

REPORT ON MACHINERY.

Doc. No. 54134
Spl. No. 13393

Port of West Hartlepool

Received at London Office **SAT. 18 JAN 1908**

No. in Survey held at Hartlepool
Reg. Book.

Date, first Survey 23rd May

Last Survey Jan 8th 1908

7th Sup. on the

S/S "Wora"

(Number of Visits 963)

Gross 3906
Net 2539
When built 1907

Master W. G. James

Built at Newcastle

By whom built R. Stephenson & Co. Ltd

Tons

Engines made at Hartlepool

By whom made Richardsons Welfarth & Co. Ltd

when made 1907-8

Boilers made at Hartlepool

By whom made Richardsons Welfarth & Co. Ltd

when made 1907-8

Registered Horse Power

Owners W. J. Symonds, T. Samuel & Co. Ltd

Port belonging to Cardiff

Nom. Horse Power as per Section 28 314

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

ENGINES, &c.—Description of Engines Direct Acting Triple Expansion

No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 25-40-67

Length of Stroke 45"

Revs. per minute 60

Dia. of Screw shaft as per rule 3.58 Material of S. Iron

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

on the propeller boss Yes If the liner is in more than one length are the joints burned Yes

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 Yes

Length of stern bush 4'-10"

Dia. of Tunnel shaft as per rule 11.99

Dia. of Crank shaft journals as per rule 12.589

Dia. of Crank pin 13"

Size of Crank webs 8x26 Dia. of thrust shaft under

collars 13"

Dia. of screw 16'-9" Pitch of Screw 16'-6"

No. of Blades 4 State whether moveable No Total surface 88.9 sq. ft.

No. of Feed pumps 2

Diameter of ditto 3"

Stroke 27"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 3 3/4"

Stroke 27"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2

Sizes of Pumps 6x4 4x9x10"

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

In Engine Room 3 - 3 1/2" dia

In Holds, &c no 1 Hold 2-3 1/2" no 2 Hold 2-3 1/2" no 3 Hold

-3 1/2" no 4 Hold 2-3 1/2" Tunnel well 1-2 1/4" Fore peak 1-2 1/2"

No. of Bilge Injections One sizes 5"

Connected to condenser, or to circulating pump Circulating a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"

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 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 Yes

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 No

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

Dates of examination of completion of fitting of Sea Connections 20/11/07

of Stern Tube 2.12.07

Screw shaft and Propeller 3.12.07

Is the Screw Shaft Tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from Cylinder platform

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel John Spencer & Sons Ltd

Total Heating Surface of Boilers 4849 sq. ft.

Is Forced Draft fitted No No. and Description of Boilers Two, Cylindrical Single ended

Working Pressure 166 lbs per sq. in.

Tested by hydraulic pressure to 330 lbs. Date of test 20/9/1907 No. of Certificate 3120

Can each boiler be worked separately Yes

Area of fire grate in each boiler 56.5 sq. ft.

No. and Description of Safety Valves to

each boiler Two, spring loaded Area of each valve 7.070

Pressure to which they are adjusted 170 lbs per sq. in. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-7"

Mean dia. of boilers 16'-0" Length 10'-6" Material of shell plates Steel

Thickness 1/32 Range of tensile strength 28.5/31.75

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams D.R. Lap

long. seams T.R.D.B.S.

Diameter of rivet holes in long. seams 1/32

Pitch of rivets 7/8"

Lap of plates or width of butt straps 17/8"

Per centages of strength of longitudinal joint

rivets 90.5

Working pressure of shell by rules 171 lbs.

Size of manhole in shell 16 1/2" x 13"

Size of compensating ring 30x29x1/32

No. and Description of Furnaces in each boiler 3, Bull. Material Steel Outside diameter 46 1/2"

Length of plain part top bottom

Thickness of plates top bottom 3 9/16"

Description of longitudinal joint Welded No. of strengthening rings Supp.

Working pressure of furnace by the rules 190.5

Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 19/32" Top 9/16" Bottom 13/16"

Pitch of stays to ditto: Sides 7/8" x 7/8"

Back 5/8" x 7/8" Top 7/8" x 7/8"

If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 194 lbs.

Material of stays Iron

Diameter at smallest part 1/2"

Area supported by each stay 8 1/2" x 7 1/2"

Working pressure by rules 171 lbs. End plates in steam space:

Material Steel

Thickness 15/16"

Pitch of stays 16 1/2" x 15 1/4"

How are stays secured D.N.W. Working pressure by rules 165.3 Material of stays Steel

Diameter at smallest part 2 1/2"

Area supported by each stay 16 1/2" x 15 1/4"

Working pressure by rules 194.5

Material of Front plates at bottom Steel

Thickness 13/16"

Material of Lower back plate Steel

Thickness 3/4"

Greatest pitch of stays 13" x 8 1/8" Working pressure of plate by rules 166.5

Diameter of tubes 3 1/4"

Pitch of tubes 12 1/2" x 4 3/8"

Material of tube plates Steel

Thickness: Front 7/8" Back 3/4" Mean pitch of stays 8 7/8"

Pitch across wide water spaces 14 3/16"

Working pressures by rules 166 lbs.

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 7 1/2" x 1 3/4"

Length as per rule 2'-6 1/2"

Distance apart 7 1/8"

Number and pitch of stays in each 3 - 7 1/4"

Working pressure by rules 174.5

Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

If stiffened with rings

Distance between rings

Working pressure by rules

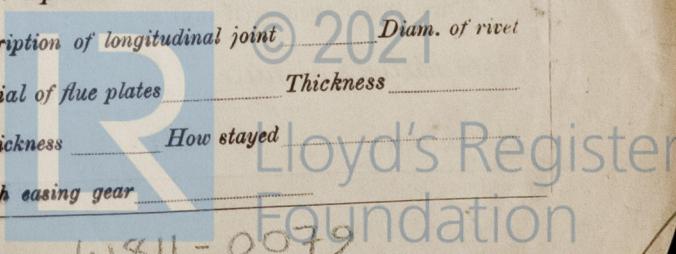
End plates: Thickness

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

R.W.O. 1210



W811-0079

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:—

Two top end bolts & nuts, 2 Bottom end bolts & nuts, Two main bearing bolts & nuts, spare coupling bolts & nuts, spare feed & bilge pump valves, assorted iron bolts & nuts, (see letter No. 23.1.08)

The foregoing is a correct description,

FOR RICHARDSONS, WESTGARTH & Co. LIMITED.

Manufacturer.

L. B. Huggitt

ASSISTANT GENERAL MANAGER.

Dates of Survey while building	During progress of work in shops—	1907 May 23, 24, 25, June 5, 11, 12, 14, 27, July 2, 5, 9, 11, 12, 15, 16, 18, 20, 23, 24, 29, 31, Aug. 1, 2, 12, 13, 14, 15, 16, 19, 21, 22, 26, 28, 29, 30, Sept. 2, 3, 5, 6, 9, 11, 13, 17
	During erection on board vessel—	Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 24, 25, 29, 31, Dec. 1, 5, 7, 8, 11, 12, 13, 14, 15, 18, 20, 21, 23, 24, 5, 6, 9, 10, 11
	Total No. of visits	93

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

Dates of Examination of principal parts—	Cylinders 11/10/07	Slides 11/10/07	Covers 11/10/07	Pistons 12/11/07	Rods 28/9/07
Connecting rods	28/9/07	Crank shaft 17/10/07	Thrust shaft 19/8/07	Tunnel shafts 6/12/07	Screw shaft 11/9/07
Propeller	18/7/07	Stern tube 8/11/07	Steam pipes tested 9/12/07	Engine and boiler seatings 2/12/07	Engines holding down bolts 9/12/07
Completion of pumping arrangements	11/12/07	Boilers fixed 11/12/07	Engines tried under steam 11/12/07	main boiler safety valves adjusted 11/12/07	Thickness of adjusting washers Port boiler 5 11/32 Star boiler 5 9/32
Material of Crank shaft	Steel	Identification Mark on Do. 4587	Material of Thrust shaft	Steel	Identification Mark on Do. 4587
Material of Tunnel shafts	Steel	Identification Marks on Do. 4587	Material of Screw shafts	S. Iron	Identification Marks on Do. 4587
Material of Steam Pipes	Wrought Iron	Test pressure 600 lbs per sq. in.			

General Remarks (State quality of workmanship, opinions as to class, &c. Workmanship good.)
 The Machinery and boilers of this vessel have been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in our opinion in safe working condition and the case is respectfully submitted for the notation **LMC 1.08** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD **LMb 1.08.**

J. B.
24.1.08
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24.1.08

P. J. Hudson & J. Robinson.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 3	When applied for	17 JAN 1908
Special	£ 25	When received	13/21 85
Donkey Boiler Fee	£ 14		
Travelling Expenses (if any)	£		

Committee's Minute
 Assigned
 FRI. 24 JAN 1908
 + Lmb 1.08



Certificate (if required) to be sent to Newcastle-on-Tyne.

The Surveyors are requested not to write on or below the space for Committee's Minute.