

REPORT ON MACHINERY.

No. 33713.

WED. MAR. 11. 1914

Date of writing Report 9. 3. 14 When handed in at Local Office 9. 3. 14

Received at London Office

Port of Glasgow.

No. in Survey held at Reg. Book.

62 Sup. on the

S.S. "BANDRA"

Date, First Survey 11. 1. 13.

Last Survey 5. 3. 19 14.

(Number of Visits 64

Gross 3284

Net 1844

Master H. W. Talent

Built at Glasgow.

By whom built Barclay Curle & Co (Nº 504)

When built 1914.

Engines made at

Glasgow.

By whom made Barclay Curle & Co (Nº 504)

when made 1914

Boilers made at

do.

By whom made do (Nº 504)

when made 1914.

Registered Horse Power

526

Owners

British India S. N. Co. Ltd.

Port belonging to Glasgow.

Nom. Horse Power as per Section 28

524

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple Expansion Eng. Cond.

No. of Cylinders 3.

No. of Cranks 3.

Dia. of Cylinders 20". 34". 58".

Length of Stroke 45".

Revs. per minute 86

Dia. of Screw shaft

as per rule 13.1" as fitted 13.3"

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

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

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

Length of stern bush 4'-5"

Dia. of Tunnel shaft

as per rule 11.52" as fitted 12"

Dia. of Crank shaft journals

as per rule 12.1" as fitted 12.4"

Dia. of Crank pin

12.4"

Size of Crank webs

8 1/2 x 16 1/8"

Dia. of thrust shaft under

collars

12 1/4"

Dia. of screw

16'-3"

Pitch of Screw

15'-6"

No. of Blades 4

State whether moveable

Yes

Total surface

85 sq. ft.

No. of Feed pumps 2

Diameter of ditto

4 1/2"

Stroke

22 1/2"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps 2

Diameter of ditto

4 1/2"

Stroke

22 1/2"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines 3

Sizes of Pumps

1-9" x 11" x 2 1/2" 2-9" x 11" x 2 1/2" 3-9" x 11" x 2 1/2"

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

In Engine Room

2-3 1/2", 2-3 1/2" in stokehold

In Holds, &c.

Nº 1 - 2 x 13"; Nº 2 - 2 x 13"; Nº 3 - 2 x 13"

and 1-2 1/2" in Tunnel well.

No. of Bilge Injections 1

sizes 8"

Connected to condenser, or to circulating pump

pump

Is a separate Donkey Suction fitted in Engine room & size

Yes

1-4"

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

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

below

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

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

10. 11. 13

of Stern Tube

10. 11. 13

Screw shaft and Propeller

10. 11. 13.

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

P.R. upper deck level.

Manufacturers of Steel

Steel Co. of Scotland, Colville, Lanarkshire, Glasgow Iron Works Co.

Total Heating Surface of Boilers

Main: 7503

Aux.: 1571

Total: 9074

Is Forced Draft fitted

Yes

No. and Description of Boilers

3- Single India Marine

Working Pressure

215 lbs.

Tested by hydraulic pressure to

430 lbs.

Date of test

6. 8. 13.

No. of Certificate

12255.

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

62 sq. ft.

No. and Description of Safety Valves to

each boiler

Pair spring loaded

Area of each valve

8.29 sq. in.

Smallest distance between boilers or uptakes and bunkers or woodwork

12"

Mean dia. of boilers

15'-2"

Length

11'-6"

Material of shell plates

Steel

Thickenss

1 1/8"

Range of tensile strength

29/33

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

T.R.

long. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1 1/8"

Pitch of rivets

10"

Lap of plates or width of butt straps

23"

Per centages of strength of longitudinal joint

rivets 94.8

plates 83.75

Working pressure of shell by rules

251 lbs.

Size of manhole in shell

14" x 13"

Size of compensating ring

11" x 1 1/4"

No. and Description of Furnaces in each boiler

3- Morrison

Material

Steel

Length of plain part

top 23"

Thickness of plates

bottom 32"

Description of longitudinal joint

weld

No. of strengthening rings

11"

No. of rings

11"

No. of rings

11"

No. of rings

11"

No. of rings

11"

No. of rings

11"

Working pressure of furnace by the rules

242 lbs.

Combustion chamber plates: Material

Steel

Thickness: Sides

76

Back

76

Top

76

Bottom

1"

Pitch of stays to ditto: Sides

8' x 9"

Back

8 1/2' x 8 1/2"

Top

8' x 9"

Material of stays

Steel

Diameter at smallest part

1.76"

Area supported by each stay

72 sq. in.

Working pressure by rules

215 lbs.

End plates in steam space:

Material

Steel

Thickness

1 1/2"

Pitch of stays

18' x 15 1/4"

How are stays secured

D. N's

Working pressure by rules

232 lbs.

Material of Lower back plate

Steel

Thickness

76

Greatest pitch of stays

16' x 11"

Working pressure of plate by rules

318 lbs.

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4' x 3 3/4'

Material of tube plates

Steel

Thickness: Front

76

Back

76

Pitch across wide water spaces

13 1/2"

Working pressures by rules

297 lbs.

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

10' x 25" (dual)

Length as per rule

2'-8"

Distance apart

9"

Number and pitch of stays in each

3 at 8"

Working pressure by rules

241 lbs.

Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

separately

Yes

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

report.

W1091-0099

Lloyd's Register Foundation

W1091-0100

VERTICAL DONKEY BOILER—Manufacturers of Steel

No.	Description		By whom made		When made	Where fixed
Made at	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		
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:— 2 top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts, 1 set complete bolts, 1 set feed and high pump valves and seats, 1 set piston rings for each piston, 1 propeller shaft, 2 C.I. propeller blades, 1 air pump bucket & rod, 1 air pump head valve, 1 set valves and seats for all pumps, quantity of assorted bolts and nuts and iron of various sizes.

The foregoing is a correct description,

Manufacturer.

OR BARCLAY, GUNTER & CO., LTD.

Archibald G. G. Manager

Dates of Survey while building	During progress of work in shops - -	1913. Jan 16-24. Feb 1-4. 7. 18. 19. 25. 28. Mar 7-11. 14. 21. 27. 31. Apr 5. 11. 14. 22. May 8. 15. 19. 21. 27. June 3.
	During erection on board vessel - - -	5-10. 13. 24. July 10. 11. 14. 15. 30. 31. Aug 6. 11. 14. 15. 19. 26. 29. Sept 1. 9. 12. 16. 18. 19. 25. Oct 1. 2. 20. 28. Nov 4. 10. 20. 26.
	Total No. of visits	Dec. 12. 30. 1914. Jan 8. 14. 21. Mar 5.

Is the approved plan of main boiler forwarded herewith

auxiliary donkey

Dates of Examination of principal parts—Cylinders	28. 2. 13	Slides	18. 8. 13	Covers	28. 2. 13	Pistons	11. 4. 13	Rods	24. 5. 13
Connecting rods	22. 4. 13	Crank shaft	11. 4. 13	Thrust shaft	11. 4. 13	Tunnel shafts	21. 5. 13	Screw shaft	15. 8. 13
Stern tube	12. 9. 13	Steam pipes tested	30. 12. 13	Engine and boiler seatings	10. 11. 13	Engines holding down bolts	14. 1. 14		
Completion of pumping arrangements	14. 1. 14	Boilers fixed	8. 1. 14	Engines tried under steam	5. 3. 14				
Main boiler safety valves adjusted	21. 1. 14	Thickness of adjusting washers	S.A. $\frac{1}{2}$, $\frac{15}{32}$ P.A. $\frac{1}{2}$, $\frac{7}{16}$ P.F. $\frac{3}{16}$, $\frac{5}{8}$ Lin. $\frac{5}{16}$, $\frac{9}{16}$						
Material of Crank shaft	Steel	Identification Mark on Do.	Nº 5873 11. 4. 13 P.T.B.	Material of Thrust shaft	Steel	Identification Mark on Do.	Nº 5873 11. 4. 13 P.T.B.		
Material of Tunnel shafts	Steel	Identification Marks on Do.	Nº 5873 21. 5. 13 P.T.B.	Material of Screw shafts	Steel	Identification Marks on Do.	Nº 5873 15. 8. 13 P.T.B.		
Material of Steam Pipes	Lapwelded wrought iron.	Test pressure	645 lbs.						

General Remarks (State quality of workmanship, opinions as to class, &c.) The material and workmanship are good. The machinery and boilers of this vessel have been built under special survey in accordance with the Rules and approved plans, securely fitted aboard, and tried with satisfactory results under steam and are, in my opinion, suitable for classification with Record + L.M.C. 3, 14.

The machinery and boilers are duplicate of those fitted in S.S.'s "Bankura" and "Barjora". Gls. Rpts. Nºs 31542 & 31414.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 3, 14. F.D.

The amount of Entry Fee	£ 3. 0. 0	When applied for,	9. 3. 14
Special	£ 46. 4. 0	When received,	4/4/14 C.S.P. 6/4
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

Committee's Minute

Assigned + L.M.C. 3, 14

F.D.

MACHINERY CERTIFICATE WRITTEN

Surveyor's Signature

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



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GLASGOW

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