

REPORT ON MACHINERY

No. 17838

WED. 22 JUN. 1921

Received at London Office

Date of writing Report 17th June 1921. When handed in at Local Office 17th June 1921 Port of Grunwick.

No. in Survey held at Grunwick & Pt. Glasgow. Date, First Survey 18th May 1920 Last Survey 10th June 1921
Reg. Book. on the Screw Steamer "CLAN MACIVER" (Number of Visits 98) Tons { Gross 4606 Net 2750 }

Master W. M. Porterfield. Built at Pt. Glasgow By whom built Lithgows Limited No. 737 When built 1921

Engines made at Grunwick By whom made Rankin and Blackmore Ltd. No. 395 when made 1921

Boilers made at Grunwick. By whom made Rankin and Blackmore Ltd. when made 1921.

Registered Horse Power Owners The Clan Line Steamers Co. Port belonging to Glasgow

Nom. Horse Power as per Section 28 517 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 27"-44"-73" Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft as per rule 14.77 Material of screw shaft I.S.
as fitted 15 1/2

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 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 — If two

liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 61 1/4

Dia. of Tunnel shaft as per rule 13.3 Dia. of Crank shaft journals as per rule 13.99 Dia. of Crank pin 14 1/2 Size of Crank webs 28x9 Dia. of thrust shaft under

collars 14 1/2 Dia. of screw 17-9 Pitch of Screw 18-0 No. of Blades 4 State whether moceable no Total surface 100 sq.

No. of Feed pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes + 2 Weir 7x21

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 7x18, 4 1/2 x 6, 14 x 24 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 5-3 1/2 Bore, Tunnel 1-2 1/2 Bore Holds, &c. Forward Hold & Crm Bunker

6-3 1/2 Bore, aft Hold and Deep Tank 4-3 1/2 Bore

No. of Bilge Injections 1 sizes 12 Connected to condenser, or to circulating pump C.P. 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 —

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 Below

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 yes worked from Top Platform, Eng. Room.

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel David Colville and Son Ltd.

Total Heating Surface of Boilers 7668 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers 3 Cyl. Mult. Single End.

Working Pressure 180 lb. sq. in. Tested by hydraulic pressure to 320 lb. sq. in. Date of test 18, 20, 25/4/21 No. of Certificate 1563, 1567, 1568

Can each boiler be worked separately yes Area of fire grate in each boiler 63.33 sq. ft. No. and Description of Safety Valves to

each boiler Two Spring Area of each valve 9.6 sq. in. Pressure to which they are adjusted 185 lb. sq. in. Are they fitted with easing gear yes

Smallest distance between boiler uptakes and bunkers 20 in. dia. of boilers 15-6 Length 11-6 Material of shell plates S.

Thickness 1 1/4 Range of tensile strength 28/32 Tons. Are the shell plates welded or flanged no Descrip. of riveting: air. seams L.D.R.

long. seams DBS/TR Diameter of rivet holes in long. seams 15/16 Pitch of rivets 9/8 Lap of plates or width of butt straps 19 1/2

Per centages of strength of longitudinal joint rivets 88.3 Working pressure of shell by rules 182 lb. sq. in. Size of manhole in shell 16 x 12

Size of compensating ring 30 1/2 x 26 1/2 x 1 3/8 and Description of Furnaces in each boiler 3 Dighton Material S. Outside diameter 50 3/16

Length of plain part top 19 1/2 Thickness of plates bottom 3 1/32 Description of longitudinal joint Weld. No. of strengthening rings —

Working pressure of furnace by the rules 188 lb. sq. in. Combustion chamber plates: Material S. Thickness: Sides 23/32 Back 11/16 Top 23/32 Bottom 23/32

Pitch of stays to ditto: Sides 10 7/8 x 9/4 Back 10 1/4 x 8 3/4 Top 10 7/8 x 9/4 If stays are fitted with nuts or riveted heads nuts. Working pressure by rules 180 lb. sq. in.

Material of stays S. Area at smallest part 2.39 sq. in. Area supported by each stay 98.3 sq. in. Working pressure by rules 220 lb. sq. in. End plates in steam space:

Material S. Thickness 1 1/32 Pitch of stays 2 1/4 x 20 1/2 are stays secured D.N. Working pressure by rules 181 lb. sq. in. Material of stays S.

Area at smallest part 8.29 sq. in. Area supported by each stay 446 sq. in. Working pressure by rules 191 lb. sq. in. Material of Front plates at bottom S.

Thickness 3/32 Material of Lower back plate S. Thickness 27/32 Greatest pitch of stays 13 5/8 x 8 3/4 Working pressure of plate by rules 188 lb. sq. in.

Diameter of tubes 2 3/4 Pitch of tubes 4 x 3 7/8 Material of tube plates S. Thickness: Front 31/32 Back 3/4 Mean pitch of stays 9 7/8

Pitch across wide water spaces 13 5/8 Working pressures by rules 181 lb. sq. in. Girders to Chamber tops: Material S. Depth and

thickness of girder at centre 10 x 1 3/4 Length as per rule 35 9/16 Distance apart 10 5/8 Number and pitch of stays in each 30 9/4

Working pressure by rules 188 lb. sq. in. 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 —

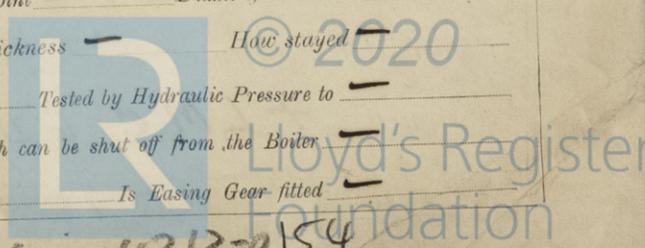
SUPERHEATER. Type none Date of Approval of Plan — Tested by Hydraulic Pressure to —

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 —

5737 E395

If not, state whether, and when, one will be sent



004206-004212-0154

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top and both & nuts, two bottom and ditto, two main bearing ditto, set of coupling bolts, spare valves for air, feed and bilge pumps, one propeller shaft, one propeller.*

The foregoing is a correct description,
RANKIN & BLACKMORE, LTD.,

M Rankin Director.

Manufacturer.

Dates of Survey while building { During progress of work in shops - - - 1920 May 18. 21. 26. 27. 31 Jun 9 Aug 13. 17. 24 Sep. 1. 6. 8. 13. 17. 23. 29 Oct. 2. 5. 8. 12. 14. 20. 22. 27. 29 Nov. 2. 5. 10. 15. 19. 24. 29 Dec. 2. 6. 9. 14. 20. 24. 29
During erection on board vessel - - - 1921 Jan 12. 13. 17. 19. 21. 23. 26. 28. 31 Feb 1. 4. 8. 11. 14. 16. 17. 18. 21. 22. 24. 28 Mar 3. 4. 8. 10. 14. 16. 17. 21. 25. 29. 30 Apr 1. 6. 12. 13. 18. 20. 25. 26. 27. 29
Total No. of visits 98.

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

Dates of Examination of principal parts—Cylinders *8.2.21* Slides *4.2.21* Covers *17.2.21* Pistons *17.2.21* Rods *17.2.21*
Connecting rods *28.1.21* Crank shaft *28.1.21* Thrust shaft *31.1.21* Tunnel shafts *28.2.21* Screw shaft *18.4.21* Propeller *6.4.21*
Stern tube *14.3.21* Steam pipes tested *21.5.21* Engine and boiler seatings *23.5.21* Engines holding down bolts *3.6.21*

Completion of pumping arrangements *26.5.21*. Boilers fixed *3.6.21* Engines tried under steam *10.6.21*
Completion of fitting sea connections *16.2.21* Stern tube *29.3.21* Screw shaft and propeller *9.5.21*
Main boiler safety valves adjusted *10.6.21* Thickness of adjusting washers *P. 3/32 S. 1/8 P. 7/16 S. 1/8 P. 7/16 S. 1/8*

Material of Crank shaft *I.S.* Identification Mark on Do. *508.WL* Material of Thrust shaft *I.S.* Identification Mark on Do. *508.WL*
Material of Tunnel shafts *I.S.* Identification Marks on Do. *508.WL* Material of Screw shafts *I.S.* Identification Marks on Do. *508 J.R.*
Material of Steam Pipes *Wrought 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. *Yes*
Have the requirements of Section 49 of the Rules been complied with *Yes*
Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *S.S. 'CLAN MACINDOE'*

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The above Machinery and Boilers have been constructed under Special Survey and have been fitted on board the Vessel in accordance with the Society's Rules.
The Vessel is eligible, in opinion, to have certification, + L.M.C. 6.21 F.D., Fitted for oil fuel. 6.21 F.P. above 150°F.*

It is submitted that this vessel is eligible for THE RECORD + LMC 6.21, FD. CL. Fitted for oil fuel 6.21, F.P. above 150°F.

MACHINERY TESTED WRITTEN 27/6/21

W.D. 27/6/21

The amount of Entry Fee ... £ *6 0 0* When applied for, *14/6/1921*
Special ... £ *100 17 0*
Donkey Boiler Fee ... £ *-*
Travelling Expenses (if any) £ *-* When received, *15/6 1921*

W. Law & G. Robertson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASSGOW 21 JUN 1921*

Assigned *+ LMC 6.21. F.D. Fitted for oil fuel 6.21 F.P. above 150°F.*



GREENOCK

Certificate (if required) to be sent to
The Surveyors are requested not to write on or below the space for Committee's Minute.