

Received at London Office FRI. 24 JUN. 1921

Date of writing Report May 9th 1921 When handed in at Local Office May 9th 1921 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Wallsend-on-Tyne Date, First Survey 9th March/20 Last Survey April 28th 1921

Reg. Book. on the steel screw steamer "Proton" (Number of Visits)

Master Built at Howdon-on-Tyne By whom built Northumbrian S.B. Co. Ltd When built 1921

Engines made at Wallsend-on-Tyne By whom made North Eastern Marine Engrs & Ld when made 1921

Boilers made at " By whom made " when made 1921

Registered Horse Power Owners J. C. Christensen Port belonging to Glasgow

Nom. Horse Power as per Section 28 359 356 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 25-41-68 Length of Stroke 45 Revs. per minute 66 Dia. of Screw shaft 13.02 as per rule 14.0 as fitted 14.0 Material of screw shaft Iron

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 5-0

Dia. of Tunnel shaft 12.4 as per rule 12.56 as fitted 12.56 Dia. of Crank shaft journals 13.02 as per rule 13.4 as fitted 13.4 Dia. of Crank pin 15.4 Size of Crank webs 1-8 1/2 x 8 1/2 Dia. of thrust shaft under

collars 13 1/4 Dia. of screw 14-0 Pitch of Screw 14-0 No. of Blades 4 State whether moveable 20 Total surface 90 5/5

No. of Feed pumps 2 Diameter of ditto 4 Stroke 2-0 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 2-0 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 1 1/2 x 8 1/2 + 0 2 1/2 x 5 + 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2-3 1/2 In Holds, &c. No. 1-2+3 and No. 2-3 1/2

No. of Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3 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 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 Above except the

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

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 No. approached from the deck down a ladder

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer Furnaces J. Brown

Total Heating Surface of Boilers 5760 Is Forced Draft fitted No No. and Description of Boilers 3 Single ended Multitubular

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 30.9.20 No. of Certificate 9468

Can each boiler be worked separately Yes Area of fire grate in each boiler 49.5 No. and Description of Safety Valves to

each boiler 2-2 1/2 Area of each valve 4.75 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2-0 Mean dia. of boilers 14-0 Length 10-6 Material of shell plates steel

Thickness 1 3/32 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams double

long. seams 5.8 B.S. Rivets Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8 3/4 Lap of plates or width of butt straps 18

Per centages of strength of longitudinal joint rivets 86.6 Working pressure of shell by rules 180 Size of manhole in shell 16 x 12

plate 86.4 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 brightons Material steel Outside diameter 40

Length of plain part top Thickness of plates crown 2 Description of longitudinal joint welded No. of strengthening rings

bottom 40 bottom 23 4 23 4 23 4 23 4 Working pressure of furnace by the rules 188 Combustion chamber plates: Material steel Thickness: Sides 3/32 Back 3/32 Top 3/32 Bottom 1/8

Pitch of stays to ditto: Sides 10 1/2 x 9 3/8 Back 10 1/2 x 9 3/8 Top 10 1/2 x 9 3/8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180

Material of stays steel Area at smallest part 2.03 Area supported by each stay 98.4 Working pressure by rules 186 End plates in steam space:

Material steel Thickness 1 3/8 Pitch of stays 24 x 19 3/4 How are stays secured 2 x 1/4 Working pressure by rules 185 Material of stays steel

Area at smallest part 8.29 Area supported by each stay 474 Working pressure by rules 182 Material of Front plates at bottom steel

Thickness 1 Material of Lower back plate steel Thickness 3/32 Greatest pitch of stays 14 1/2 Working pressure of plate by rules 189

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/8 Material of tube plates steel Thickness: Front 1 Back 3/4 Mean pitch of stays 8 3/8

Pitch across wide water spaces 14 1/2 Working pressures by rules 182 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8 3/4 x 1 1/2 Length as per rule 30 Distance apart 10 1/2 Number and pitch of stays in each 2-9 3/8

Working pressure by rules 188 Steam dome: description of joint to shell None % 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 None Date of Approval of Plan Tested by Hydraulic Pressure to

Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two top end and two bottom end bolts & nuts, 2 main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & helge pump valves. A quantity of ⁽¹⁰⁰⁾ assorted bolts & nuts. Iron of various sizes (2 lot of non plate 1 cut of bar). One dozen gauge glasses, 4 dozen mica rubber washers for the same. 1/2 set of feed donkey valves. 1/2 set of ballast donkey valves. 12 piston bolts. one cast iron propeller.

The foregoing is a correct description,

THE NORTH EASTERN MARINE ENGINEERING Co., LTD.

Manufacturer.

Secretary.

Dates of Survey while building { During progress of work in shops - - July 7. 15. 28. Aug 16. 18. 20. 25. 26. Sep 7. 23. 29. 30. Oct 4. Nov 4. 11. 24. 29. 30. Dec 15. 29. 1921. Jan 11. 14. Feb 9. Mar 17. 24. Apr 6. 28. 1920. Mar 9. 26. 30. 31. Apr 1. 12. 13. 14. 15. May 12. 27. 31. June 1. 3. 14. 1921.

Total No. of visits

Is the approved plan of main boiler forwarded herewith

Yes

Dates of Examination of principal parts—Cylinders 11.11.20 Slides 29.9.20 Covers 29.9.20 Pistons 13.1.21 Rods 13.1.21 Connecting rods 28.7.20 Crank shaft 12.5.20 Thrust shaft 9.3.20 Tunnel shafts 7.9.20 Screw shaft 1.6.20 Propeller 13.1.21 Stern tube 1.6.20 Steam pipes tested 14.3.21 Engine and boiler seatings 14.3.21 Engines holding down bolts 28.4.21 Completion of pumping arrangements 28.4.21 Boilers fixed 17.3.21 Engines tried under steam 28.4.21 Completion of fitting sea connections 25.2.21 Stern tube 39.11.20 Screw shaft and propeller 1.6.20 - 13.1.21 Main boiler safety valves adjusted 28.4.21 Thickness of adjusting washers Port 1 1/2 S 7/16 Centre 3/4 S 1/2 Starboard 3/4 S 1 1/2 Material of Crank shaft steel Identification Mark on Do. 2.7.12.5.20 Material of Thrust shaft steel Identification Mark on Do. 2.7.12.5.20 Material of Tunnel shafts Iron Identification Marks on Do. MR 7.9.20 Material of Screw shafts Iron Identification Marks on Do. 1.6.20 2.7.12.5.20 Material of Steam Pipes Wrought Iron & Steel & Copper Test pressure W. Iron & Steel 5 1/2 lbs. Copper 360 lbs.

Is an installation fitted for burning oil fuel

Yes

Is the flash point of the oil to be used over 150°F.

No yes.

Have the requirements of Section 49 of the Rules been complied with

Yes

see Note. H. 6/7/21

Is this machinery duplicate of a previous case

No

If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. This vessel's machinery has been examined during construction, and the materials & workmanship are good, and in accordance with the rules requirements & the approved plans. On completion the machinery was tried under steam, and the safety valves adjusted to the working pressure with satisfactory results. The machinery is therefore eligible in our opinion to be classed with the notation of +LMC 5. 21. in the A. Book—

Plans forwarded. Main boilers. 2 settling tanks. arrangements of oil burning machinery. Amended Pumps & Ballast Pipe arrangements.

It is submitted that this vessel is eligible for THE RECORD + LMC 4. 21.

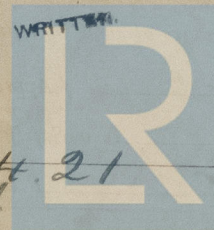
Fitted for oil fuel 4. 21. F.P. above 150°F.

The amount of Entry Fee ... £ 5 : : When applied for, 13/6/1921
Special ... £ 18 : 17 : :
Donkey Boiler Fee ... £ : : :
Travelling Expenses (if any) £ : : : 20/6/1921

Committee's Minute

Assigned

CERTIFICATE WRITTEN



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