

REPORT ON MACHINERY.

No. 43891

10 SEP 1924

Date of writing Report 14th August 1924 When handed in at Local Office 14th August 1924 Port of Glasgow
 No. in Survey held at Glasgow & Burntisland Date, First Survey 8-9-23 Last Survey 5th August 1924
 Reg. Book. 30257 on the S.S. "PENTRAETH" (Number of Vessels 149)

Master Built at Burntisland By whom built Burntisland C.B. Co. Ltd. (N^o 129) When built 1924
 Engines made at Glasgow By whom made O. Rowan & Co. Ltd. (N^o 785) when made 1924
 Boilers made at Glasgow By whom made O. Rowan & Co. Ltd. (N^o 786) when made 1924
 Registered Horse Power Owners The Pentwyn Steamship Co. Ltd. Port belonging to Cardiff
 Nom. Horse Power as per Section 28 251 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 22" 36" 60" Length of Stroke 39" Revs. per minute 82 Dia. of Screw shaft as per rule 12.28" Material of screw shaft as fitted 12.39" 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 — 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 charged If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4' 1 1/2" NO OIL GLAND.
 Dia. of Tunnel shaft as per rule 10.87" Dia. of Crank shaft journals as per rule 11.41" Dia. of Crank pin 11 1/2" Size of Crank webs 17 1/2" x 7 1/4" Dia. of thrust shaft under collars 11 3/4" Dia. of screw 15' 3" Pitch of Screw 16-6" No. of Blades 4 State whether moveable No Total surface 73.6 ft²
 No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 21" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 7 3/4" 5 1/2" 12" 8" 10" 8" 5" 3 1/2" 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room — 3-2 1/2", 1-4" special, 1-2 1/2" tunnel well Holds, &c. — No 1 Hold — 2-2 1/2", No 2 Hold 2-3"
 No. of Bilge Injections One size 4 1/2" Connected to condenser, or to circulating pump 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 — 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 — 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 Upper Deck

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel Mannesmann-Röhrenwerke, Abt. Schulz-Knaudt, Hück-King, & Co. Ltd. 255, Hanau-Köln, Steel Co. Ltd.

Total Heating Surface of Boilers 3970 ft² Is Forced Draft fitted No No. and Description of Boilers 2 Single Ended
 Working Pressure 180 lbs./sq. in. Tested by hydraulic pressure to 320 lbs./sq. in. Date of test 7.5.24 No. of Certificate 16489
 Can each boiler be worked separately Yes Area of fire grate in each boiler 57.75 ft² No. and Description of Safety Valves to each boiler two spring loaded Area of each valve 7.06 ft² Pressure to which they are adjusted — 185 lbs. Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers on woodwork — 14" Int. Mean dia. of boilers 14'-9" Length 10'-6" Material of shell plates Steel
 Thickness 1 1/8" Range of tensile strength 28/32 tons/sq. in. Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. LAF long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 27/32" Lap of plates or width of butt straps 18 3/4"

Per centages of strength of longitudinal joint rivets 89 plate 88.8 Coult. 89.6 Working pressure of shell by rules 180 lbs./sq. in. Size of manhole in shell 19 1/2" x 15 1/2"
 Size of compensating ring 34" x 30" x 1 1/8" flange No. and Description of Furnaces in each boiler 3 Peighton Material Steel Outside diameter 3'-7 3/32"
 Length of plain part top 1' bottom 1' Thickness of plates crown 3/8" bottom 1/2" Description of longitudinal joint weld No. of strengthening rings None

Working pressure of furnace by the rules 184 lbs./sq. in. Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 21/32" Top 23/32" Bottom 23/32"
 Pitch of stays to ditto: Sides 10 3/8" x 9 1/2" Back 9 1/4" x 8 5/8" Top 10 3/8" x 9 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs./sq. in.
 Material of stays Steel Dia. over threads 1 5/8" Area at smallest part 1 3/4" Area supported by each stay 98.5 ft² Working pressure by rules 185 lbs./sq. in. End plates in steam space:
 Material Steel Thickness 1 1/4" Pitch of stays 19 3/4" x 20 1/2" How are stays secured D. Nut Working pressure by rules 180 lbs./sq. in. Material of stays Steel
 Dia. at body 3" Area at smallest part 2 3/4" Area supported by each stay 363.25 ft² Working pressure by rules 183 lbs./sq. in. Material of Front plates at bottom Steel
 Thickness 27/32" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/8" x 8 7/8" Working pressure of plate by rules 181 lbs./sq. in.

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 27/32" Back 23/32" Mean pitch of stays 10"
 Pitch across wide water spaces 13 7/8" Working pressures by rules Front 180 lbs./sq. in. Back 184 lbs./sq. in. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 3/4" x 20 7/8" Length as per rule 2'-8 5/8" Distance apart 9 1/2" Number and pitch of stays in each 2 @ 10 3/8"
 Working pressure by rules 181 lbs./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 —

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IS A DONKEY BOILER FITTED? *Yes.*

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

SPARE GEAR. State the articles supplied:— *All as per Rule Requirements and, in addition, one propeller and a quantity of small gear.*

The foregoing is a correct description,

For David Rowan & Co. Ltd.
Archd. H. Greenison } Manufacturer.

Dates of Survey while building { During progress of work in shops -- *23 Aug. 8. 9. 27. 30. Sep. 18. 20. 26 Oct. 2. 10. 17. 23. 25 Nov. 20. 28. 29 Dec. 10. 16. 24.*
During erection on board vessel -- *24 Jan. 19. 22. 28 Feb. 1. 4. 7. 14. 18. 25. Mar. 4. 11. 26. 27. Apr. 8. 15. 22. May 1. 5. 7. 14. 24. 26. 28.*
Total No. of visits *49.*

Is the approved plan of main boiler forwarded herewith *Yes.*

Keith. 16-6-24 25-6-24 4-7-24
12, 14, 19 25 & 27 Aug 1924 8 visits " " donkey " " " " " "

Dates of Examination of principal parts—Cylinders *4.3.24* Slides *28.5.24* Covers *4.3.24* Pistons *28.5.24* Rods *28.5.24*
Connecting rods *28.5.24* Crank shaft *8.4.24* Thrust shaft *7.5.24* Tunnel shafts *24.5.24* Screw shafts *14.5.24* Propeller *14.5.24*
Stern tube *2.6.24* Steam pipes tested *5.8.24* Engine and boiler seatings *24.6.24* Engines holding down bolts *14.7.24*

Completion of pumping arrangements *- 23-7-24* Boilers fixed *- 18-7-24* Engines tried under steam *- 27-8-24*

Completion of fitting sea connections *- 4-7-24* Stern tube *- 16-6-24* Screw shaft and propeller *- 1-7-24*

Main boiler safety valves adjusted *- 24-8-24* Thickness of adjusting washers *- P { P.375" S { P.375" S { P.375"*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S No. 144 H.C.F. 8.24* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S No. 144 H.C.F. 8.24*

Material of Tunnel shafts *Steel* Identification Marks on Do. *LLOYD'S No. 144 H.C.F. 8.24* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYD'S No. 144 H.C.F. 8.24*

Material of Steam Pipes *40 Copper* Test pressure *400 lbs/sq. in.*

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.)

This machinery has been constructed under special survey in accordance with the Rules and approved plans; the materials and workmanship are good. The machinery, which has been forwarded to Keith to be installed on board the vessel, is eligible, in my opinion, for classification and to have the record of L.M.C. (with date) in the Register Book, when it has been satisfactorily fitted on board the vessel and examined under working conditions. The machinery of this vessel has been securely fitted on board. Safety valves of main & donkey boilers adjusted under steam to the above pressures. Spare gear checked & found in order. The machinery tried under steam & found satisfactory. The machinery of this vessel is in good order & eligible in my opinion to have record of L.M.C. 8.24 in the Register Book & also notation for T.S.C. 8.24.

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.24. CL.

The amount of Entry Fee ... £ *4 : 0 : 0* When applied for, *15/8/24*
Special *4/5 9/6* ... £ *50 : 2 : 0*
Donkey Boiler Fee ... £ *200 0/0 0/0* When received, *15/8/24*
Travelling Expenses (if any) £ *:*

Committee's Minute *GLASGOW 19 AUG 1924*

Assigned *Deferred*

FRI, 12 SEP 1924

+ L.M.C. 8.24

CERTIFICATE WRITTEN

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