

# REPORT ON MACHINERY.

No. 18668.

4a.

Received at London Office

When handed in at Local Office 17/3/1927. Port of Greenock  
 Date First Survey 3<sup>rd</sup> August 1925. Last Survey 16<sup>th</sup> March 1927.  
 (Number of Visits 98)

Survey held at Greenock  
 on the T/Ss "Callaghan" Napierstar  
 Built at DeLongou By whom built Lilligou & Co. Ltd.  
 When built 1924  
 By whom made Parson Marine Steam Turbine Co. Ltd. when made 1924  
 By whom made Glen & Macdonald & Co. Ltd. (Glasgow) when made 1927  
 Owners Blue Star Line (1926) Ltd. Port belonging to London

Registered Horse Power 6600  
 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

DESCRIPTION OF ENGINES Impulse Reaction SR Geared Turbines No. of Turbines 2 H.P. 2 L.P.  
 Diameter of Rotor Shaft Journals, H.P. 12 3/4" L.P. 13 3/4" Diameter of Pinion Shaft 11 7/8"  
 Diameter of Journals 11 7/8" Distance between Centres of Bearings 133 1/4" Diameter of Pitch Circle 11 7/8"  
 Diameter of Wheel Shaft 11 7/8" Distance between Centres of Bearings 133 1/4" Diameter of Pitch Circle of Wheel 11 7/8"  
 Diameter of Thrust Shaft under Collars 12 3/4" Diameter of Tunnel Shaft 11 7/8"  
 Diameter of same as per rule 133 1/4" Diameter of Propeller 15-0" Pitch of Propeller 13-6"  
 Diameter of Rotor Drum, H.P. 76" L.P. 76" Astern 76"  
 Revs. per Minute at Full Power, Turbine 1500 Propeller 1500

## Particulars of Blading.

H.P.			L.P.			ASTERN.		
HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
EXPANSION								

and size of Feed pumps 2 Main Turbines (12" x 14" x 24") one driven 8" x 10" x 22"  
 and size of Bilge pumps (2 Bilge 4" x 8") (1 Ballast 10" x 12" x 24") one 4" x 8" x 18"  
 and size of Bilge suction in Engine Room Eng Room 2.3" Stokehold 4.3" Tunnel well 1.3"  
 In Holds, &c. 2.3" in each

Bilge Injections 2 sizes 12" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine Room & size Yes 5 1/2"  
 All the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes  
 All connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both  
 They fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above & below the deep water line Yes  
 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  
 Pipes are carried through the bunkers Four Bilge pipes How are they protected Wood casing  
 All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 The Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes  
 Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Platform

Boilers, &c. (Letter for record R) Manufacturers of Steel Thrupp, Colville, Langoch, & Co. Ltd.  
 Heating Surface of Boilers 5064 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers 2 Double ended  
 Working Pressure 200 Tested by hydraulic pressure to 350 Date of test 1.6.26 No. of Certificate 1426.1432  
 Each boiler be worked separately Yes Area of fire grate in each boiler 140 sq. ft. No. and Description of Safety Valves to 2  
 Boiler 2 Cochran Improved High Lift Area of each valve 14 1/8" Pressure to which they are adjusted 205 Are they fitted with easing gear Yes  
 Greatest distance between boilers or uptakes and bunkers or woodwork 5-0" Mean dia. of boilers 17-6" Length 21-6" Material of shell plates S  
 Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams T.O.B.S.  
 Seams T.O.B.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 1-11 1/8"  
 Percentages of strength of longitudinal joint 91.4% Working pressure of shell by rules 201 Size of manhole in shell 16 1/2" x 20 1/2"

Compensating ring 33 1/8" x 38 1/8" x 1 1/2" No. and Description of Furnaces in each Boiler 2 Corrugated Material S Outside diameter 3-10 1/4"  
 Thickness of plates 3 1/8" Description of longitudinal joint weld No. of strengthening rings 1  
 Working pressure of furnace by the rules 211 Combustion chamber plates: Material S Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 3/16"  
 of stays to ditto: Sides 1 1/16" Back 1 1/16" Top 1 3/16" If stays are fitted with nuts or riveted heads Yes Working pressure by rules 209  
 Diameter at smallest part 2 1/2" Area supported by each stay 48.45 sq. in. Working pressure by rules 203 End plates in steam space S  
 Thickness 1 1/2" Pitch of stays 22 1/2" x 1 1/2" How are stays secured One way Working pressure by rules 208 Material of stays S  
 Area supported by each stay 393.45 sq. in. Working pressure by rules 221 Material of Front plates at bottom S  
 Material of Lower back plate S Thickness 1 1/2" Greatest pitch of stays 24" Working pressure of plate by rules 205  
 Pitch of tubes 3 1/2" x 3 1/2" Material of tube plates S Thickness: Front 1" Back 23/32" Mean pitch of stays 9-2"  
 across wide water spaces 13 1/2" Working pressures by rules 205 Girders to Chamber tops: Material S Thickness 1" Diameter and  
 Length as per rule 64.56" Distance apart 8 3/4" Number and pitch of stays in each 6 at 9"  
 Working pressure by rules 202 Steam dome: description of joint to shell 10 of strength of joint Diameter 10"  
 Material S Description of longitudinal joint Weld Diameter of rivet holes 1 1/2" Pitch of rivets 1 1/2"  
 Crown plates: Thickness 1 1/2" How stayed One way

W349-0239 (112)



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

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:

2 Studs Nuts for each Rotor Bearing, ditto for Main Gear Wheel Bearings 2 bolts nuts  
Pinion Bearings 1 Set of Coupling bolts for each one. 1/2" total number of bolts Studs Nuts for each gear, case joint ditto Turbine  
Joints 2 Turbomotion for Oil Lub System 1 Set of Bearing bushes for one Gear Wheel Shaft ditto for Rotor ditto for Pinion Shaft  
half set of Packing for each Head of Rotor Shaft. 1/2 number of Young's fitted 2 reducing Flange Hoses one set of Mitchell P  
for each Turbine of each one fitted one set of Union for adjusting block of different thickness. 1 Set of Feed Pump Valve  
for Bilge 1 Set of Tank Lub Oil Pump. one Bucket Rod for Lub Pump. 1 Ex ahs Valve for each Spring fitted a quantity of  
assorted bolts, Studs nuts Bars plates of mild Steel

FOR JOHN G. KINCAID &amp; COY. LIMITED

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- (1925) Aug. 3-Sept. 28-30 Oct. 23-24-30 Nov. 5-9-12-16-19-26 Dec. 3-8-11-15-23-24-28-29 (1926) Jan. 11-20-22-26-27 Feb. 3-5-8-9-10-12-16-18-19-23 Mar. 1-4-11-16  
During erection on board vessel -- Apr. 1-8-13-16-21-26-29 May 4-10-11-26-27 June 1-2-4-7-8-10-11-15-14-21-24-25-28 July 13-28-30 Aug. 2-6-17-26-28-30 Sept. 3-8-9-15-16-21-22-24-27-28-30 Oct. 1-12 Dec. 14-19-24  
Total No. of visits 98

Is the approved plan of main boiler forwarded herewith

yes

Dates of Examination of principal parts—Casings

Rotors

Blading

Gearing

Rotor shaft

Thrust shaft 30. 7. 26

Tunnel shafts 25. 6. 26

Screw shaft 21. 6. 26

Propeller 14. 6.

Stern tube 15. 6. 26

Steam pipes tested 4/6/26 28/9/26

Engine and boiler seatings 28-4-26

Engines holding down bolts 16-2-

Completion of pumping arrangements 24-9-26.

Boilers fired 1-9-26.

Engines tried under steam 16-3-

Main boiler safety valves adjusted 23/2/24 - 4. 3. 24

Thickness of adjusting washers P 1/16 S 1/32 P 1/4 S 1/4 P 3/8 S 5/16 P 5/16 S

Identification Mark on Do.

Material and tensile strength of Rotor shaft

Identification Mark on Do.

Material and tensile strength of Pinion shaft

Material of Thrust shaft

Identification Mark on Do. LR 351

Material of Wheel shaft

Identification Mark on Do.

LR 764, 1544, 422, 806, 474

Material of Screw shafts

Identification Marks on Do. LR 52574

Material of Tunnel shafts

Identification Marks on Do.

LR 53762, 470, 806, 768

Material of Steam Pipes

Test pressure

600lb

Is an installation fitted for burning oil fuel

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

If so, state name of vessel

yes "S/S Rodney Star" (Hk Rpt 1)

Is this machinery a duplicate of a previous case

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

These Turbines & Boilers  
been built under Special Survey in accordance with  
the approved plans & the workmanship & material are of good  
quality, they have now been securely fitted on board, tested  
under steam & found satisfactory.  
The Machinery is eligible in our opinion for the record of  
LMC 3.27 Fitted for Oil Fuel 3-27 FP above 150°

The amount of Entry Fee ... £

When applied for,

Special

3/5

£ 83 : 9/6

17. 3. 1927

Donkey Boiler Fee

£ 2 : 2

When received

£ 83.96-23/3/27

Travelling Expenses (if any) £

22.27-24/4/27

Committee's Minute

GLASGOW 22 MAR 1927

CERTIFICATE WRITTEN.

W. Gordon-Mitchell  
Engineer Surveyor to Lloyd's Register of Shipping.

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Lloyd's Register  
Foundation



S/S 'Hapertan'

9a.

of Greenock

Continuation of Report No. 18668 dated 17th March, 1927. on the

Damage stated to have been caused by the V-mach  
Port Propeller striking the Quay at Greenock on 26 Jan 1924  
and placed in No 3 Green Dry Dock Glasgow.  
The Blade of Port-Propeller found bent & fractured  
at the tip. Spare Blade now fitted (Stoke's Metal)  
Propeller. Run fastenings strong till sea  
connection fastenings examined.

Wm. Gordon-Munroe



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W349-0239 (212)