

Rpt. 5a.

REPORT ON BOILERS.

No. 2157

Received at London Office

-1 JAN 1926

Date of writing Report 23rd Decr. 1925 When handed in at Local Office 23rd Decr. 1925 Port of Barrow in FurnessNo. in Survey held at Barrow Date, First Survey 11th October 1924 Last Survey 21st December 1925on the Twin Screw Steamer "Otranto" (Number of Visits 47) Gross 20032 Tons Net 12031

Master ✓ Built at Barrow By whom built Lickers Ltd Yard No. 619 When built 1925
 Engines made at Barrow By whom made Lickers Ltd Engine No. 619 When made 1925
 Boilers made at Barrow By whom made Barrow Boiler No. 619 When made 1925
 Nominal Horse Power 4000 Owners Orient Steam Navigation Co Ltd Port belonging to Barrow

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wm Beardmore & Co & David Colville & Sons Ltd (Letter for Record (3) ✓)
 Total Heating Surface of Boilers (4 boilers) 12640 sq ft Is forced draught fitted Yes Coal or Oil fired Oil
 No. and Description of Boilers 4 Single ended cylindrical multitubular Working Pressure 215 lb
 Tested by hydraulic pressure to 343 lb Date of test 25-11-25 No. of Certificate 392, 394, 399 Can each boiler be worked separately Yes
 Area of Firegrate in each Boiler 192 sq ft No. and Description of safety valves to each boiler Two dual spring loaded High lift
 Area of each set of valves per boiler per Rule 13.72 (High lift) Pressure to which they are adjusted 220 lb Are they fitted with easing gear Yes
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓
 Smallest distance between boilers over pipes and bunkers 18" Is oil fuel carried in the double bottom under boilers Yes
 Smallest distance between shell of boiler and tank top plating 2 1/2" Is the bottom of the boiler insulated Yes
 Largest internal dia. of boilers 16'-6" Length 11'-3" Shell plates: Material Steel Tensile strength 80 to 34 ton
 Thickness 1 1/2" Are the shell plates welded or flanged No Description of riveting: circ. seams end Dr. lap
 long. seams VR double butt straps Diameter of rivet holes in circ. seams 1 9/16" Pitch of rivets 4.074"
 Percentage of strength of circ. end seams plate 60 Percentage of strength of circ. intermediate seam plate
 rivets 44 Working pressure of shell by Rules 215 lb
 Percentage of strength of longitudinal joint plate 84.574 rivets 85.1 combined 84.4
 Thickness of butt straps outer 1 9/32" No. and Description of Furnaces in each Boiler 4 cf. 4 Morrison
 inner 1 7/32" Material Steel Tensile strength 26 to 30 ton Smallest outside diameter 41 3/4"
 Length of plain part top Thickness of plates crown 7/8" Description of longitudinal joint Weld
 bottom ✓ Working pressure of furnace by Rules 218 lb
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ End plates in steam space: Material Steel Tensile strength 26 to 30 ton Thickness 1 9/32" Pitch of stays 16 3/4" x 16 1/2"
 How are stays secured Double butts Working pressure by Rules 225 lb
 Tube plates: Material front Steel Tensile strength 26 to 30 ton Thickness 1"
 back Steel 26 to 30 ton 1 1/16"
 Mean pitch of stay tubes in nests 9.0625 Pitch across wide water spaces 10 1/2" Working pressure front 258 lb
 back 312 lb
 Girders to combustion chamber tops: Material Steel Tensile strength 28 to 32 ton Depth and thickness of girder
 at centre 8" x 1 1/2" Length as per Rule 29 27/32" Distance apart 8" No. and pitch of stays
 in each 2 @ 10" Working pressure by Rules 240 lb Combustion chamber plates: Material Steel
 Tensile strength 26 to 30 ton Thickness: Sides 2 3/32" Back 2 3/32" Top 2 3/32" Bottom 1 1/8"
 Pitch of stays to ditto: Sides 8" x 10" Back 10 3/8" x 4 3/4" Top 10" x 8" Are stays fitted with nuts or riveted over nuts
 Working pressure by Rules 216 lb Front plate at bottom: Material Steel Tensile strength 26 to 30 ton
 Thickness 1" Lower back plate: Material Steel Tensile strength 26 to 30 ton Thickness 1 1/16"
 Pitch of stays at wide water space 14 1/2" x 4 3/4" Are stays fitted with nuts or riveted over nuts
 Working Pressure 240 lb Main stays: Material Steel Tensile strength 28 to 32 ton
 Diameter At body of stay 2 3/4" No. of threads per inch 6 Area supported by each stay 246.3 sq in
 Over threads ✓ Working pressure by Rules 237 lb Screw stays: Material Steel Tensile strength 26 to 30 ton
 Diameter At turned off part 1 3/4" No. of threads per inch 9 Area supported by each stay 80.5 sq in
 Over threads ✓

Working pressure by Rules 224 lb Are the stays drilled at the outer ends Yes Margin stays: Diameter 2" At turned off part, ✓
 No. of threads per inch 9 Area supported by each stay 96.5 Working pressure by Rules 257 lb
 Tubes: Material Iron External diameter 2 1/2 Thickness 3/16 No. of threads per inch 9
 Pitch of tubes 3 7/8" x 3 7/8" Working pressure by Rules 230 lb Manhole compensation: Size of opening in
 shell plate 21 1/2" x 14 1/2" Section of compensating ring 3 1/4" x 40 1/4" x 1 1/2" No. of rivets and diameter of rivet holes 36 - 1 9/16"
 Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole flanged 4 1/4" Steam Dome: Material ✓
 Tensile strength Thickness of shell Description of longitudinal joint
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint Plate
 Internal diameter Working pressure by Rules Thickness of crown No. and diameter of
 stays Inner radius of crown Working pressure by Rules
 How connected to shell Size of doubling plate under dome Diameter of rivet holes and pitch
 of rivets in outer row in dome connection to shell

Type of Superheater

Number of elements Material of tubes Iron Manufacturers of Steel castings Tubes
 Material of headers Tensile strength Thickness Can the superheater be shut off and
 the boiler be worked separately Is a safety valve fitted to every part of the superheater which can be shut off from the boiler
 Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per
 Rules Pressure to which the safety valves are adjusted Hydraulic test pressure:
 tubes, castings and after assembly in place Are drain cocks or valves fitted
 to free the superheater from water where necessary

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with ✓

The foregoing is a correct description,

FOR VICKERS LIMITED,

Manufacturer.

Dates of Survey 1924 Oct 11-28 Nov 5-7 1925 Jan 2-17 1925 - June 11-28 Feb 13 Mar 3-10 11-17 25 Apr 2-9 17
 During progress of work in shops - July 2-4
 while building June 17-20 July 11-17 10-29 Aug 12 Sept 9 Oct 12 Total No. of visits 147
 Are the approved plans of boiler and superheater forwarded herewith ✓
 (If not state date of approval.)

GENERAL REMARKS

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

The boilers of this vessel are practically a duplicate of those fitted in the S.S. "Orama" (Barrow Rpt. 102091). The modification being in the diameter and arrangement of tubes due to the Superheaters being eliminated. These boilers have been constructed in accordance with the approved plans and the Rules. The workmanship and materials are good. (Please see machinery report)

Survey Fee ... £

Travelling Expenses (if any) £

When applied for, 23rd Dec 1925

When received, 192

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 5 JAN 1926

Assigned



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