

## REPORT ON MACHINERY.

No. 22714.

Port of *Hull*.

Received at London Office

WFIL 13 JUL 1910

No. in Survey held at

*Hull*

Date, first Survey

*Nov 20/08.*

Last Survey

*29<sup>th</sup> June 1910*

Reg. Book.

155 on the

*Steel Sc. Danube II*

(Number of Visits)

*86*

Gross

Tons

Net

Master

Built at

*Dartmouth*

By whom built

*Philip Son Ltd.*

When built

*1910*

Engines made at

By whom made

*Messrs*

when made

*1910*

Boilers made at

*Hull*

By whom made

*Earles & Co Ltd*

when made

*1910*

Registered Horse Power

Owners

*J. Constant*

Port belonging to

Nom. Horse Power as per Section 28

*94*

Is Refrigerating Machinery fitted for cargo purposes

*No*

Is Electric Light fitted

*Yes*

ENGINES, &amp;c.—Description of Engines

*Triple Expansion*

No. of Cylinders

*3*

No. of Cranks

*3*

Dia. of Cylinders

*15" x 24" x 40"*

Length of Stroke

*24"*

Revs. per minute

*120*

Dia. of Screw shaft

*9.5"*

as per rule

*8.2"*

Material of screw shaft

*Steel*

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

*No*

Is the after end of the liner made water tight

Is 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

If two

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

Length of stern bush

*50"*

Dia. of Tunnel shaft

as per rule

*7.4"*

Dia. of Crank shaft journals

as per rule

*4.48"*

Dia. of Crank pin

*4 1/8"*

Size of Crank webs

*15" x 5 1/2"*

Dia. of thrust shaft under

Collars

*7 1/8"*

Dia. of screw

*10'-0"*

Pitch of Screw

*12'-0"*

No. of Blades

*3*

State whether moveable

*No*

Total surface

*36 sq*

No. of Feed pumps

*Two*

Diameter of ditto

*2 1/4"*

Stroke

*18"*

Can one be overhauled while the other is at work

*Yes*

No. of Bilge pumps

*Two*

Diameter of ditto

*2 1/4"*

Stroke

*18"*

Can one be overhauled while the other is at work

*Yes*

No. of Donkey Engines

*One*

Sizes of Pumps

*6" x 4" x 6"*

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

In Engine Room

*Two 2"*

In Holds, &amp;c.

*One 2"*

In each, forward

*hold, aft hold, fore peak tank.*

No. of Bilge Injections

*1*

sizes

*3 1/2"*

Connected to condenser, or to circulating pump

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

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

*None*

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

*awash*

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*

How are they protected

*—*

What pipes are carried through the bunkers

*None*

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

*8.6.10*

of Stern Tube

*8.6.10*

Screw shaft and Propeller

*8.6.10*

Is the Screw Shaft Tunnel watertight

*None*

Is it fitted with a watertight door

*Yes*

worked from

*—*

BOILERS, &amp;c.—(Letter for record)

*5*

Manufacturers of Steel

*Phoenix Act. Westfalen*

Germany

*Germany*

Total Heating Surface of Boilers

*1590 sq*

Is Forced Draft fitted

*No*

No. and Description of Boilers

*One Cyl. Multi S. Ended**1740*

Working Pressure

*180 lbs*

Tested by hydraulic pressure to

*360 lbs*

Date of test

*10.5.10*

No. of Certificate

*1740*

Can each boiler be worked separately

*Yes*

Area of fire grate in each boiler

*50 sq*

No. and Description of Safety Valves to

Each boiler

*Two Spring*

Area of each valve

*4.9 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

*6"*

Mean dia. of boilers

*13'-6"*

Length

*11'-0"*

Material of shell plates

*Steel*

Thickness

*1 3/32"*

Range of tensile strength

*28-32*

Are the shell plates welded or flanged

*No*

Descrip. of riveting: cir. seams

*L.D.*

Long. seams

*O.B.S.J.R.*

Diameter of rivet holes in long. seams

*1 3/16"*

Pitch of rivets

*8 1/2"*

Lap of plates or width of butt straps

*17 1/2"*

Percentages of strength of longitudinal joint

rivets

*92*

plate

*85.2*

Working pressure of shell by rules

*181 lbs*

Size of manhole in shell

*16" x 12"*

Size of compensating ring

*7 1/2" x 1 3/32"*

No. and Description of Furnaces in each boiler

*2 Deighton's*

Material

*Steel*

Outside diameter

*4'-2 1/4"*

Length of plain part

*top*

Thickness of plates

*19"*

Description of longitudinal joint

*Welded*

No. of strengthening rings

*23*

Working pressure of furnace by the rules

*184 lbs*

Combustion chamber plates: Material

*Steel*

Thickness: Sides

*23 3/32"*

Back

*21 3/32"*

Top

*17 1/16"*

Bottom

*32*

Pitch of stays to ditto: Sides

*9 1/2" x 9 1/2"*

Back

*9 1/2" x 8"*

Top

*9 1/2" x 9 1/2"*

If stays are fitted with nuts or riveted heads

*Nuts*

Working pressure by rules

*193 lbs*

Material of stays

*Steel*

Diameter at smallest part

*1 1/2"*

Area supported by each stay

*76 sq*

Working pressure by rules

*185 lbs*

End plates in steam space:

*Steel*

Material

*Steel*

Thickness

*1 1/8"*

Pitch of stays

*18" x 17"*

How are stays secured

*D. N.*

Working pressure by rules

*185 lbs*

Material of stays

*Steel*

Diameter at smallest part

*2 1/16"*

Area supported by each stay

*306 sq*

Working pressure by rules

*211 lbs*

Material of Front plates at bottom

*Steel*

Thickness

*3 1/32"*

Material of Lower back plate

*Steel*

Thickness

*1 1/8"*

Greatest pitch of stays

*14 3/4" x 8"*

Working pressure of plate by rules

*184 lbs*

Diameter of tubes

*3 3/4"*

Pitch of tubes

*5 1/4" x 5 1/4"*

Material of tube plates

*Steel*

Thickness: Front

*3 1/32"*

Back

*1 1/16"*

Mean pitch of stays

*10 1/2"*

Pitch across wide water spaces

*14 3/4"*

Working pressures by rules

*184 lbs*

Girders to Chamber tops: Material

*Steel*

Depth and

*8" x 14 1/4"*

Length as per rule

*2'-6 1/2"*

Distance apart



# 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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	Plates
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 each top and bottom end connect rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each, air circulation feed and bilge pump valves, and a quantity of assorted bolts nuts etc

The foregoing is a correct description,

Manufacturer.

F. J. Palethorpe

Dates of Survey while building  
During progress of work in shops— 1908:— Nov 20. 25. Dec 7. 9. 17. 23. 1909:— Jan 8. 11. 22. 30. Feb 9. 15. 24. Mar 12. 19. 27. 31. Apr 5. 14. 21. 27. May 1. 5. 8  
During erection on board vessel— Jan 18. 20. 27. Feb 3. 10. 14. 17. 22. 23. 28. Mar 7. 9. 16. 23. Apr 4. 8. 21. 27. Mar 2. 4. 10. 25. 28. Jun 2. 4. 6. 10. 5. 9. 13.  
Total No. of visits 86.

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts— Cylinders 11.5.09 Slides 24.2.09 Covers 20.7.09 Pistons 5.4.09 Rods 24.2.09  
Connecting rods 19.3.09 Crank shaft 1.9.09 Thrust shaft 2.6.10 Tunnel shafts 2.6.10 Screw shaft 2.6.10 Propeller 6.6.10  
Stern tube 6.6.10 Steam pipes tested 15.6.10 Engine and boiler seatings 2.6.10 Engines holding down bolts 17.6.10  
Completion of pumping arrangements 28.6.10 Boilers fixed 17.6.10 Engines tried under steam 28.6.10  
Main boiler safety valves adjusted 17.6.10 Thickness of adjusting washers 3/8" - 1/16"

Material of Crank shaft Steel Identification Mark on Do. 2186 ATG Material of Thrust shaft Steel Identification Mark on Do. 2483. W  
Material of Tunnel shafts Steel Identification Marks on Do. 2482 W. Material of Screw shafts Steel Identification Marks on Do. 2482 W.  
Material of Steam Pipes Solid drawn Copper Test pressure 400 lbs per sq inch

**General Remarks** (State quality of workmanship, opinions as to class, &c. The engines and boiler of this vessel have been constructed under special supervision in accordance with the Rules, the materials and workmanship are sound and good. The boiler has been tested by hydraulic pressure, and with the engines secured on board and tested under steam they are now in good order, and safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of  $\frac{1}{2}$  L.M.C. 6.10 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.10

The amount of Entry Fee. £ 1 : :  
Special £ 14 : 11 :  
Donkey Boiler Fee £ : :  
Travelling Expenses (if any) £ : :  
When applied for. 12.7.1910  
When received. 21.7.1910

James Barclay  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

FRI 15 JUL 1910

+ L.M.C. 6.10



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