

Rpt. 4. **REPORT ON MACHINERY.** No. 8797

Received at London Office **THU. SEP. 21 1922**

Date of writing Report 19 **22** When handed in at Local Office 19 **22** Port of **Belfast**

No. in Survey held at **Belfast** Date, First Survey 1921 **July 9** Last Survey **Sept 12** 19 **22**
 Reg. Book. on the **S/S "CITY OF NAGPUR"** (Number of Visits **87**)

Master **W. J. ...** Built at **Belfast** By whom built **Workman Clark & Co. Ltd.** When built **1922**

Engines made at **Belfast** By whom made **Workman Clark & Co. Ltd.** when made **1922**

Boilers made at **Belfast** By whom made **Workman Clark & Co. Ltd.** when made **1922**

Registered Horse Power **1038** Owners **City Lines Ltd.** Port belonging to **Glasgow**

Nom. Horse Power as per Section **29** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **Yes.**

ENGINES, &c.—Description of Engines **Single-screw Quad: Exp.** No. of Cylinders **4** No. of Cranks **4**

Dia. of Cylinders **29"-42"-60"-86"** Length of Stroke **60"** Revs. per minute **81** Dia. of Screw shaft **17.44** as per rule **17.1** Material of screw shaft **S. Steel** as fitted **18.5"**

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 **6'-6"**

Dia. of Tunnel shaft **16.29** as per rule **17"** Dia. of Crank shaft journals **17.1** as per rule **17.75** Dia. of Crank pin **17.34** Size of Crank webs **9 3/4" x 12"** Dia. of thrust shaft under collars **17 3/4"** Dia. of screw **19'-8"** Pitch of Screw **19'-6"** No. of Blades **4** State whether moceable **Yes** Total surface **120 sq ft**

No. of Feed pumps **2** Diameter of ditto **See Sheet** Can one be overhauled while the other is at work **Yes.**

No. of Bilge pumps **2** Diameter of ditto **5 1/2"** Stroke **27"** Can one be overhauled while the other is at work **Yes.**

No. of Donkey Engines **1** Sizes of Pumps **See separate sheet** No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room **5-3 1/2" 2-3" in Cofferdams** In Holds, &c. **17-3 1/2"**

No. of Bilge Injections **1** sizes **13"** Connected to condenser, or to circulating pump **Yes** Is a separate Donkey Suction fitted in Engine room & size **2-5 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 **-**

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 **-**

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 **Food. Suctions** How are they protected **Steel casing**

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.**

Is the Screw Shaft Tunnel watertight **Yes.** Is it fitted with a watertight door **Yes.** worked from **Bridge**

BOILERS, &c.—(Letter for record **S**) Manufacturers of Steel **Beardmore's & the Newburn Steel Works, W/c**

Total Heating Surface of Boilers **15910 sq ft** Is Forced Draft fitted **Yes.** No. and Description of Boilers **5- Single ended Marine**

Working Pressure **230 lbs sq in** Tested by hydraulic pressure to **395 lbs sq in** Date of test **6/12/21** No. of Certificate **807**

Can each boiler be worked separately **Yes.** Area of fire grate in each boiler **75 1/8 sq ft** No. and Description of Safety Valves to each boiler **2-spring loaded** Area of each valve **11.04 sq in** Pressure to which they are adjusted **230 lbs sq in** Are they fitted with easing gear **Yes.**

Smallest distance between boilers or uptakes and bunkers or woodwork **2'-0"** Mean dia. of boilers **16'-6"** Length **12'-6"** Material of shell plates **Steel**

Thickness **1 3/8"** Range of tensile strength **30/34 tons** Are the shell plates welded or flanged **No** Descrip. of riveting: cir. seams **Lap D.** long. seams **D.B. Triple** Diameter of rivet holes in long. seams **1 5/8"** Pitch of rivets **10 9/16"** Lap of plates or width of butt straps **23 7/16"**

Per centages of strength of longitudinal joint rivets **89.2** Working pressure of shell by rules **231** Size of manhole in shell **12" x 16"** plate **84.4**

Size of compensating ring **Hawthorn-Gray** No. and Description of Furnaces in each boiler **4-Dighton** Material **Steel** Outside diameter **41"**

Length of plain part top **4"** bottom **8"** Thickness of plates crown **1 1/16"** bottom **1 1/16"** Description of longitudinal joint **Weld.** No. of strengthening rings **27**

Working pressure of furnace by the rules **245** Combustion chamber plates: Material **Steel** Thickness: Sides **1 1/16"** Back **1 1/16"** Top **1 1/16"** Bottom **3/32"**

Pitch of stays to ditto: Sides **8 3/8" x 8 3/8"** Back **7 1/2" x 8 3/4"** Top **7 1/2" x 6"** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **234**

Material of stays **Steel** Area at smallest part **1 1/6-239 sq in** Area supported by each stay **68 sq in** Working pressure by rules **254** End plates in steam space: Material **Steel** Thickness **1 1/4"** Pitch of stays **21" x 5 3/4"** How are stays secured **D. nuts & washers** Working pressure by rules **234** Material of stays **Steel**

Area at smallest part **6.09 sq in** Area supported by each stay **330 3/4 sq in** Working pressure by rules **242** Material of Front plates at bottom **Steel**

Thickness **1"** Material of Lower back plate **Steel** Thickness **1 5/16"** Greatest pitch of stays **13 3/4" x 8"** Working pressure of plate by rules **285**

Diameter of tubes **2 3/4"** Pitch of tubes **4" x 3 7/8"** Material of tube plates **Steel** Thickness: Front **1/64"** Back **7/8"** Mean pitch of stays **7 3/4" x 12"**

Pitch across wide water spaces **13 3/4"** Working pressures by rules **235** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **12 1/2" x 10" x 3/4" x 2** Length as per rule **4 1/2"** Distance apart **8 3/4" x 6"** Number and pitch of stays in each **3-7 1/2"**

Working pressure by rules **234** Steam dome: description of joint to shell **-** % of strength of joint **-**

Diameter **-** Thickness of shell plates **-** Material **-** Description of longitudinal joint **-** Diam. of rivet holes **-**

Pitch of rivets **-** Working pressure of shell by rules **-** Crown plates **-** Thickness **-** How stayed **-**

SUPERHEATER. Type **Schmidt** Date of Approval of Plan **-** Tested by Hydraulic Pressure to **460 lbs**

Date of Test **22-5-22** Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler **Yes.**

Diameter of Safety Valve **3"** Pressure to which each is adjusted **230 lbs sq in** Is Easing Gear used **Yes.**

W17-0017

Eng. No. 464

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