Rpt. 4.

REPORT ON MACHINERY.

No. 17222.

Received at London Office WED. 19 DEC. 1917

Date of writing Report 14th December, 1917. When handed in at Local Office 15th December, 1917. Port of Greenock.

No. in Reg. Book. Survey held at Port Glasgow. Date, First Survey 1st February, 1917. Last Survey 12th December, 1917. (Number of Visits 61.)

on the R.F.A. EBONOL.

Master ..... Built at Port Glasgow. By whom built The Clyde Nt & Eng Co Ltd. Tons Gross 1158 Net 501 When built 1917

Engines made at Port Glasgow. By whom made do when made 1917.

Boilers made at do By whom made do when made 1917.

Registered Horse Power ..... Owners The Admiralty. Port belonging to .....

Nom. Horse Power as per Section 28 145 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 16" - 26" - 43" Length of Stroke 27" Revs. per minute 105 Dia. of Screw shaft as per rule 8.76 as fitted 8¾" Material of screw shaft Forged 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 3' - 0"

Dia. of Tunnel shaft as per rule 7.35 as fitted — Dia. of Crank shaft journals as per rule 8.12 as fitted 8¼" Dia. of Crank pin 8½" Size of Crank webs 29" x 15½" x 5¼" Dia. of thrust shaft under collars 8¼" Dia. of screw 10' - 10" Pitch of Screw 10' - 0" No. of Blades 4 State whether moveable No Total surface 44 ft

No. of Feed pumps 2 Diameter of ditto 5" Stroke 15" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3⅛ Stroke 15" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 2 General Sizes of Pumps 10½ x 7½ x 10" General 4" x 4" x 6" Freshwater No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Engine 2 @ 3", 2 @ 2½ Boiler Room 4 @ 2½" In Holds, &c. 2 @ 2½ Fore Pump Room.

No. of Bilge Injections 1 sizes 5¼" Connected to condenser, or to circulating pump Circ pump Is a separate Donkey Suction fitted in Engine room & size Yes 4"

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 Valves

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

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 — Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Dunlop & Co Lanarkshire Ltd & Steel Co of Scotland

Total Heating Surface of Boilers 2254 ft Is Forced Draft fitted Yes No. and Description of Boilers 2 single ended cyl

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 11/10/17 No. of Certificate 1311

Can each boiler be worked separately Yes Area of fire grate in each boiler oil fuel No. and Description of Safety Valves to each boiler 2 spring loaded Area of each valve 7.06 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 7' - 9" Mean dia. of boilers 10' - 3" Length 11' - 0" Material of shell plates Steel

Thickness 15/16" Range of tensile strength 28 - 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.L.

long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1" Pitch of rivets 6⅞" Lap of plates or width of butt straps 1' - 3"

Per centages of strength of longitudinal joint rivets 90.5 % plate 85.4 % Working pressure of shell by rules 204 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 31" x 27" No. and Description of Furnaces in each boiler 2 corrugated Morison Material Steel Outside diameter 3' - 3¼"

Length of plain part top ..... bottom 7½" Thickness of plates crown ..... bottom 7/16" Description of longitudinal joint Welded No. of strengthening rings —

Working pressure of furnace by the rules 192 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom ¾"

Pitch of stays to ditto: Sides 8" x 7½" Back 8" x 7½" Top 8" x 7½" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs

Material of stays Steel Area at smallest part 2.03 □" Area supported by each stay 78.7 □" Working pressure by rules 187 lbs End plates in steam space:

Material Steel Thickness 29/32" Pitch of stays 14½" x 14½" How are stays secured D. Nuts Working pressure by rules 185 lbs Material of stays Steel

Area at smallest part 4.3 □" Area supported by each stay 210 □" Working pressure by rules 212 lbs Material of Front plates at bottom Steel

Thickness 29/32" Material of Lower back plate Steel Thickness 29/32" Greatest pitch of stays 13" x 7½" Working pressure of plate by rules 185 lbs

Diameter of tubes 3" Ext. Pitch of tubes 4" x 4" Material of tube plates Steel Thickness: Front 29/32" Back ¾" Mean pitch of stays 10" x 10"

Pitch across wide water spaces 13" x 8" Working pressures by rules 294 lbs Front 236 lbs Back Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7⅞" x 1½" Length as per rule 2.75 ~~2 - 4⅜"~~ Distance apart 7½" Number and pitch of stays in each 3 @ 8"

Working pressure by rules 184 lbs 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 — 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 —

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

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W1162-0181

IS A DONKEY BOILER FITTED? Not so fitted *If so, is a report now forwarded?*

SPARE GEAR. *State the articles supplied:—* 2 connecting rod top end & 2 bottom end bolts & nuts, 2 main bearing & 1 set coupling bolts & nuts, 1 set feed & bilge pump valves, 1 set piston rings for each piston & piston valve, a quantity of assorted bolts & nuts & rivets of various sizes, 1 set of top & bottom end brasses, 1 eccentric strap rod bolts complete, 1 piston rod with slipper complete, 1 slide rod, 1 set boiler check valves, 1 set safety valve springs, spare parts for oil pumps, aux pumps, electric installation &c.

The foregoing is a correct description,

THE CLYDE SHIPBUILDING & ENGINEERING CO., LIMITED.
H. V. Lamb Secy. per W.D.
Manufacturer.

Dates of Survey while building
- *During progress of work in shops* — (1917). Feb. 1. Mar. 28. 30. Apl. 2. 3. 13. 17. 19. 20. 23. 26. May. 2. 3. 4. 8. 10. 11. 15. 16. 21. June. 12. 13. 18. 19. 20. 25. July. 18. 27. Aug. 13.
- *During erection on board vessel* — 22. 29. 31. Sep. 4. 19. 20. Oct. 2. 5. 9. 11. 15. 16. 18. 24. 26. 29. Nov. 5. 7. 12. 15. 19. 21. 23. 26. 29. Dec. 3. 4. 6. 14. 10. 11. 12.—
- *Total No. of visits* 61.

Is the approved plan of main boiler forwarded herewith Yes

" " " *donkey* " " " ✓

Dates of Examination of principal parts—*Cylinders* 10/5/17 *Slides* 10/5/17 *Covers* 29/5/17 *Pistons* 6/6/17 *Rods* 15/5/17
Connecting rods 15/5/17 *Crank shaft* 29/5/17 *Thrust shaft* 19/6/17 *Tunnel shafts* ✓ *Screw shaft* 19/6/17 *Propeller* 16/10/17
Stern tube 19/9/17 *Steam pipes tested* 26/4/17 & 29/4/17 *Engine and boiler seatings* 24/10/17 *Engines holding down bolts* 7/11/17
Completion of pumping arrangements 6/12/17 *Boilers fixed* 6/12/17 *Engines tried under steam* 12/12/17.
Completion of fitting sea connections 11/10/17. *Stern tube* 11/10/17 *Screw shaft and propeller* 16/10/17
Main boiler safety valves adjusted 6/12/17 *Thickness of adjusting washers* Port Boiler 13/32" 5/16" full; Stbd Boiler 1/2" full 9/16"
Material of Crank shaft Steel *Identification Mark on Do.* 252 *Material of Thrust shaft* Steel *Identification Mark on Do.* 252
Material of Tunnel shafts ✓ *Identification Marks on Do.* ✓ *Material of Screw shafts* Iron *Identification Marks on Do.* 252
Material of Steam Pipes Steel. ✓ *Test pressure* 600 lbs. ✓
Is an installation fitted for burning oil fuel Yes ✓ *Is the flash point of the oil to be used over 150°F.* Yes ✓
Have the requirements of Section 49 of the Rules been complied with Yes ✓
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 engines & boilers of this vessel have been built under special survey, and the materials & workmanship are good. On completion they were examined while running full power trials in the Firth and found satisfactory.
The machinery throughout is now in good & efficient condition & eligible in my opinion to have the record + LMC 12 17 marked in the Society's Register Book. also "Fitted for oil fuel F.P above 150°F"

Certificate (if required) to be sent to Greenock.

The Surveyors are requested not to write on or below the space for Committee's Minute.)

It is submitted that
this vessel is eligible for
THE RECORD. + LMC. 12.17. F.D.
Fitted for oil fuel 12.17. F.P. above 150°F.

HWD. 20/12/17

The amount of Entry Fee ...	£ : :	When applied for,	18/12/1917
Special	£55 : 0 :		
Donkey Boiler Fee ...	£ : :	When received,	1/1/18
Travelling Expenses (if any)	£ : :		

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW. 18 DEC. 1917

Assigned + L.M.C. 12.17.

? Oil fuel FD.

MACHINERY CERTIFICATE WRITTEN 19.12.17

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