

REPORT ON MACHINERY.

No. 26442

THU. MAY 6 - 1915

Received at London Office

- 5 MAY 1915

Port of Sunderland.

Writing Report

When handed in at Local Office,

Date, First Survey 8th June 1914 Last Survey 30th April 1915

(Number of Visits 48)

Survey held at Sunderland.

on the Steel S/S. "Hartfield"

Gross 4651

Net 2885

When built 1915

Built at Sunderland By whom built Barram & Sons Ltd.

When made at Sunderland By whom made J. Dickinson & Sons Ltd.

When made at " By whom made "

Registered 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

Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft as per rule 1.489 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"

Dia. of Tunnel shaft as per rule 13.5 Dia. of Crank shaft journals as per rule 14.18 Dia. of Crank pin 14.5" Size of Crank webs 9 1/2 x 26" Dia. of thrust shaft under

of Feed pumps 2 Diameter of ditto 4 1/2" 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 1/2 x 10 - 4 1/2 x 10 - 4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room four of 3 1/2" In Holds, &c. two of 3 1/2" 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 sized 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

How are they protected ✓

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

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

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.

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 8/5/14.

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

least 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

Thickness 1 3/4" 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 2.7 d butt 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"

percentages of strength of longitudinal joint 92.46 Working pressure of shell by rules 181 lbs Size of manhole in shell 16 x 12"

of compensating ring 8 5/8 x 1 3/2 No. and Description of Furnaces in each boiler 3 Conoug Material S Outside diameter 4' 2"

Length of plain part top 3' 9" Thickness of plates 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 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 1 1/8"

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 1 3/16" Pitch of stays 20 x 18 1/2 How are stays secured d. nuts Working pressure by rules 181 Material of stays S

Material 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 5 Material of Lower back plate S Thickness 29 Greatest pitch of stays 14 3/8 - 10 3/8 Working pressure of plate by rules 183

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

each across wide water spaces 1' 1 1/4" Working pressures by rules 288 Girders to Chamber tops: Material S Depth and

Thickness of girder at centre 8 x 1 1/2 x 1 1/2 Length as per rule 2 11 3/8 Distance apart 9 Number and pitch of stays in each 3 of 1 1/2"

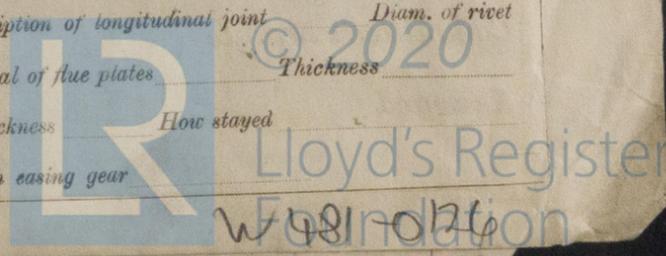
Working pressure by rules 182 Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

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



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 *attached* 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 *1/2"* 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.
of Survey while building	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.

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 2 3/8 S.B. 1/16 3/8*
 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.

JWD
JPR
 6/5/15.

The amount of Entry Fee .. £	3 :	When applied for,	
Special	£ 43 :	1 :	1.5.1915
Donkey Boiler Fee	£ :	When received,	
Travelling Expenses (if any) £	:	2.5.1915	

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

Committee's Minute FRI. MAY. 7-1915

Assigned

+ L.M.C. 4.15



Certificate (if required) to be sent to
 The Surveyors are requested not to write on or below the space for Committee's Minute.