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REPORT ON MACHINERY.

No. 2144
19 AUG 1925

Received at London Office

Date of writing Report 10th August 1925 When handed in at Local Office 13th August 1925 Port of Barrow-in-Furness
No. in Survey held at Barrow. Date, First Survey 24th August 1920 Last Survey 11th August 1925
Reg. Book. Number of Visits 102
15911 on the Yarn screw steamer "Carinthia" (bills No 586.)

Gross 20244
Tons Net 12088

Master Built at Barrow. By whom built bickers Ltd. When built 1925
Engines made at Barrow. By whom made bickers Ltd. when made 1925
Boilers made at F. By whom made F. when made 1925
Nominal Registered Horse Power 2434 Owners Cunard S. S. Co. Ltd. Port belonging to Liverpool
Shaft Horse Power at Full Power 12500 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines Parsons geared Turbines. No. of Turbines 4

Diameter of Rotor Shaft Journals, H.P. 6¹/₂" I.P. 10¹/₂" Diameter of Pinion Shaft H.P. 4³/₄" I.P. 5¹/₂"
Diameter of Journals 1¹/₂" Red. 1¹/₂" I.P. 16¹/₂" Distance between Centres of Bearings 2¹/₂" Red. 4¹/₂" I.P. 11¹/₂" Diameter of Pitch Circle 2¹/₂" H.P. 28.94" I.P. 19.14.84"
Diameter of Wheel Shaft 2¹/₂" 19¹/₂" Distance between Centres of Bearings 1¹/₂" Red. 11¹/₂" I.P. 12¹/₂" Diameter of Pitch Circle of Wheel 2¹/₂" Red. 23.49" I.P. 24.44"
Width of Face 2¹/₂" Red. 6¹/₂" Diameter of Thrust Shaft under Collars 19¹/₂" Diameter of Tunnel Shaft as per rule 16.85" as fitted 18"
No. of Screw Shafts Two. Diameter of same as per rule 18.75" Diameter of Propeller 20'-0" Pitch of Propeller 20'-0"
No. of Blades 4 State whether Moveable Yes Total Surface 125 ft² Diameter of Rotor Drum, H.P. 19¹/₂" I.P. 3¹/₂" astern 3'-10"
Thickness at Bottom of Groove, H.P. 1¹/₂" I.P. 2¹/₂" Astern 2¹/₂" R.P. 1¹/₂" Propeller 92

ARTICULARS OF BLADING.

	H.P.	L.P.	2 Rows of plates astern.			
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	2 ¹ / ₂ "	21 ¹ / ₂ "	9	3 ¹ / ₄ "	5'-4 ¹ / ₂ "	44
2ND	1 ¹ / ₂ "	22"	9	4 ¹ / ₂ "	3'-9 ¹ / ₂ "	44
3RD	1 ¹ / ₂ "	23"	7	3 ¹ / ₂ "	4'-0"	44
4TH	2 ¹ / ₂ "	24 ¹ / ₂ "	7	3 ¹ / ₄ "	5'-1 ¹ / ₂ "	2
5TH	3 ¹ / ₄ "	24"	6	4 ¹ / ₄ "	5'-5 ¹ / ₂ "	2
6TH	3 ¹ / ₄ "	24"	6	5 ¹ / ₂ "	5'-5"	1
7TH	1 ¹ / ₂ "	24"	8	6 ¹ / ₂ "	5'-7"	1
8TH	1 ¹ / ₂ "	24"	9	7 ¹ / ₂ "	5'-9 ¹ / ₂ "	1

No. and size of Feed pumps One 100000 lbs per hour. & Two been Receipt 75000 lbs per hour each.
No. and size of Bilge pumps One of 160 tons per hour. One of 100 tons per hour. One Bilge Ballast. 200 tons per hour. One Edge Ballast. 200 tons per hour.
No. and size of Bilge suction in Engine Room 5 of 8¹/₂" and 2 of 2¹/₂" and 1 of 3¹/₂" in Refrigerating Engine room. In Hold, &c. 4¹/₂" - 2 of 3¹/₂" 1¹/₂" 2¹/₂" (Sup. Tank) 2 of 3¹/₂" 1¹/₂" 2¹/₂" Copper Dam. 2 of 3¹/₂" Pipe Tunnel. 3 of 9¹/₂" Store rooms 1 of 3¹/₂" also After flat drained with non return valve.
No. of Bilge Injections Two sizes 16" Connected to condenser, or to circulating pump. Pump. Is a separate Donkey Suction fitted in Engine Room & size 1¹/₂" of 6¹/₂"
Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room 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 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 Upperdeck or Bridge.

BOILERS, &c.—(Letter for record) Manufacturers of Steel W. Beardmore & Co. 3DB
Total Heating Surface of Boilers 29164 ft² As Forced Draft fitted No. and Description of Boilers 3 AE. 8. 8 SC. Cyl. built. 3 SB
Working Pressure 220 lb. Tested by hydraulic pressure to 385 lb. Date of test 2-2-25. 7-3-25. 21-3-25. No. of Certificate 390. 391. 392.
Can each boiler be worked separately Yes Area of fire grate in each boiler 5 ft² 4¹/₂" 4 ft² 4¹/₂" 4 ft² 4¹/₂" No. and Description of Safety Valves to each boiler
each boiler 1¹/₂" lift. Double lift. Area of each valve 9¹/₂" 8¹/₂" Pressure to which they are adjusted 225 lb. Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers 1' - 9" Mean dia. of boilers 14'-6" Length 22'-0" & 14'-6" Material of shell plates Steel
Thickness 1¹/₂" Range of tensile strength 30/34 ton Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams 111.111 laps
long. seams YR. 4105. Diameter of rivet holes in long. seams 1¹/₂" Pitch of rivets 10¹/₂" width of butt straps 23¹/₂"
Per centages of strength of longitudinal joint plates 84.2 Working pressure of shell by rules 223 lb Size of opening in shell 21" x 17"
Size of compensating ring 40 x 36¹/₂ x 1¹/₂ flanged. No. and Description of Furnaces in each Boiler 8 in BE. 4 in SE. Material Steel Outside diameter 45¹/₂"

Length of plain part top Thickness of plates crown bottom Description of longitudinal joint Weld No. of strengthening rings
Working pressure of furnace by the rules 221 lb Combustion chamber plates: Material Steel Thickness: Sides 2¹/₂" Back 2¹/₂" Top 2¹/₂" Bottom 1¹/₂"
Pitch of stays to ditto: Sides 9¹/₂" x 8" Back 10" x 4¹/₂" Top 9¹/₂" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 224 lb
Material of stays Iron Diameter at smallest part 1¹/₂" Area supported by each stay 79¹/₂" Working pressure by rules 230 lb End plates in steam space
Material Steel Thickness 1¹/₂" Pitch of stays 1¹/₂" x 18" How are stays secured Double hub Working pressure by rules 220 lb Material of stays Steel
Diameter at smallest part 8" Area supported by each stay 31¹/₂" Working pressure by rules 248 lb Material of Front plates at bottom Steel
Thickness 1" Material of Lower back plate Steel Thickness 2¹/₂" Greatest pitch of stays 18" x 4" Working pressure of plate by rules 244 lb
Diameter of tubes 2¹/₂" Pitch of tubes 14" x 4" Material of tube plates Steel Thickness: Front 1" Back 1¹/₂" Mean pitch of stays 10"
Pitch across wide water spaces 14¹/₂" Working pressures by rules 226 lb Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 9" x 12" Length as per rule 20.344 Distance apart 8" Number and pitch of stays in each 2 @ 9¹/₂"
Working pressure by rules 290 lb Steam dome: description of joint to shell 1¹/₂" of strength of joint
Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes
Working pressure of shell by rules Crown plates: Thickness How stayed

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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 ✓

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

SPARE GEAR. State the articles supplied:— 1 Screw shaft, 1 set of Coupling bolts + nuts, 2 Propeller blades, 1 set of Sea pump valves, 1 set of large pump valves, 2 sets of valves for lubricating oil pump, 1 Lubricating Pump bucket + rod, 1 set of escape valve for each engine fitted, 100 condenser tubes, 50 Oil cooler tubes, 2 Feed check valves, 5 Safety valve springs, Assorted bolts, nuts, studs + sheet + rod steel, 6 Studs + nuts for Turbine bearings, 4 Studs + nuts for Gearring bearing, 24 Casings, Bolts, Studs + nuts, 2 Bearing bushes for main gear wheel, 6 Bearing bushes for Pinion shaft, 3 Bearing bushes for Motor bearings, Packing rings for glands, 9 Thrust pads for main Thrust block, 24 Pads for Turbine Adjusting Blocks, 24 Adjusting block liners, 2 Thermometers for oil system, etc.

The foregoing is a correct description.

FOR VICKERS LIMITED,

J. Callander

Manufacturer.

DIRECTOR

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

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Casings 19 - 1 - 25 Rotores 19 - 1 - 25 Blading 19 - 1 - 25. Gearing 20 - 3 - 25.

Rotor shafts 8 - 1 - 25 Thrust shafts 8 - 1 - 25. Tunnel shafts 8 - 1 - 25. Screw shafts 8 - 7 - 25. Propellers 3 - 2 - 25.

Stern tube Y⁴ 9 - 20 - 11 - 24. Steam pipes tested 24 - 2 - 25 to 6 - 7 - 25. Engine and boiler seatings 20 - 2 - 24. Engines holding down bolts 2 - 6 - 25.

Completion of pumping arrangements 5 - 8 - 25

Boilers sized 2 - 6 - 25

Engines tried under steam 10 - 5 - 25

Main boiler safety valves adjusted 14 - 7 - 25

Thickness of adjusting washers M 4 - P 7 - 4 C 4 - 7 - 3 V 2 - 4

Material and tensile strength of Rotor shaft

Barlow Steel

36 tons

M 4 - P 7 - 4 C 4 - 7 - 3 V 2 - 4

Identification Mark on Do. J.H. J.P.

Material and tensile strength of Pinion shaft

Hickel Steel

10 / 44 tons

Identification Mark on Do.

Material of Wheel shaft

Cast Iron

Identification Mark on Do. 390-118

Material of Tunnel shafts

Cast Iron

Identification Marks on Do. 390-118

Material of Steam Pipes

Solid drawn Steel

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 a duplicate of a previous case? Indistinctly If so, state name of vessel Y. I. I. Seytua

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery and boilers of this vessel have been built under special survey. The materials and workmanship are good. They

have been efficiently fitted in the vessel and proved satisfactory under working conditions

In my opinion the vessel is eligible to have the notation of ✓ 1/10 8.25 made in the Register Book.

(The Surveyor is requested not to write on or below the space for Committee's Minutes)

The amount of Entry Fee

Special

Donkey Boiler Fee

Travelling Expenses (if any)

When applied for,

13th Aug. 1925

When received,

26.8.25

Mr. Clegg
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 21 AUG 1925

Assigned

+ £. 6 : 8.25 C.L. F.D.

Lined for oil fuel 8.25

F.P. above 180° F.

LR-FAF-TB10-125

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