

REPORT ON MACHINERY.

No. 26662

Received at London Office SAT. 25 MAR. 1916

Date of writing Report 14 July 16 When handed in at Local Office 24 MAR 1916 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 14 July 15 Last Survey 15-3-16 1916

Reg. Book. on the S.S. "Thurlova" Estimer Regatt, Dec 15-16 Number of Visits 3 Gross Tons 2293 Net 1216

Master W. Kerr Built at Sunderland By whom built The North of Ireland S.B. & L. S. N. 66 When built 1916

Engines made at Sunderland By whom made Macballe & Pollock Ltd (N° 261) when made 1916

Boilers made at Sunderland By whom made Macballe & Pollock Ltd (N° 261) when made 1916

Registered Horse Power Owners Bromport Steamship Co Port belonging to Liverpool

Nom. Horse Power as per Section 28 240 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 21" 34" 56" Length of Stroke 39" Revs. per minute 85 Dia. of Screw shaft as per rule 11.91" Material of steel
as fitted 12.36" 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 ✓ 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 4'-0 1/2"

Dia. of Tunnel shaft as per rule 10.5" Dia. of Crank shaft journals as per rule 11.02" Dia. of Crank pin 11 3/8" Size of Crank webs 16 1/2" x 7 1/2" Dia. of thrust shaft under

collars 11 3/8" Dia. of screw 14 1/4" Pitch of Screw 15'-9" No. of Blades 4 State whether moveable no Total surface 73.6 ft

No. of Feed pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 1 Ballast 8" x 10" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4-3" In Holds, &c. 4-3" + 2-3" in Deep Tank

No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 1-3 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 ✓

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 Both

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 Fore hold suction How are they protected Wood 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

Dates of examination of completion of fitting of Sea Connections 11-4-16 of Stern Tube 11-4-16 Screw shaft and Propeller 11-4-16

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform E. Room

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel John Spencer & Sons Ltd.

Total Heating Surface of Boilers 4080 ft Is Forced Draft fitted no No. and Description of Boilers Two single ended main

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 21-1-16 & 8-2-16 No. of Certificates 3326 & 3328

Can each boiler be worked separately Yes Area of fire grate in each boiler 61.3 ft No. and Description of Safety Valves to

each boiler Two direct spring Area of each valve 5.930" Pressure to which they are adjusted 18.5 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 10'-3" Mean dia. of boilers 14'-9" Length 10'-6" Material of shell plates Steel

Thickness 1 1/8" Range of tensile strength 29 3/4-33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.

g. seams TR. DBS Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/4" Lap of plates or width of butt straps 14 7/8"

Percentages of strength of longitudinal joint rivets 88.7 Working pressure of shell by rules 180 Size of manhole in shell 16" x 12"

of compensating ring 21" x 29" x 1 1/8" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 3'-9 1/4"

Length of plain part top 16 5/8" Thickness of plates crown 1 1/8" Description of longitudinal joint welded No. of strengthening rings none

bottom 16 3/4" bottom 1 1/8"

Working pressure of furnace by the rules 184 Combustion chamber plates: Material Steel Thickness: Sides 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 1 1/8"

Ch of stays to ditto: Sides 9 1/4" x 9 1/2" Back 9 1/8" x 9" Top 10" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183

Material of stays Steel Diameter at smallest part 2.035" Area supported by each stay 100 ft Working pressure by rules 183 End plates in steam space:

Material Steel Thickness 1 1/4" Pitch of stays 21" x 18" How are stays secured D.N. Working pressure by rules 183 Material of stays Steel

Area at smallest part 6' 10" Area supported by each stay 345 ft Working pressure by rules 183.8 Material of Front plates at bottom Steel

Thickness 1 1/8" Material of Lower back plate Steel Thickness 1 1/8" Greatest pitch of stays 15 1/4" x 9" Working pressure of plate by rules 193

Diameter of tubes 3 1/4" Pitch of tubes 4' 11" x 4' 9" 11" Material of tube plates Steel Thickness: Front 1 1/8" Back 1 1/8" Mean pitch of stays 11.28"

Ch across wide water spaces 13 1/2" Working pressures by rules 185 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 8" x 17 1/8" Length as per rule 28' 1/8" Distance apart 10" Number and pitch of stays in each 2 @ 8 1/2"

Working pressure by rules 186 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

separately Yes 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

Total No. of Visits 2 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

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:-

one propeller (C. Iron). set coupling bolts; set top end & set bottom end bolts; set main bearing bolts; 3 tubes stoppers; 2 Feed & 2 Bilge Pump valves; 1/2 set air pump valves; 1 set circulating pump valves; 2 Feed Check valves; 3 Condenser tubes & 4 fernules; safety valve & spring; feed escape valve spring, bolts nuts, iron etc.

The foregoing is a correct description,

MAC COLL & POLLOCK LTD.

Richardson

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 1915 Jul. 1, Oct. 28, Nov. 4, 9, 10, 15, 18, 19, 30 Dec. 1, 3, 22 Jan. 13, 21, 25, 28, 31 Feb. 8, 9, 17, 22 Mar. 6, 14
{ During erection on board vessel - - } 1915, Dec. 1, 1916, Apr. 1-15, May 13, June 1, 27.
Total No. of visits 29

Is the approved plan of main boiler forwarded herewith

Yes

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 30-1-15 Slides 31-1-16 Covers 1-12-15 Pistons 13-1-16 Rods 25-1-16

Connecting rods 28-1-16 Crank shaft 23-8-15 Thrust shaft 9-2-16 Tunnel shafts 17-2-16 Screw shaft 6-3-16 Propellers 2-2-2

Stern tube 15-3-16 Steam pipes tested 1-6-16 Engine and boiler seatings 13-3-16 Engines holding down bolts 13-5-16

Completion of pumping arrangements 27-6-16 Boilers fixed 1-6-16 Engines tried under steam 27-6-16

Main boiler safety valves adjusted 27-6-16 Thickness of adjusting washers *2 1/2" 3 1/2" 4 1/2" 5 1/2"*

Material of Crank shaft *Steel* Identification Mark on Do. *4595CK* Material of Thrust shaft *Steel* Identification Mark on Do. *4495A*

Material of Tunnel shafts *Steel* Identification Marks on Do. *4524 AF0* Material of Screw shafts *Steel* Identification Marks on Do. *4525 A*

Material of Steam Pipes *N. Iron* Test pressure *540 lb*

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *✓*

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

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.)

The materials and workmanship are good.
The machinery has been constructed under special survey and forwarded to London to be fitted in the vessel. Belfast Surveyors advised 22-3-16

Machinery securely fitted on board, and tested satisfactorily under steam. In my opinion it is eligible for record + L.M.C. 6-16. with notation "Electric Light".

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.16.

W. J. R.

J. W. D.
14/7/16

Lewis Davis R. J. Beven
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee ... £ 2 : - :
Special *2/3 fee* £ 21 : 6 :
Donkey Boiler Fee ... £ 10 : 14 :
When applied for, 24 MAR 1916
When received,

Travelling Expenses (if any) £ 9 : 5 : 0
Belfast Office
Committee's Minute
TUE. AUG. 8 - 1916

Assigned *+ L.M.C. 6.16*

MACHINERY CERTIFICATE WRITTEN.