

REPORT ON MACHINERY

No. 33675

WED. FEB. 25. 1914

ing Report

19

When handed in at Local Office

23-2-1914 Port of Glasgow

Survey held at

Date, First Survey

12-11-13

Last Survey

16-2-1914

on the *Twin & Badora*

Built at *Dumbarton*

By whom built *Wm Denny & Bros*

Tons } Gross
Net

When built *1914*

made at *Dumbarton*

By whom made *Denny & Co*

when made *1914*

made at *do*

By whom made *do*

when made *1914*

ed Horse Power

Owners *Rivers Steam Navigation Co* Port belonging to *Calcutta*

Power as per Section 28

69.67

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ES, &c.—Description of Engines

Compound Twin Screw

2 Cy for Reg. Bk.
No. of Cylinders

2

No. of Cranks each ing

Cylinders *16 3/2*

Length of Stroke

21

Revs. per minute

Dia. of Screw shaft

as per rule

Material of

screw shaft

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

no liners

Is the after end of the liner made water tight

propeller boss

— If the liner is in more than one length are the joints burned

— If the liner does not fit tightly at the part

the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

— If two

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

Length of stern bush *2-1*

Tunnel shaft

Dia. of Crank shaft journals

as per rule

Dia. of Crank pin

Size of Crank webs

11 1/2 x 4

Dia. of thrust shaft under

as fitted *5 5/8*

Dia. of screw

6-0

Pitch of Screw

8-0

No. of Blades

State whether moveable

no

Total surface

13.5

Feed pumps

Diameter of ditto

3 1/2

Stroke

8

Can one be overhauled while the other is at work

yes

Bilge pumps

Diameter of ditto

3 1/2

Stroke

8

Can one be overhauled while the other is at work

—

Donkey Engines

Two

Sizes of Pumps

5 1/2 - 3 1/2 x 5 duplex

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

In Holds, &c.

Bilge Injections

sizes

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

connections with the sea direct on the skin of the ship

Are they Valves or Cocks

ey fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line

ey each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

pipes are carried through the bunkers

How are they protected

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

of examination of completion of fitting of Sea Connections

of Stern Tube

Screw shaft and Propeller

Screw Shaft Tunnel watertight

Is it fitted with a watertight door

worked from

ERS, &c.—(Letter for record)

Manufacturers of Steel *Wm Beardmore & Co Ltd*

Heating Surface of Boilers

1150

Is Forced Draft fitted

yes

No. and Description of Boilers

one - single ended

ing Pressure

130 lbs

Tested by hydraulic pressure to

260 lbs

Date of test

2-2-14

No. of Certificate

12528

each boiler be worked separately

Area of fire grate in each boiler

38

No. and Description of Safety Valves to

boiler

2 direct spring

Area of each valve

6.49

Pressure to which they are adjusted

Are they fitted with easing gear

least distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

11-10 3/8

Length

10-0 3/8

Material of shell plates

steel

ness

Range of tensile strength

28/32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

DR lap

seams

DBS, TR

Diameter of rivet holes in long. seams

7/8

Pitch of rivets

6

Lap of plates or width of butt straps

13

percentages of strength of longitudinal joint

91.5

Working pressure of shell by rules

144 lbs

Size of manhole in shell

14 x 13

Material of shell plates

steel

of compensating ring

34 x 34 x 1 1/8

No. and Description of Furnaces in each boiler

2 Brighton

Material

steel

Outside diameter

44 3/4

th of plain part

Thickness of plates

7/16

Description of longitudinal joint

welded

No. of strengthening rings

—

king pressure of furnace by the rules

140

Combustion chamber plates: Material

steel

Thickness: Sides

9/16

Back

9/16

Top

9/16

Bottom

7/8

of stays to ditto: Sides

8 1/2 x 9

Back

8 7/8 x 8 5/8

Top

9 1/2 x 8

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

130

erial of stays

iron

Diameter at smallest part

1.41

Area supported by each stay

46

Working pressure by rules

130

End plates in steam space:

erial

steel

Thickness

15/16

Pitch of stays

18 x 14 1/2

How are stays secured

DN + W

Working pressure by rules

130

meter at smallest part

4.91

Area supported by each stay

320

Working pressure by rules

159

Material of Front plates at bottom

steel

Thickness

25/32

Material of Lower back plate

steel

Thickness

23/32

Greatest pitch of stays

13 3/4

Working pressure of plate by rules

132

Mean pitch of stays

4 1/2

meter of tubes

2 3/4

Pitch of tubes

3 3/4 x 3 3/4

Material of tube plates

steel

Thickness: Front

25/32

Back

13/16

Mean pitch of stays

4 1/2

ch across wide water spaces

13 3/4

Working pressures by rules

280

Girders to Chamber tops: Material

steel

Depth and

—

Number and pitch of stays in each

3 of 8

Thickness of girder at centre

2 plates 7 1/2 x 3/4

Length as per rule

30

Distance apart

9 1/2

Can the superheater be shut off and the boiler worked

none

Superheater or Steam chest; how connected to boiler

—

Working pressure by rules

142

Superheater or Steam chest; how connected to boiler

—

Can the superheater be shut off and the boiler worked

—

Superheater or Steam chest; how connected to boiler

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
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
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 :—

The foregoing is a correct description,

Donkey Manufacturer.

Dates of Survey while building	During progress of work in shops - - -	1913. Nov. 12. 19. 26. Dec. 4. 11. 19. 30. 1914. Jan. 14. 23. 30. Feb. 2. 12. 16.
	During erection on board vessel - - -	
	Total No. of visits	13.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 4. 12. 13. Slides 30. 1. 14. Covers 4. 12. 13. Pistons 14. 1. 14. Rods 14. Connecting rods 4. 12. 13. Crank shaft 12. 2. 14. Thrust shaft 12. 2. 14. Tunnel shafts 14. 1. 14. Screw shaft 19. 12. 13. Propeller 19. Stern tube 19. 12. 13. Steam pipes tested (one) 16. 2. 14. Engine and boiler seatings. Engines holding down bolts. Completion of pumping arrangements. Boilers fixed. Engines tried under steam. Main boiler safety valves adjusted. Thickness of adjusting washers. Material of Crank shaft. Identification Mark on Do. and Material of Thrust shaft steel. Identification Mark on Do. 78. Material of Tunnel shafts steel. Identification Marks on Do. 784. Material of Screw shafts steel. Identification Marks on Do. 78. Material of Steam Pipes (one) Iron. Test pressure 390 lbs. ^{sq} in.

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

The engines and boiler of this vessel have been constructed under special survey in accordance with the rules and approved plans enclosed. Materials and workmanship are good.

This machinery is being shipped to Calcutta. When it has been fitted board; safety valves adjusted; engines tried under steam and arrangements made for protecting the intermediate shafts and for giving access to boiler of same the vessel will be eligible to have the notation +LMC (with donkey boiler).

The amount of Entry Fee .. £	1 : 0 :	When applied for,
2/3 Special £	6 : 18 :	24. 2. 19. 14.
Donkey Boiler Fee £	:	When received,
Travelling Expenses (if any) £	:	26. 2. 14.

Committee's Minute GLASGOW 24 FEB. 1914

Assigned Deferred for completion

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

TUE NOV. 17. 1914

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