Rpt. 4.

11 NOV 1936 No. 12645

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office -2 SEP 1936

Date of written Report 31st Aug. 1936 When handed in at Local Office 31st Aug. 1936 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book 7322 Survey held at Newcastle-upon-Tyne Date, First Survey 7-8-1936 Last Survey 27.8. 1936 (Number of Visits 76)

on the T.S.S. "CLAN MACAULAY" Tons Gross 10448 Net 6406

Built at Greenock By whom built Greenock Dockyard Co. Ltd. Yard No. 425 When built 1936.

Engines made at Wallsend-upon-Tyne By whom made North Eastern Marine Eng. Co Ltd. Engine No. 2845 When made 1936.

Boilers made at Wallsend-upon-Tyne By whom made North Eastern Marine Eng. Co Ltd. Boiler No. 2845 When made 1936.

Registered Horse Power Owners The Clan Line Steamers, Ltd. (Cayzer, Irvine & Co. Ltd.) Port belonging to Glasgow.

Nom. Horse Power as per Rule 1585 / Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes.

Trade for which Vessel is intended With L.P. Turbines

ENGINES, &c.—Description of Engines Twin Screws - Triple Expansion Revs. per minute 92

Dia. of Cylinders 26"-42"-73" Length of Stroke 48" No. of Cylinders 6 No. of Cranks 6

Crank shaft, dia. of journals as per Rule 14.54" as fitted 15 1/8" Crank pin dia. 15 1/8" Crank webs Mid. length breadth 2'-2 1/2" Mid. length thickness 9 1/2" shrunk Thickness parallel to axis 9 1/2" Thickness around eye-hole 7 9/16"

Intermediate Shafts, diameter as per Rule 14.39" as fitted 14 3/4" **Thrust shaft**, diameter at collars as per Rule / as fitted } See Report on L.P. Turbines

Tube Shafts, diameter as per Rule — as fitted — **Screw Shaft**, diameter as per Rule 15.85" as fitted 16 7/8" Is the {tube / screw} shaft fitted with a continuous liner {—/yes}

Bronze Liners, thickness in way of bushes as per Rule 25.1/32" as fitted 13/16" Thickness between bushes as per Rule 18.8/32" as fitted 23/32" Is the after end of the liner made watertight in the propeller boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner One length

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? Into full length

If two liners are fitted, is the shaft lapped or protected between the liners — Is an approved **Oil Gland** or other appliance fitted at the after end of the tube shaft No If so, state type — Length of Bearing in **Stern Bush** next to and supporting propeller 5'-11 1/2"

Propeller, dia. 17'-6" Pitch Var. 19'-9" Mean No. of Blades 3 Material Bronze whether Moveable yes Total Developed Surface 91 sq. feet

Feed Pumps worked from the **Main Engines**, No. 2 Diameter 4 3/4" Stroke 21" Can one be overhauled while the other is at work yes.

Bilge Pumps worked from the **Main Engines**, No. 2 Diameter 4 3/4" Stroke 21" Can one be overhauled while the other is at work yes.

Feed Pumps No. and size 2C 15 1/2" × 11 1/2" × 24" + One 14" × 10 1/2" × 22" How driven Steam Steam **Pumps** connected to the **Main Bilge Line** No. and size One 10 1/2" × 12 1/2" × 21" + One 8" × 10 1/2" × 15" How driven Steam Steam

Ballast Pumps, No. and size One 10 1/2" × 12 1/2" × 21" **Lubricating Oil Pumps**, including Spare Pump, No. and size See Report on L.P. Turbines.

Are two independent means arranged for circulating water through the **Oil Cooler** ✓ **Suctions**, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room ✓

In Pump Room ✓ In Holds, &c. ✓

Main Water Circulating Pump Direct Bilge Suctions, No. and size ✓ **Independent Power Pump Direct Suctions** to the Engine Room Bilges, No. and size ✓ Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes ✓

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges ✓

Are all **Sea Connections** fitted direct on the skin of the ship ✓ Are they fitted with Valves or Cocks ✓

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates ✓ Are the Overboard Discharges above or below the deep water line ✓

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel ✓ Are the Blow Off Cocks fitted with a spigot and brass covering plate ✓

What Pipes pass through the bunkers ✓ How are they protected ✓

What pipes pass through the deep tanks ✓ Have they been tested as per Rule ✓

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times ✓

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another ✓ Is the Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

MAIN BOILERS, &c.—(Letter for record S ✓) Total Heating Surface of Boilers 20142 ft² ✓

Is Forced Draft fitted Yes ✓ No. and Description of Boilers Six Single Ended Working Pressure 220 lbs./in² ✓

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes. ✓

IS A DONKEY BOILER FITTED? No ✓ If so, is a report now forwarded? ✓

Is the donkey boiler intended to be used for domestic purposes only ✓

PLANS. Are approved plans forwarded herewith for Shafting ✓ Main Boilers Yes Auxiliary Boilers ✓ Donkey Boilers ✓ (If not state date of approval)

Superheaters ✓ General Pumping Arrangements ✓ Oil fuel Burning Piping Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes ✓

State the principal additional spare gear supplied One propeller shaft; 2 right and 2 left hand propeller blades; one top and one bottom End bush; one set of H.P. piston rings for each Engine; 12 air pump valves; one set of feed and bilge pump valves; one main and one donkey feed check valve; Etc.

The foregoing is a correct description,

for THE NORTH EASTERN MARINE ENGINEERING Co LTD

John Neill

Manufacturer.

NOTE.—The words which do not apply should be deleted. If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

1m.2/29. T.

Dates of Survey while building

During progress of work in shops — 1936 FEB. 7.14.17.18.27 MAR. 2.6.10.11.12.16.20.24.25. APL. 1.6.8.21.23. MAY 5.7.8.12.14.15.18.21. 25.26.29. JUNE 2.4.5.8.10.15.16.18.22.29.30. JULY 1.2.3.6.7.8.9.10.11.13.14.15.16.20.21.24.

During erection on board vessel — 27.28.30.31. AUG. 4.5.6.7.10.11.12.13.14.18.19.21.24.26.27.

Total No. of visits 46.

Dates of Examination of principal parts—*Cylinders* 15.6.36 TO 11.7.36 *Slides* 22.6.36 TO 11.7.36 *Covers* 15.6.36 TO 11.7.36

Pistons 22.6.36 TO 11.7.36 *Piston Rods* 11.7.36 *Connecting rods* 11.7.36

Crank shaft P 8.4.36 S 8.6.36 *Thrust shaft* Lie Report on L.P. Turbines *Intermediate shafts* 7.5.36 & 27.7.36

Tube shaft — *Screw shaft* P 2.7.36 S 15.7.36 Spare 24.7.36 *Propeller* 24.7.36

Stern tube S. 9.7.36 P 15.7.36 *Engine and boiler seatings* ✓ *Engines holding down bolts* ✓

Completion of fitting sea connections ✓

Completion of pumping arrangements ✓ *Boilers fixed* ✓ *Engines tried under steam* ✓

Main boiler safety valves adjusted ✓ *Thickness of adjusting washers* ✓

Crank shafts material Steel *Identification Mark* P 2845 H.C.F. 8.4.36 S 2846 H.C.F. 8.6.36 *Thrust shaft material* Lie Rpt. on L.P. Turbines *Identification Mark* —

Intermediate shafts, material Steel *Identification Marks* 5926(2) H.C.F. 7.5.36; 5926(8) H.C.F. 27.7.36 6355(2) H.C.F. 27.7.36 *Tube shaft, material* — *Identification Mark* —

Screw shaft, material Steel *Identification Mark* P. 5926 H.C.F. 2.7.36 S 5926 H.C.F. 15.7.36 Spare 5926 H.C.F. 24.7.36 *Steam Pipes, material* C/o Steel *Test pressure* 660 lbs/□" *Date of Test* 24.7.36 TO 19.8.36

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 the Rules for the use of oil as fuel been complied with Lie Grk. Report

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No *If so, have the requirements of the Rules been complied with* ✓

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with ✓

Is this machinery duplicate of a previous case Yes. ✓ *If so, state name of vessel* T.S.S. "PERTHSHIRE" Rpt. No. 93560

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

This machinery has been constructed under special survey in accordance with the Rules and approved plans; the materials and workmanship are good.
The machinery is being forwarded to Greenock for instalment in the vessel.
On instalment in the vessel, and after a satisfactory trial under working conditions, this machinery will be eligible, in my opinion, for classification, and to have the record ✠ L.M.C. (with date) — C.L. in the Register Book.

Certificate to be sent to NEWCASTLE-on-TYNE

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

The amount of Entry Fee ...	£	6	0	0
Special 2nd. 4/5 Grk. 1/5 ...	£	111 / 27	14 / 18	0 / 6
Donkey Boiler Fee ...	£			
Travelling Expenses (if any)	£			

When applied for, 1 SEP 1936

When received, 12-11 36 19

H. Forster. 13/11

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 10 NOV 1936 JR6

Assigned See Grk. Rpt. No. 20255.