

# REPORT ON MACHINERY.

No. 4493

Port of MIDDLESBROUGH-ON-TEES

Received at London Office

THUR. 18 OCT 1906

No. in Survey held at Stockton

Date, first Survey 1<sup>st</sup> June

Last Survey

19

Reg. Book:

981 on the Steel S.S. "Millpool"

(Number of Visits)

Master O. Ovens

Built at Stockton

By whom built Wapner & Son

Gross 4217.93

Net 2707.03

When built 1906

Engines made at Stockton

By whom made Polain & Co Ltd

when made 1906

Boilers made at Stockton

By whom made Polain & Co Ltd

when made 1906

Registered Horse Power

Owners The Teal Shipping Co Ltd

Port belonging to W. Hartlepool

Nom. Horse Power as per Section 28 369

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

## ENGINES, &c.—Description of Engines

Direct acting Trip expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 25-42-68

Length of Stroke 4.8

Revs. per minute 56

Dia. of Screw shaft as per rule 14.3

Material of W. 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 ✓

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 5-4

Dia. of Tunnel shaft as per rule 12.72

Dia. of Crank shaft journals as per rule 13.35

as fitted 14

Dia. of Crank pin 14.5

Size of Crank webs 22.5 x 9.5

collars 14.5

Dia. of screw 17-6

Pitch of Screw 17.5 ft

No. of Blades 4

State whether moveable No

Total surface 92.5

No. of Feed pumps 2

Diameter of ditto 3.5

Stroke 3.4

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 4.5

Stroke 3.4

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2

Sizes of Pumps Two 4 x 8 Ballast 9 x 10

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

In Engine Room Three 3.5 diameter

In Holds, &c. Two each hold 3.5 diameter

One 3 diameter well

No. of Bilge Injections 1

sizes 6.5

Connected to condenser, or to circulating pump L.P.

Is a separate Donkey Suction fitted in Engine room & size Yes 4

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

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 Above

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 None

How are they protected ✓

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 16-8-06 of Stern Tube 20-8-06 Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight See ship report

Is it fitted with a watertight door Yes

worked from Top platform

## BOILERS, &c.—(Letter for record S)

Manufacturers of Steel John Wapner & Son Ltd

Total Heating Surface of Boilers 5999.5

Is Forced Draft fitted No

No. and Description of Boilers Two Cyl Tubular

Working Pressure 180 lb

Tested by hydraulic pressure to 360 lb

Date of test 10-8-06

No. of Certificate 3741

Can each boiler be worked separately Yes

Area of fire grate in each boiler 63.5

No. and Description of Safety Valves to

each boiler Two spring

Area of each valve 8.29

Pressure to which they are adjusted 185 lb

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2-6

Sea dia. of boilers 16-9

Length 11-6 Material of shell plates Steel

Thickness 1.5

Range of tensile strength 28/32

Are the shell plates welded or flanged No

long. seams D. Butt Strap

Diameter of rivet holes in long. seams 1.7/16

Pitch of rivets as per rule 9.7/8

Per centages of strength of longitudinal joint

rivets 86.8

plate 85.4

Working pressure of shell by rules 184 lb

Size of manhole in shell 17 x 13

Size of compensating ring 3 x 27 x 1.5

No. and Description of Furnaces in each boiler 3 Browns

Material Steel Outside diameter 3-9.5

Length of plain part

top 7-2

bottom 7-5.5

Thickness of plates

crowns 1.16

Description of longitudinal joint Welded

Working pressure of furnace by the rules 191 lb

Combustion chamber plates: Material Steel

Thickness: Sides 7/8

Back 7/8

Top 7/8

Bottom 1.3/16

Pitch of stays to ditto: Sides 9.5 x 8.5

Back 9.5 x 8.5

Top 9.5 x 8.5

If stays are fitted with nuts or riveted heads Nuts

Working pressure by rules 183 lb

Material of stays Steel

Diameter at smallest part 1.9/16

Area supported by each stay 80.9

Working pressure by rules 213 lb

End plates in steam space:

Material Steel

Thickness 1.5

Pitch of stays 23.5 x 22

How are stays secured 2 x 10

Working pressure by rules 182 lb

Material of stays Steel

Diameter at smallest part 3.5

Area supported by each stay 511.5

Working pressure by rules 188 lb

Material of Front plates at bottom Steel

Thickness 1.5

Material of Lower back plate Steel

Thickness 1.5

Greatest pitch of stays 17.5 x 8.5

Working pressure of plate by rules 193 lb

Diameter of tubes 3.5

Pitch of tubes 4.5 x 4.5

Material of tube plates Steel

Thickness: Front 1.5

Back 1.3/16

Mean pitch of stays 11.3/16

Pitch across wide water spaces 14.5

Working pressures by rules 189 lb

Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8.5 x 2

Length as per rule 33

Distance apart 9.5

Number and pitch of stays in each Three 8.5

Working pressure by rules 184 lb

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 ✓

Material ✓

Description of longitudinal joint ✓

holes ✓

Pitch of rivets ✓

Working pressure of shell by rules ✓

Diameter of flue ✓

Material of flue plates ✓

Thickness ✓

How stayed ✓

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 ✓

Working pressure of end plates ✓

Area of safety valves to superheater ✓

Are they fitted with easing gear ✓

Working pressure of end plates ✓

W.S.S.M. 3000-955M

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:— *Set of top and bottom end connecting rods bolts & nuts. Set of coupling bolts & nuts. Two main bearing bolts. Set of feed & bilge pump valves. H & M piston rings for piston springs. Propeller & propeller shaft &c &c*

The foregoing is a correct description,  
FOR BLAIR & CO., LIMITED.

*W. Borrie* Manufacturer of main engines & boilers

SECRETARY. 1906. June 4. 15 July 4. 10. 16. 17. 20. 23. 25. 26. Aug 3. 9. 10. 13. 14. 15. 16. 17. 27. 28. 31  
Sept 4. 6. 7. 14. 20. 21. 25. 26. Oct. 2. 4

Dates of Survey while building { During progress of work in shops - -  
During erection on board vessel - -  
Total No. of visits \_\_\_\_\_

Is the approved plan of main boiler forwarded herewith *No. 10.06*

Dates of Examination of principal parts—	Cylinders <i>4/7 9/7 9/8</i>	Slides <i>26/7</i>	Covers <i>4/7</i>	Pistons <i>26/7</i>	Rods <i>15/6</i>	
Connecting rods	<i>15/6</i>	Crank shaft <i>17/8</i>	Thrust shaft <i>16/7</i>	Tunnel shafts <i>13/8 14/8 15/8 17/8</i>	Screw shaft <i>28/8</i>	Propeller <i>17/8</i>
Stern tube	<i>25/7</i>	Steam pipes tested <i>6/9</i>	Engine and boiler seatings <i>28/8</i>	Engines holding down bolts <i>7/9</i>		
Completion of pumping arrangements	<i>26/9</i>	Boilers fixed <i>7/9</i>	Engines tried under steam <i>26/9</i>			
Main boiler safety valves adjusted	<i>26/9</i>	Thickness of adjusting washers <i>5/16 5/32 5/16 5/16 5/16 5/16 5/16 5/16</i>				
Material of Crank shaft <i>W. I.</i>	Identification Mark on Do. <i>5926</i>	Material of Thrust shaft <i>W. I.</i>	Identification Mark on Do. <i>5880</i>			
Material of Tunnel shafts <i>Scrap</i>	Identification Marks on Do. <i>5924</i>	Material of Screw shafts <i>W. I.</i>	Identification Marks on Do. <i>5929</i>			
Material of Steam Pipes <i>Copper, solid drawn</i>	<i>5923</i>	Test pressure <i>360 lbs</i>	<i>5920</i>			

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

*The machinery of this vessel has been constructed under special survey, the material and workmanship are good and efficient and when tested under steam was found satisfactory, and in my opinion eligible for the notation of F.M.C. 10.06 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD F.M.C. 10.06

*Geo. A. Milner*  
18.10.06  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee..	£ 3 : 0 : 0	When applied for, 16.10.1906
Special .....	£ 38 : 9 : 0	When received, 14.10.1906
Donkey Boiler Fee .....	£ : : :	
Travelling Expenses (if any) £	: : :	

Committee's Minute

FRI. 19 OCT 1906

Assigned

*+ L.M.B. 10.06*



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