

## REPORT ON MACHINERY.

No. 2144  
19 AUG 1925

Received at London Office

Date of writing Report 10<sup>th</sup> August 1925 When handed in at Local Office 12<sup>th</sup> August 1925 Port of Barrow-in-Furness  
 No. in Survey held at Barrow Date, First Survey 2<sup>nd</sup> August 1920 Last Survey 12<sup>th</sup> August 1925  
 Reg. Book. 15911 on the Twin screw steamer "Carinthia" (Builder's No. 10586) (Number of Visits 192) Gross 20288  
 Tons Net 12088  
 Master By whom built Barrow By whom built Bickers Ltd. When built 1925  
 Engines made at Barrow By whom made Bickers Ltd. when made 1925  
 Boilers made at Barrow By whom made Bickers Ltd. when made 1925  
 Registered Horse Power 2438 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

URBINE ENGINES, &c.—Description of Engines Parsons geared Turbines No. of Turbines 4  
 Diameter of Rotor Shaft Journals, H.P. 6 1/2" L.P. 10 1/2" Diameter of Pinion Shaft H.P. 4 3/4" L.P. 5 1/2"  
 Diameter of Journals 2 1/2" Distance between Centres of Bearings 2 1/2" Diameter of Pitch Circle 2 1/2"  
 Diameter of Wheel Shaft 2 1/2" Distance between Centres of Bearings 2 1/2" Diameter of Pitch Circle of Wheel 2 1/2"  
 Width of Face 2 1/2" Diameter of Thrust Shaft under Collars 19 1/8" Diameter of Tunnel Shaft 18"  
 No. of Screw Shafts Two Diameter of same 18 1/8" Diameter of Propeller 20'-0" Pitch of Propeller 20'-0"  
 No. of Blades 4 State whether Moveable Yes Total Surface 125 sq ft Diameter of Rotor Drum, H.P. 19 1/2" L.P. 3'-1 1/2" Astern 3'-10"  
 Thickness at Bottom of Groove, H.P. 1 1/2" L.P. 1 1/2" Astern 1 1/2" Revs. per Minute at Full Power, Turbine 1788 Propeller 92

## 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.
1ST EXPANSION	27/32	21 3/4	9	3 1/4	3'-4 1/2"	11	1'	4'-0"	11
2ND	1 1/4	22	9	4 1/4	3'-9 1/2"	11	1 1/2"	4'-1 1/4"	3
3RD	1 3/4	23	7	5 1/2	4'-0"	11	2 3/4"	4'-4 1/4"	1
4TH	2 5/8	24 3/4	7	3 3/4	5'-1 1/2"	2	4 1/4"	4'-6 1/2"	1
5TH	3 3/4	25	6	4 3/4	5'-3 1/2"	2	5 1/2"	4'-8 1/4"	1
6TH	3 3/4	25	6	5 1/2	5'-5"	1	6"	4'-10"	1
7TH	3 3/4	25	6	6 1/2	5'-7"	1	6 1/2"	4'-10"	1
8TH	3 3/4	25	6	7 1/2	5'-9 1/2"	1	6 1/2"	4'-10"	1

No. and size of Feed pumps One Main Turbo. 150000 lbs. per hour. & Two Main Recip. 45000 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 Bilge Ballast. 200 tons per hour.  
 No. and size of Bilge suction in Engine Room 5 of 3 1/2" and 2 of 2" and 1 of 3" hose connection. 5 of 3 1/2" in tunnels. And 1 of 3 1/2" in Refrigerating Engine Room.  
 No. of Bilge Injections Two sizes 1 1/2" & 2" Connected to condenser, or to circulating pump Yes. Is a separate Donkey Suction fitted in Engine Room & size 1 1/2" of 6 1/2"  
 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 By a plate.  
 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 or Bridge.

BOILERS, &c.—(Letter for record R. T.) Manufacturers of Steel W. Beardmore & Co.  
 Total Heating Surface of Boilers 29164 sq. ft. Forced Draft fitted Yes No. and Description of Boilers 3 A.E. & 3 S.E. Cyl. built 1925  
 Working Pressure 220 lbs. Tested by hydraulic pressure to 385 lbs. Date of test 20-2-25. 21-2-25. 22-2-25. No. of Certificate 390. 391. 392.  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 50 sq. ft. No. and Description of Safety Valves to each boiler One of 1 1/2" & one of 1" & one of 3/4" 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" Material of shell plates Steel  
 Thickness 1 1/2" Range of tensile strength 30/34 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Full & half laps  
 long. seams Y.R. A.B.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/2" box of plates or width of butt straps 23 3/4"  
 Per centages of strength of longitudinal joint 88.9 Working pressure of shell by rules 223 lbs. Size of shell 21' x 14'  
 Size of compensating ring 10' x 1 1/2" x 1 1/2" flanged No. and Description of Furnaces in each Boiler 3 in S.E. in S.E. in S.E. in S.E. Outside diameter 45 1/2"  
 Length of plain part 10' Thickness of plates 1 1/2" Description of longitudinal joint Weld No. of strengthening rings 1  
 Working pressure of furnace by the rules 221 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 3/32" Top 3/32" Bottom 1/2"  
 Pitch of stays to ditto: Sides 9 1/2" x 8" Back 10 x 4 1/2" Top 9 1/2" x 8" If stays are fitted with nuts or riveted heads Yes Working pressure by rules 224 lbs.  
 Material of stays Steel Diameter at smallest part 1 1/4" Area supported by each stay 49 sq. ft. Working pressure by rules 230 lbs. End plates in steam space Steel  
 Material Steel Thickness 1 1/4" Pitch of stays 14 1/2" x 18" How are stays secured Double nut Working pressure by rules 230 lbs. Material of stays Steel  
 Diameter at smallest part 3" Area supported by each stay 31 x 25 sq. ft. Working pressure by rules 248 lbs. Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 2 1/2" Greatest pitch of stays 15' x 4' Working pressure of plate by rules 244 lbs.  
 Diameter of tubes 2 1/4" Pitch of tubes 4" x 4" Material of tube plates Steel Thickness: Front 1" Back 1 1/2" Mean pitch of stays 10"  
 Pitch across wide water spaces 14 1/4" Working pressures by rules 226 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9' x 1 1/2" Length as per rule 20.344 Distance apart 8" Number and pitch of stays in each 2 @ 9 1/2"  
 Working pressure by rules 290 lbs. Steam dome: description of joint to shell Yes 1/10 of strength of joint Yes  
 Thickness of shell plates 1" Material Steel Description of longitudinal joint Weld Diameter of rivet holes 1"  
 Working pressure of shell by rules 290 lbs. Crown plates: Thickness 1" How stayed By a plate.



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

*The foregoing is a correct description.*

FOR VICKERS LIMITED

Manufacturer

DIRECTOR

Is the approved plan of main boiler forwarded herewith Yes