

REPORT ON MACHINERY.

Port of Newcastle

Received at London Office

MON. 2 JUL 1900

No. in Survey held at Newcastle Date, first Survey Dec 29th 99 Last Survey June 16 1900

Reg. Book. 96 on the 1/2 " Federation " (Number of Visits 21)

Tons } Gross 767
 } Net 367
When built 1886-10

Master Sherwood Built at Sunderland By whom built S P Austin & Son

Engines made at Sunderland By whom made North Eastern Marine Eng^r Co. when made 1886-10

Boilers made at Wallsend By whom made Wallsend Shipway & Eng^r Co. when made 1900-6

Registered Horse Power _____ Owners Co-Operative Wholesale Ice Ltd Port belonging to Coal

Nom. Horse Power as per Section 28 161 Is Refrigerating Machinery fitted No Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 19" 31" 51" Length of Stroke 33" Revs. per minute _____ Dia. of Screw shaft as per rule 9 1/2" as fitted 10" Lgth. of stern bush _____

Dia. of Tunnel shaft as per rule 9 3/4" as fitted 9 3/8" Dia. of Crank shaft journals as per rule 9 3/4" as fitted 9 3/4" Dia. of Crank pin 9 3/4" Size of Crank webs _____ Dia. of thrust shaft under collars 10" Dia. of screw _____ Pitch of screw _____ No. of blades _____ State whether moceable _____ Total surface _____

No. of Feed pumps _____ Diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____

No. of Bilge pumps _____ Diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____

No. of Donkey Engines _____ Sizes of Pumps _____ No. and size of Suctions connected to both Bilge and Donkey pumps _____

In Engine Room _____ In Holds, &c. _____

No. of bilge injections _____ sizes _____ Connected to condenser, or to circulating pump _____ Is a separate donkey suction fitted in Engine room & size _____

Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine room always accessible _____ Are the sluices on Engine room bulkheads always accessible _____

Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____

Are they 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 _____

Are they 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 _____

What pipes are carried through the bunkers _____ How are they protected _____

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times _____

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges _____

When were stern tube, propeller, screw shaft, and all connections examined in dry dock 13-6-00 Is the screw shaft tunnel watertight _____

Is it fitted with a watertight door _____ worked from _____

BOILERS, &c.— (Letter for record T) Total Heating Surface of Boilers 2500 sq ft Is forced draft fitted No

No. and Description of Boilers Two, Multi, Single ended Working Pressure 175 lbs Tested by hydraulic pressure to 350 lbs

Date of test 2/3-00 Can each boiler be worked separately yes Area of fire grate in each boiler 40 sq ft No. and Description of safety valves to each boiler 2, direct spring Area of each valve 7.04 sq in Pressure to which they are adjusted 175 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers 6'-0" Mean dia. of boilers 11'-6" Length 11'-0" Material of shell plates Steel

Thickness 3/32" Range of tensile strength 29-32 TONS Are they welded or flanged No Descrip. of riveting: cir. seams 2, 7 lap long. seams DBS, TR

Diameter of rivet holes in long. seams 1/8" Pitch of rivets 8" Lap of plates or width of butt straps 16 1/8"

Percentage of strength of longitudinal joint rivets 85-9 Working pressure of shell by rules 215 lbs Size of manhole in shell 16" x 12" plate 84-8

Size of compensating ring 6 1/2" x 1 1/4" in hole No. and Description of Furnaces in each boiler 2, Deightons Material Steel Outside diameter 43"

Length of plain part top _____ bottom _____ Thickness of plates crown 1/2" Description of longitudinal joint welded No. of strengthening rings None

Working pressure of furnace by the rules 175 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 3/32" Top 1/16" Bottom 3/4"

Pitch of stays to ditto: Sides 9 1/4" x 8" Back 9" x 9" Top 9 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 219 lbs

Material of stays Steel Diameter at smallest part 2.03 Area supported by each stay 81 sq in Working pressure by rules 214 lbs End plates in steam space: Material Steel Thickness 1/16" Pitch of stays 16" x 16 3/8" How are stays secured DNW Working pressure by rules 240 lbs Material of stays Steel

Diameter at smallest part 2 1/16" Area supported by each stay 262 sq in Working pressure by rules 233 lbs Material of Front plates at bottom Steel

Thickness 3/32" Material of Lower back plate Steel Thickness 1/16" Greatest pitch of stays 14 1/2" x 9" Working pressure of plate by rules 208 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 5/8" Material of tube plates Steel Thickness: Front 3/32" Back 3/4" Mean pitch of stays 9 3/8"

Pitch across wide water spaces 14 1/2" Working pressures by rules 194 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2" x 2 plates Length as per rule 23-5' Distance apart 9 1/4" Number and pitch of Stays in each one

Working pressure by rules 194 lbs 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 _____

Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____

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 _____

DONKEY BOILER— No. 0 Description _____

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

Working pressure Tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of grate _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____

Di. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tensile strength _____

Di. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____

Descrip. of riveting long. seams _____

Lap of plating _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____

Per centage of strength of joint _____ Plates _____

Di. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied: _____

The foregoing is a correct description.
FOR THE WALLSEND SHIPWAY & ENGINEERING CO. LIMITED,
 Manufacturer.

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Dates of Survey while building

During progress of work in shops - 1899. April Dec. 29. 1900 Jan. 12. Feb. 7. 11. March 16. 19. 21. 22. 27. April 9. 23. May 8. 15. 18. 22. 25. 30. June 11. 12. 15. 18.

During erection on board vessel - _____

Total No. of visits 21.

Is the approved plan of main boiler forwarded herewith yes

“ “ “ donkey “ “ “ none fitted

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

Main boilers & donkey boiler lifted out, main boiler seating renewed two new main boilers fitted in place. Safety valves & stop valves from old boilers overhauled & refitted to new boilers after being tested by hydraulic test to 400 lbs. Main steam pipes repaired, - one length renewed - tested to 350 lbs by hydraulic test.

After crank pin found to be cracked for $\frac{3}{4}$ of the diameter, crank shaft all lifted out & turned up in lathe, new after crank & coupling bolts fitted & main bearings refilled with white metal.

Propeller shaft drawn in & examined, stern bush relined with white metal, new propeller fitted & shafting lined up throughout. (Blades of old propeller partly broken) All valve gears & pumps overhauled, two new free rams fitted also new I.P. eccentric sheave & strap. Main boilers tested under steam safety valves adjusted to 175 lbs found to work well.

N.B. The main boiler pressure is now 175 lbs

This vessel has not any donkey boiler now, sea cock cut off.

The vessel was docked on the Wallsend Shipway

Lank under boilers cut off, filling pipes blanked, bridge suction fitted in space.

The machinery of this vessel as far as seen is now in safe working condition eligible in my opinion to receive the record of +NB6-1900, BS6-1900 in the Register Book.

Screw shaft examined. New after crank fitted. New main boiler fitted

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

The amount of Entry Fee. . . £ : :
 Special £ : :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :

When applied for, **30 JUN 1900**
 When received, **31.7.1900**

It is submitted that this vessel is eligible for THE RECORD, BS 6.00 and notation of +NB6.00 working pressure 175 lbs.

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

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Committee's Minute **TUES. 3 JUL 1900**

Assigned **226.00**
+NB6.00

