler Fee .. £ : : : When received, 2. 5. 1915  
Travelling Expenses (if any) £ : : :  
Committee's Minute FRI. MAY. 7-1915  
Assigned + LMC 4.15

*J. Y. Tindley*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping



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