

# REPORT ON MACHINERY.

Port of West Hartlepool

Received at London Office DEC 12 1908

No. in Survey held at West Hartlepool

Date, first Survey 17<sup>th</sup> February, 1908 Last Survey 9<sup>th</sup> December, 1908

Reg. Book. S/S "Herribel"

(Number of Visits 87)

Master Blyth Built at Blyth By whom built Blyth S.B. Co. Ltd Tons 1908

Engines made at Hartlepool By whom made Richardsons, Melbourn & Co. Ltd when made 1908

Boilers made at Hartlepool By whom made Richardsons, Melbourn & Co. Ltd when made 1908

Registered Horse Power 327 Owners Huddart, Parker & Co. Proprietors Ltd Port belonging to Melbourne

Nom. Horse Power as per Section 28 327 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

R.W.9.C.1252

## ENGINES, &c.—Description of Engines Direct Acting Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 24"-39"-66" Length of Stroke 45 Revs. per minute 64 Dia. of Screw shaft 1 3/4" Material of 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

in 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 1/2"

Dia. of Tunnel shaft 12.07" as per rule 12.07" Dia. of Crank shaft journals 12.69" as per rule 12.69" Dia. of Crank pin 13 1/4" Size of Crank webs 22 1/2" x 9 1/2" Dia. of thrust shaft under

collars 1 1/4" Dia. of screw 17'-0" Pitch of Screw 17'-0" No. of Blades 4 State whether moveable No Total surface 90 sq

No. of Feed pumps 2 Diameter of ditto 3 3/4" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Bilge-pumps 2 Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 7 1/2 x 5 x 10, 7 x 4 1/2 x 8, 10 x 11 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 - 3 1/2 diam. In Holds, &c. 10 - 3 1/2 diam.

No. of Bilge Injections One sizes 6" 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

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

What pipes are carried through the bunkers None 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 See memo. Ltr 12/1/09 of Stern Tube 18/11/08 Screw shaft and Propeller 18/11/08

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Slider cover platform

## BOILERS, &c.—(Letter for record (7)) Manufacturers of Steel John Spencer & Sons.

Total Heating Surface of Boilers 5181 Is Forced Draft fitted No No. and Description of Boilers 3, Single ended Cylindrical

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 6/11/08 No. of Certificate 3151

Can each boiler be worked separately Yes Area of fire grate in each boiler 55 sq No. and Description of Safety Valves to

each boiler 2, Spring loaded Area of each valve 7.07 sq Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-9" Mean dia. of boilers 4'-6" Length 10'-6" Material of shell plates Steel

Thickness 1 1/32" Range of tensile strength 28/32 Tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.P. Riv.

long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 8 7/8" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 88.4 Working pressure of shell by rules 209 lbs. Size of manhole in shell 16 1/2" x 13"

Size of compensating ring 30 x 30 x 1 1/32" No. and Description of Furnaces in each boiler 3, Moniconic Material Steel Outside diameter 41 1/2" x 44 1/4"

Length of plain part top Thickness of plates bottom 9 1/16" Description of longitudinal joint Welded No. of strengthening rings Supp.

Working pressure of furnace by the rules 206 Combustion chamber plates: Material Steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 27/32"

Pitch of stays to ditto: Sides 7 1/2 x 8 3/4" Back 8 1/4 x 8 1/4" Top 7 1/2 x 8 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181.3 lbs.

Material of stays W. Iron Diameter at smallest part 1 5/8" Area supported by each stay 670" Working pressure by rules 232 lbs. End plates in steam space:

Material Steel Thickness 1 1/8" Pitch of stays 20 3/4 x 16 1/2" How are stays secured D.N.W. Working pressure by rules 183 lbs. Material of stays Steel

Diameter at smallest part 3" Area supported by each stay 20 3/4 x 16 1/2" Working pressure by rules 209 Material of Front plates at bottom Steel

Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 14" x 8 1/8" Working pressure of plate by rules 202

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates Steel Thickness: Front 15/16" Back 25/32" Mean pitch of stays 9 1/2" x 11 7/8"

Pitch across wide water spaces 14 1/2" Working pressures by rules 182 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8" x 1 3/4" Length as per rule 2'-7" Distance apart 8 1/4" Number and pitch of stays in each 3, 7 1/2"

Working pressure by rules 185 Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

If not, state whether, and when, one will be sent

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description *No donkey boiler fitted.*

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:— *One propeller and propeller shaft, 1/3" crank shaft, one air pump bucket and rod, one circulating pump bucket and rod, two top end bolts, two bottom end bolts, two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, one set of rimp & spruis for each piston, assorted bolts and nuts & Thomson's patent coupling.*

The foregoing is a correct description, *J. H. Morris*

Dates of Survey while building	During progress of work in shops—	1908 Jan. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Feb. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Mar. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Apr. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, June 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, July 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Sept. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
	During erection on board vessel—	1908 Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 1909 Jan. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Feb. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Mar. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Apr. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, June 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, July 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Sept. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
	Total No. of visits	87

Dates of Examination of principal parts—	Cylinders	22/10/08	Slides	2/10/08	Covers	22/10/08	Pistons	2/10/08	Rods	26/10/08	
Connecting rods	2/10/08	Crank shaft	15/10/08	Thrust shaft	14/10/08	Tunnel shafts	24/11/08	Screw shaft	28/10/08	Propeller	5/11/08
Stern tube	30/10/08	Steam pipes tested	7/12/08	Engine and boiler seatings	17/11/08	Engines holding down bolts	25/11/08				
Completion of pumping arrangements	8/12/08	Boilers fixed	8/12/08	Engines tried under steam	8/12/08						
Main boiler safety valves adjusted	8/12/08	Thickness of adjusting washers	7th. Boiler T.V. 3/8" Piston S.V. 3/8" Piston S.V. 3/8"								
Material of Crank shaft	S.M.S. Steel	Identification Mark on Do.	4687	Material of Thrust shaft	S.M.S. Steel	Identification Mark on Do.	4687				
Material of Tunnel shafts	S.M.S. Steel	Identification Marks on Do.	4687	Material of Screw shaft	Ball's Patent Iron	Identification Marks on Do.	4687				
Material of Steam Pipes	Lap welded wrought Iron	Test pressure	600 lbs per sq. in.								

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

To complete the Survey the feed and bilge pump valves (spare set) require to be put on board. This will be done at Blyth. Surveyors advised. *Examined on board. See memo dtd 12/11/09.*

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 **L.M.C.** (with date) on completion of the Survey.

It is submitted that this vessel is suitable for THE RECORD + L.M.C. 1.09.

Elec. light. *J.W.D. 12/11/09*

The amount of Entry Fee..	£ 3 : 0 : 0	When applied for,	11-12-1908
Special .. .. .	£ 36 : 7 : 9		
Donkey Boiler Fee ..	£ 39 : 7 : 9	When received,	15/11/09
Travelling Expenses (if any) £	:		

*J. H. Hudson*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 15 JAN 1909**  
Assigned *+ L.M.C. 1.09*



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