

REPORT ON MACHINERY

No. 16986
SAT. - 8 APR. 1916

Received at London Office

Date of writing Report 30 March 1916 When handed in at Local Office 1 April 1916 Port of Greenock

No. in Survey held at Greenock Date, First Survey 3rd July 1915 Last Survey 1 April 1916
Reg. Book. on the Old Steam Tanna Tennachar (Number of Visits 102)

Master Built at Greenock By whom built Greenock S & Yard Co Tons { Gross
Net When built 1916

Engines made at Greenock By whom made Rankin & Blackmore when made 1916

Boilers made at Greenock By whom made Rankin & Blackmore when made 1916

Registered Horse Power Owners Geo Harrison & Co Port belonging to Glasgow

Nom. Horse Power as per Section 28 481 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Compound No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 26 - 40 - 72 Length of Stroke 48 Revs. per minute 68 Dia. of Screw shaft 14.7 Material of screw shaft Steel

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 Yes 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 Yes Length of stern bush 66

Dia. of Tunnel shaft 13.05 Dia. of Crank shaft journals 13.7 Dia. of Crank pin 14 Size of Crank webs 8 7/8 x 9 Dia. of thrust shaft under collars 14

Dia. of screw 18.0 Pitch of Screw 17.5 No. of Blades 4 State whether moveable Yes Total surface 105 sq ft

No. of Feed pumps Two Diameter of ditto 4 Stroke 26 Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 4 1/2 Stroke 26 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps 8" x 8" - 5" x 8" - 4 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2" In Holds, &c. Two in Gun Room 2 1/4"

Wain Seed Pump 10 1/2" x 21" Independent Circulating Pump 15"

No. of Bilge Injections no sizes 8 1/4" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size 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 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 no How are they protected no

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 22/10/15 of Stern Tube 30/8/15 Screw shaft and Propeller 1/12/15

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door no worked from no

OILERS, &c.—(Letter for record S(17)) Manufacturers of Steel Steel Co of Scotland

Total Heating Surface of Boilers 6950 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Two single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 26 Jan 15 No. of Certificate 1288

Can each boiler be worked separately Yes Area of fire grate in each boiler 72 sq ft No. and Description of Safety Valves to each boiler Two Spring

Area of each valve 14.19 sq in 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 18" Mean dia. of boilers 17.6" Length 12.6" Material of shell plates Steel

Thickness 1 1/16" Range of tensile strength 28 - 32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams no

long. seams all ship Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 9 1/16" Lap of plates or width of butt straps 20 1/2"

Per centages of strength of longitudinal joint rivets 86.8 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"

Size of compensating ring Hanged No. and Description of Furnaces in each boiler 4 Brighton Material Steel Outside diameter 47 1/2"

Length of plain part top no bottom no Thickness of plates crown 9/16" Description of longitudinal joint welded No. of strengthening rings angled

Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 10/16" Top 1 1/16" Bottom 1 7/16"

Pitch of stays to ditto: Sides 9 1/2" x 9 1/2" Back 9" x 8 1/2" Top 10 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads both Working pressure by rules 181 lbs

Material of stays Steel Diameter at smallest part 2.05" Area supported by each stay 85.3 sq in Working pressure by rules 2200 lbs End plates in steam space:

Material Steel Thickness 1 1/16" Pitch of stays 20 1/4" x 17" How are stays secured all nut Working pressure by rules 180 lbs Material of stays Steel

Diameter at smallest part 8.12" Area supported by each stay 253 sq in Working pressure by rules 2000 lbs Material of Front plates at bottom Steel

Thickness 1 5/16" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays 12 1/4" Working pressure of plate by rules 182 lbs

Diameter of tubes 2 1/2" Pitch of tubes 2 5/32" x 3 5/16" Material of tube plates Steel Thickness: Front 1 5/16" Back 1 2/16" Mean pitch of stays 8.03"

Pitch across wide water spaces 13 1/4" Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 13 1/4" x 1 1/2"

Length as per rule 45 5/8" Distance apart 10 1/2" Number and pitch of stays in each 4 - 8 1/8"

Working pressure by rules 185 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked separately no

Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet no

Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no

stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no

Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

Lloyd's Register Foundation
W479-0194

IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

SPARE GEAR.

State the articles supplied:— *The top end bolts. The bottom end bolts. The main bearing bolts. One set coupling bolts. One set dead forward valves. One set bridge pump valves. One set of piston springs. One set of piston springs. One set main and one set donkey check valves. Propeller shaft. Propeller. Spare bearing brass pump. Slide valve spindle one pair bottom end cranes. One pair top end cranes. Bolts. nuts &c &c.*

The foregoing is a correct description,

*Ranthin & Bleckmore Ltd
of H. Trovart*

Manufacturer.

(1915) Feb. 3. Mar. 4. 10. 17. 22. 31. Apr. 5. 8. 15. 22. 28. May 4. 6. 17. 20. 25. June 2. 9. 11. 15. 21. 23. 29. July 9. 15. 16. 20. 22. 26. 28. 29. Aug. 2. 6. 10. 13. 17. 18. 20. 23. 26. 30. Sep. 3. 8. 14. 17. 22. 30. Oct. 5. 7. 11. 14. 18. 20. 22. 27. 29. Nov. 1. 2. 5. 9. 12. 16. 18. 24. 26. 30. Dec. 1. 2. 6. 8. 10. 13. 15. 16. 21. 22. 28. 29. (1916) Jan. 7. 10. 18. 20. 26. 27. Feb. 4. 9. 22. 29. Mar. 1. 3. 6. 7. 9. 14. 15. 17. 21. 22. 23. 24. 25. Apr. 1.

Dates of Survey while building

During progress of work in shops - - -
During erection on board vessel - - -
Total No. of visits *102.*

Is the approved plan of main boiler forwarded herewith *Yes*
" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *7/10/15* Slides *12/11/15* Covers *7/10/15* Pistons *29/10/15* Rods *27/10/15*
Connecting rods *24/11/15* Crank shaft *see report* Thrust shaft *9/11/15* Tunnel shafts *9/11/15* Screw shaft *9/11/15* Propeller *24/11/15*
Stern tube *23/8/15* Steam pipes tested *19/3/16* Engine and boiler seatings *22/10/15* Engines holding down bolts *1/3/16*
Completion of pumping arrangements *24/3/16* Boilers fixed *1/3/16* Engines tried under steam *24/3/16*
Main boiler safety valves adjusted *24/3/16* Thickness of adjusting washers *P 5/16 - 5 1/16. P 1/2 - 5 3/16.*

Material of Crank shaft *steel* Identification Mark on Do. *4616* Material of Thrust shaft *steel* Identification Mark on Do. *182*
Material of Tunnel shafts *steel* Identification Marks on Do. *182* Material of Screw shafts *steel* Identification Marks on Do. *182*

Material of Steam Pipes *iron* 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. *✓*
Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery duplicate of a previous case *✓* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c. *Workmanship good.*

Machinery fitted all.

The machinery and boilers of this steamer have been constructed under special survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification + L.M.C. 4-16 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 4.16. F.D.

J.W.D. 11/4/16. J.P.R.

James James, Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Table with 4 columns: Fee type, Amount (£), When applied for, When received.

Committee's Minute *GLASGOW - 6 APR. 1916*

Assigned *+ L.M.C. 4, 16*

