

REPORT ON MACHINERY.

No. 8322.

WED. MAR. 4-1914

Date of writing Report 26.2.14

When handed in at Local Office 3/3/14

Port of MIDDLESBRO

Received at London Office

17-1914

No. in Survey held at Reg. Book.

Stockton-on-Tees

Date, First Survey Nov. 19. 1913.

Last Survey Feb. 23. 1914.

1914.

38 Sup. on the

Steel Screw Steamer FRISIA

(S.S. No. 214)

(Number of Visits 38)

Gross 4985

Net 3137

When built 1914

Master

Built at Newcastle

By whom built Northumberland S.S. Co

Engines made at

Stockton

By whom made

Messrs Blair & Co Lim. (No. 1793)

when made 1914

Boilers made at

Stockton

By whom made

Messrs Blair & Co Lim.

when made 1914

Registered Horse Power

Owners

Hamburg Amerika line

Port belonging to

Hamburg

Nom. Horse Power as per Section 28

586

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Tri-compound

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 28-46½-78

Length of Stroke 54

Revs. per minute 65

Dia. of Screw shaft

as per rule 16.16

Material of

screw shaft

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 in one

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

tight fit

If two

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

Length of stern bush 5'-11"

Dia. of Tunnel shaft

as per rule 14.8

Dia. of Crank shaft journals

as per rule 15.53

Dia. of Crank pin 16½

Size of Crank webs 31½, 10½

Dia. of thrust shaft under

collars 16½

Dia. of screw 19'-0"

Pitch of Screw 19'-0"

No. of Blades 4

State whether moveable

no

Total surface 108 ft

No. of Feed pumps 2

Diameter of ditto 4"

Stroke 36

Can one be overhauled while the other is at work

yes

No. of Bilge pumps 2

Diameter of ditto 5"

Stroke 36

Can one be overhauled while the other is at work

yes

No. of Donkey Engines 2

Sizes of Pumps

Ballast 15" x 12"

Fuel 4½" x 10"

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

In Engine Room

3 @ 3½"

In Holds, &c.

2 @ 3½"

each hold; Tunnel one @ 2½"

Deep tank 2 @ 3½" and two tank (5" diam) filling & suction, all provided with blank flanges

No. of Bilge Injections 1

sizes 9½

Connected to condenser, or to circulating pump

yes

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

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

suctions to forward holds

How are they protected

wood ciling

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

20/1/14

of Stern Tube

29/1/14

Screw shaft and Propeller

9.2.14

Is the Screw Shaft Tunnel watertight

see hull Rpt

Is it fitted with a watertight door

yes

worked from top platform

BOILERS, &c.—(Letter for record (S))

Manufacturers of Steel Messrs John Spencer & Sons

Howden's System

Total Heating Surface of Boilers 7995

Is Forced Draft fitted

yes

No. and Description of Boilers

3 single ended

Working Pressure

200

Tested by hydraulic pressure to

400

Date of test

3.2.14

No. of Certificate

5229

Can each boiler be worked separately

yes

Area of fire grate in each boiler

61.5 ft

No. and Description of Safety Valves to

each boiler

2 direct spring

Area of each valve

11.04 ft

Pressure to which they are adjusted

205 lb

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

10'-0"

Mean dia. of boilers

15'-4½"

Length

11'-6"

Material of shell plates

steel

Thickness

1½"

Range of tensile strength

28½ - 32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

2-R. lap

long. seams

2 B-3 Riv

Diameter of rivet holes in long. seams

1½"

Pitch of rivets

9½"

Lap of plates or

width of butt straps

21 x 1½"

Per centages of strength of longitudinal joint

rivets

92.6

Working pressure of shell by rules

213

Size of manhole in shell

16" x 12"

Size of compensating ring

7½" x 1½"

No. and Description of Furnaces in each boiler

3 Morrison

Material

steel

Outside diameter

46 15/32"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

32

64

Description of longitudinal joint

Weld

No. of strengthening rings

✓

Working pressure of furnace by the rules

210

Combustion chamber plates: Material

steel

Thickness: Sides

4"

Back

32

Top

16"

Bottom

22"

Pitch of stays to ditto: Sides

7½" x 7½"

Back

7½" x 7½"

Top

8½" x 7"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

243

Material of stays

steel

Diameter at smallest part

1.69

Area supported by each stay

63

Working pressure by rules

214

End plates in steam space

Material

steel

Thickness

1½"

Pitch of stays

17" x 15"

How are stays secured

nuts & washers

Working pressure by rules

240

Material of stays

steel

Diameter at smallest part

7.24

Area supported by each stay

285

Working pressure by rules

265

Material of Front plates at bottom

steel

Thickness

1½"

Material of Lower back plate

steel

Thickness

1½"

Greatest pitch of stays

17" x 7½"

Working pressure of plate by rules

249

Diameter of tubes

2½"

Pitch of tubes

3¼" x 3¼"

Material of tube plates

steel

Thickness: Front

1½"

Back

27/32"

Mean pitch of stays

7½"

Pitch across wide water spaces

13½"

Working pressures by rules

222

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

7½" x 1½"

Length as per rule

28½"

Distance apart

9"

Number and pitch of stays in each

3 @ 7"

Working pressure by rules

217

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

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

Lloyd's Register
Foundation
W582-0161

VERTICAL DONKEY BOILER—

Manufacturers of Steel **NONE**

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fired _____

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:— *Two top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, 1 set of H.P. piston rings, a quantity of assorted bolts nuts & iron & spare propeller.*

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

Dates of Survey while building { During progress of work in shops -- } 1913 Nov. 19. 20. 21. 24. 26. 28. Dec. 1. 3. 5. 10. 12. 15. 17. 19. 23. 30. 1914 Jan. 5. 6. 7. 9. 12. 14. 16. 19. 21. 23. 26. 29.
 { During erection on board vessel --- } 1914 Feb. 2. 3. 9. 12. 13. 16. 17. 19. 20. 23. Feb. 5 Mar. 9. 23. Apr. 1. (at work)
 Total No. of visits 38 + 4

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " "

Dates of Examination of principal parts—Cylinders 30.12.13 Slides 17.12.13 Covers 17.12.13 Pistons 30.12.13 Rods 30.12.13
 Connecting rods 30.12.13 Crank shaft 6.1.14 Thrust shaft 1.12.13 Tunnel shafts 22.11.13 Screw shaft 16.1.14 Propeller 16.1.14
 Stern tube 9.1.14 Steam pipes tested 19.2.14 20.2.14 Engine and boiler seatings Engines holding down bolts 16.2.14
 Completion of pumping arrangements 23.2.14 Boilers fixed 23.2.14 Engines tried under steam 23.2.14
 Main boiler safety valves adjusted 23.2.14 Thickness of adjusting washers P.B.H.s 1/32 : 6 P.B.H.s 3/32 : S.P.H.s 9/32
 Material of Crank shaft *Eng. Steel* Identification Mark on Do. 6874 Material of Thrust shaft *Eng. Steel* Identification Mark on Do. 141-N
 Material of Tunnel shafts *Eng. Steel* Identification Marks on Do. 141-N Material of Screw shaft *Eng. Steel* Identification Marks on Do. 6874
 Material of Steam Pipes *Solid drawn steel* (5" x .225") Test pressure 600 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. *To complete the survey the spare gear requires to be examined. It is proposed to have this done at Newcastle. The Surveyors have been advised.*

The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers and main steam pipes were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory. In my opinion this vessel will be eligible to have the notation of L.M.C. with a date, when the survey has been completed.

The spare gear has now been examined and the survey completed. In my opinion the vessel is eligible for record of L.M.C. 4.14.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 4.14.

W.D. 7/7/14 J.R.P.

The amount of Entry Fee .. £ 3 - 0 - 0 When applied for, _____
 Special £ 49 - 6 - 0 2.3.1914
 Donkey Boiler Fee £ ✓ : When received, *as per letter from Mr. 6.3.1914*
 Travelling Expenses (if any) £ ✓ :

W. Morrison & Co. Cooper
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. MAY. 8 - 1914

Assigned

+ L.M.C. 4.14



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Certificate (if registered) to be sent to Middlesbrough.

(The Surveyors are requested to write on or below the space for Committee's Minute.)