

REPORT ON MACHINERY.

No. 21473

Port of Sunderland

Received at London Office

SAI. 5 SEP 1903

No. in Survey held at Sunderland Date, first Survey 29 June 03 Last Survey 20 Aug 1903
 Reg. Book. "St. Agnes" (Number of Visits) _____
 on the Screw Steamer Tons { Gross 1195 Net 740
 Master J. Scott Built at Sunderland By whom built S. P. Austin & Son Ltd When built 1903
 Engines made at Sunderland By whom made North Eastern Marine Eng. Co. Lim. when made 1903
 Boilers made at Sunderland By whom made Ditto when made 1903
 Registered Horse Power _____ Owners Stephenson Clarke & Co Port belonging to London
 Nom. Horse Power as per Section 28 167 Is Refrigerating Machinery fitted Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Tri Compound surface condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 19", 31", 51" Length of Stroke 36" Revs. per minute 70 Dia. of Screw shaft 9 1/4" Material of Steel
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 No 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 Yes If two
 liners are fitted, is the shaft lapped or protected between the liners Partly at liner ends Length of stern bush 3'-9 1/2"
 Dia. of Tunnel shaft 9 3/8" Dia. of Crank shaft journals 9 3/4" Dia. of Crank pin 9 3/4" Size of Crank webs 15 1/2" x 6" Dia. of thrust shaft under
 collars 9 3/4" Dia. of screw 13.3" Pitch of screw 14'-6" No. of blades 4 State whether moveable No Total surface 55 sq'
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 1'-9" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 1'-9" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 7 1/2" x 9 1/2" 10 1/2" x 5 1/2" 14 1/2" x 5 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3 of 2 1/2" In Holds, &c. 2 of 2 1/2" in each hold
3" in after peak & well.
 No. of bilge injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes-2 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 Yes
 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 below the deep water line Yes
 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock No: New ship Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from top platform

BOILERS; &c.— (Letter for record S) Total Heating Surface of Boilers 2648 Is forced draft fitted No
 No. and Description of Boilers One cylindrical multitubular Working Pressure 165 Tested by hydraulic pressure to 330
 Date of test 28/7/03 Can each boiler be worked separately Yes Area of fire grate in each boiler 74.25 No. and Description of safety valves to
 each boiler 2 - direct spring Area of each valve 9.62 sq' Pressure to which they are adjusted 165 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean dia. of boilers 16'-4 1/4" Length 10'-6" Material of shell plates Steel
 Thickness 1 1/16" Range of tensile strength 29-32 Are they welded or flanged No Descrip. of riveting: cir. seams D. r. lap long. seams T. r. D. B. S.
 Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 1'-9 3/4"
 Per centages of strength of longitudinal joint rivets 85% Working pressure of shell by rules 165.1 Size of manhole in shell 1'-4" x 1'-0"
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 4 plain Material Stl. Outside diameter 3'-6"
 Length of plain part 6'-11 1/8" Thickness of plates 3/4" Description of longitudinal joint Welded No. of strengthening rings Yes
 Working pressure of furnace by the rules 168 Combustion chamber plates: Material Stl. Thickness: Sides 1/16" Back 3/4" Top 1/16" Bottom 1"
 Pitch of stays to ditto: Sides 10 1/2" x 9" Back 11 1/4" x 9 1/2" Top 10" x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 167.5
 Material of stays Steel Diameter at smallest part 2.1 Area supported by each stay 113.82 sq' Working pressure by rules 166 End plates in steam space:
 Material Stl. Thickness 1 3/8" Pitch of stays 24" x 22 1/2" How are stays secured Stl. nuts Working pressure by rules 165.2 Material of stays Stl.
 Diameter at smallest part 9.82 Area supported by each stay 534 sq' Working pressure by rules 181.9 Material of Front plates at bottom Stl.
 Thickness 1/16" Material of Lower back plate Stl. Thickness 3/32" Greatest pitch of stays 14 1/2" x 9 1/2" Working pressure of plate by rules 165.6
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Stl. Thickness: Front 1/16" Back 1/16" Mean pitch of stays 9 1/2" x 9"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 215.7 Girders to Chamber tops: Material Stl. Depth and
 thickness of girder at centre 6 1/4" x 3 1/4" Length as per rule 28 1/2" Distance apart 10" Number and pitch of Stays in each 2 = 9"
 Working pressure by rules 182.5 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
 separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet
 holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes
 If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes
 Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

WS38-0219

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship? [2000-7-02-Copyable Ink.]



DONKEY BOILER— No. *One* Description *Vertical*
 Made at *Gateshead* By whom made *Clarke Chapman & Co* When made *1903* Where fixed *Stokehold*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *6623* Fire grate area *19ft* Description of safety valves *direct Spring*
 No. of safety valves *1* Area of each *8.29* Pressure to which they are adjusted *90* If fitted with casing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *5'9"* Length *12'* Material of shell plates *Stl* Thickness *7/16"* Range of tensile strength *27-33* Descrip. of riveting long. seams *D. r. lap* Dia. of rivet holes *7/8"* Whether punched or drilled *drilled* Pitch of rivets *3 3/16"*
 Lap of plating *4 1/4"* Per centage of strength of joint Rivets *7.3.3* Thickness of shell crown plates *9/16"* Radius of do. *5'* No. of Stays to do. *5*
 Dia. of stays. *1 5/8"* Diameter of furnace Top *4'5 1/4"* Bottom *4'10"* Length of furnace *4'11"* Thickness of furnace plates *9/32"* Description of joint *S. r. lap* Thickness of furnace crown plates *9/16"* Stayed by *as above* Working pressure of shell by rules *102*
 Working pressure of furnace by rules *128* Diameter of uptake *15"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *2 bottom end bolts & nuts; 2 top end bolts & nuts; 1 set of coupling bolts & nuts; 2 feed pump valves; 2 bilge pump valves; Assorted bolts, nuts, iron etc.; Spare propelled: 2 main bearing bolts & nuts*
 The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.
Walter Deatherby

Dates of Survey { During progress of work in shops - - - *1903- Jun 29 July 1. 2. 3. 24. 28. 29. 30. 31. Aug 5. 7. 20*
 while building { During erection on board vessel - - - *12*
 Total No. of s *12* Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been built under Special Survey, the material of workmanship sound & good; Boilers & steam pipes tested by hydraulic pressure to double the working pressure.
The Engines worked well; & the safety valves of the main & donkey boilers were adjusted as above.
This vessel is eligible, in my opinion, to have the notation in the Register Book. + L.M.C. 8.03.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 8.03

W.S. *7.9.03*
7.9.03

Switzerland

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... £ *2* : : : When applied for,
 Special... £ *25* : 1 : : *3.9.1903*
 Donkey Boiler Fee... £ : : : When received,
 Travelling Expenses (if any) £ : : : *14.9.03*

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

Committee's Minute **TUES. 8 SEP 1903**
 Assigned *+ L.M.C. 8.03*



MACHINERY CERTIFICATE WRITTEN.