

# REPORT ON MACHINERY.

Received at London Office

WED. FEB. 28, 1912

Date of writing Report

19

When handed in at Local Office

27.2.12 to 12 Port of Glasgow

No. in Survey held at

Clydebank

Date, First Survey

19 June 1910

Last Survey

17 Feb 1912

Reg. Book.

on the *Steel Twin 1/2 Wiltshire*

(Number of Visits)

Gross 10390  
Net 6598

Master

Built at Clydebank

By whom built

John Brown & Co. Ltd.

When built 1912

Engines made at

Clydebank

By whom made

do

when made 1912

Boilers made at

do

By whom made

do

when made 1912

Registered Horse Power

Owners Federal Steam Nav Co

Port belonging to London

Nom. Horse Power as per Section 28

1264

Is Refrigerating Machinery fitted for cargo purposes

yes

Is Electric Light fitted

yes

## ENGINES, &c.—Description of Engines *Twin screw Quadruple Expansion* No. of Cylinders 8 No. of Cranks 8

Dia. of Cylinders *25-35 1/2-51-42* Length of Stroke *51* Revs. per minute *48* Dia. of Screw shaft *15 1/2* Material of screw shaft *steel*

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 *—* If two

liners are fitted, is the shaft lapped or protected between the liners *—* Length of stern bush *4'-6"*

Dia. of Tunnel shaft *13 5/8* Dia. of Crank shaft journals *14 1/2* Dia. of Crank pin *15 1/2* Size of Crank webs *29 1/2 x 10 1/2* Dia. of thrust shaft under

collars *14 1/2* Dia. of screw *14 1/2* Pitch of Screw *20-0* No. of Blades *4* State whether moceable *yes* Total surface *90 sq ft*

No. of Feed pumps *2 each* Diameter of ditto *4 1/2* Stroke *25 1/2* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2 each* Diameter of ditto *5* Stroke *25 1/2* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *6* Sizes of Pumps *1-14 1/2-18 x 15, 1-14 1/2-18 x 10, 1-4 1/2-4 x 10* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *3 of 3 1/2"* Strokehold *2 of 3 1/2"* In Holds, &c. *No 1-2 of 3 1/2", No 2-2 of 3 1/2", No 3-2 of 3 1/2"*

No 4-2 of 3 1/2", No 5-2 of 3 1/2", No 6-2 of 3 1/2", *1 of 3 1/2" in each tunnel, 1 of 3 1/2" in tunnel well.*

No. of Bilge Injections *1* sizes *12"* Connected to condenser, or to circulating pump *no* Is 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 *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 *both*

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 *bilge* How are they protected *under limber boards*

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 *30. 11. 11* of Stern Tube *30. 11. 11* Screw shaft and Propeller *30. 11. 11*

Is the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *upper deck*

## BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *D Colville Sons*

Total Heating Surface of Boilers *212780* Is Forced Draft fitted *yes* No. and Description of Boilers *Two Double ended*

Working Pressure *215 lbs* Tested by hydraulic pressure to *430 lbs* Date of test *1.3.11-17.3.11* No. of Certificate *10829-10868*

Can each boiler be worked separately *yes* Area of fire grate in each boiler *157.6 sq ft* No. and Description of Safety Valves to

each boiler *3 spring loaded* Area of each valve *11.04 sq in* Pressure to which they are adjusted *215 lbs* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *8'-0"* Mean dia. of boilers *17'-0"* Length *20'-6"* Material of shell plates *steel*

Thickness *1 3/4* Range of tensile strength *30 1/2/34 1/2 tons* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *DR+TR lap*

long. seams *DBS-TR* Diameter of rivet holes in long. seams *1 3/4* Pitch of rivets *10 1/2* Lap of plates or width of butt straps *24 1/2*

Per centages of strength of longitudinal joint *97.1* Working pressure of shell by rules *233* Size of manhole in shell *16 x 12*

Size of compensating ring *3'-6 1/2 x 2'-11"* No. and Description of Furnaces in each boiler *8 Brighton* Material *steel* Outside diameter *46 5/8*

Length of plain part *top* Thickness of plates *bottom* *16* Description of longitudinal joint *welded* No. of strengthening rings *—*

Working pressure of furnace by the rules *243* Combustion chamber plates: Material *steel* Thickness: Sides *5/8* Back *—* Top *5/8* Bottom *15/16*

Pitch of stays to ditto: Sides *7 1/2 x 7 1/2* Back *—* Top *7 1/2 x 7 1/2* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *240*

Material of stays *steel* Diameter at smallest part *1.48* Area supported by each stay *56* Working pressure by rules *215* End plates in steam space:

Material *steel* Thickness *1 3/4* Pitch of stays *16 1/2 x 16 1/2* How are stays secured *DN* Working pressure by rules *221* Material of stays *steel*

Diameter at smallest part *3 3/16* Area supported by each stay *270* Working pressure by rules *306* Material of Front plates at bottom *steel*

Thickness *15/16* Material of Lower back plate *—* Thickness *—* Greatest pitch of stays *—* Working pressure of plate by rules *—*

Diameter of tubes *2 1/2* Pitch of tubes *3 3/4 x 3 3/4* Material of tube plates *steel* Thickness: Front *13/16* Back *1"* Mean pitch of stays *9 3/8*

Pitch across wide water spaces *13 1/2* Working pressures by rules *292* Girders to Chamber tops: Material *steel* Depth and

thickness of girder at centre *2 plates 12 1/2 x 1 1/2* Length as per rule *4'-6"* Distance apart *4 1/2* Number and pitch of stays in each *6 of 7 1/2*

Working pressure by rules *223* 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 *—* Diam. of rivet

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

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 *—*

See also Rpt 3035

Steel  
plates  
line  
10.3

Lloyd's Register  
2020  
760 0042

**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 \_\_\_\_\_ 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:— 4 top end, 2 bottom end, 2 main bearing set of coupling bolts nuts set of feed & bilge pump valves - assorted iron bolts nuts - 2 valve spindles - 1 air pump rod - 1 pair bottom end brasses - 2 pairs top end brasses - Propeller shaft - 11 propeller studs nuts - 1 piston rod - 1 centrifugal pump shaft - set of valves for each auxiliary pump - Thrust shaft - double throw crank shaft.  
 The foregoing is a correct description,  
 John Brown & Company, Limited

Manufacturer. *J. Henderson*

Dates of Survey while building	During progress of work in shops	1910. June 16-22. July 12. Aug 11. 16-24. Sep 5-12-21. Oct 4. 12. 18. 25. Nov 2. 11. 15. 18. 21. 29. Dec 16.
	During erection on board vessel	1911. Jan 6. 16. Feb 1. 7. 15. 16. March 1. 7. 11. 15. 17. 31. Apr 10. May 4. 10. 17. 30. June 7. 14.
	Total No. of visits	July 3. Aug 29. Sep 4. 7. 28. Oct 3. 9. 17. Nov 13. 20. 27. 30. Dec 12. 15. 19. 1912. Jan 11.

Is the approved plan of main boiler forwarded herewith *Previously*    
 " " " donkey " " "

Dates of Examination of principal parts—Cylinders	10-4-11 5-7-11	Slides	4-9-11	Covers	4-9-11	Pistons	28-9-11	Rods	28-9-11
Connecting rods	29-8-11	Crank shaft	4-9-11	Thrust shaft	21-11-10	Tunnel shafts	29-10-10	Screw shaft	17-10-11
Stern tube	27-11-11	Steam pipes tested	11-3-11 5-2-12	Engine and boiler seatings	30-11-11	Engines holding down bolts	31-1-12		
Completion of pumping arrangements	31-1-12	Boilers fixed	31-1-12	Engines tried under steam	14-2-12				
Main boiler safety valves adjusted	31-1-12	Thickness of adjusting washers	DE 23/24 CV 7/16 AV 17/32 SB 27/32 CV 31/32 AV 31/32						
Material of Crank shafts	steel	Identification Mark on Do.	401	Material of Thrust shafts	steel	Identification Mark on Do.	401		
Material of Tunnel shafts	steel	Identification Marks on Do.	401	Material of Screw shafts	steel	Identification Marks on Do.	401		
Material of Steam Pipes	steel & iron	Test pressure	645 lbs						

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The machinery of this vessel has been constructed under special survey in accordance with the rules and approved plans enclosed and has been seen working satisfactorily under steam. Materials & workmanship are good.

The machinery of this vessel is eligible in my opinion to be classed + LMC 2.12.

It is submitted that this vessel is eligible for THE RECORD + LMC 2.12.  
 2DB & 2SB. F.D.

*J.W.D.*  
 29/2/12

The amount of Entry Fee	£ 3 : 0 :	When applied for,	
Special	£ 46 : 12 :	When received,	19-2-12
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		23-2-12

*Harry Clarke*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW** 27 FEB. 1912

Assigned + LMC 2.12

MADE BY WRITING



Glasgow

Certificate (if required) to be sent to

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

27/2/12