

pt. 5a.

REPORT ON BOILERS.

No. 2157

Received at London Office

-1 JAN 1926

Date of writing Report 23rd Dec. 1925 When handed in at Local Office 30th Dec. 1925 Port of Barrow-in-Furness.

No. in Survey held at Barrow. Date, First Survey 11th October 1924 Last Survey 21st Dec 1925

on the Twin screw steamer "Otranto" (Number of Visits) Tons { Gross 20032 Net 12031

Built at Barrow. By whom built Bickers L^d. Yard No. 619 When built 1925

Engines made at Barrow. By whom made Bickers L^d. Engine No. 619 When made 1925

Boilers made at do. By whom made do. Boiler No. 619 When made 1925

Indicated Horse Power 4005. Owners Orient Steam Navigation Co. L^d. Port belonging to Barrow.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wm Beardmore & Co.; David Colville & Son L^d. (Letter for Record (S))

Total Heating Surface of Boilers (6 Boilers) 34914 Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers 6 Double Ended Cylindrical Multitubular Working Pressure 215 lb

Tested by hydraulic pressure to 273 lb Date of test 15-5-25, 22-5-25, 2-6-25, 20-6-25, 2-7-25, 4-7-25 No. of Certificate 328 400 401 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 384 sq ft No. and Description of safety valves to each boiler Two direct spring loaded, high lift.

Area of each set of valves per boiler per Rule 24.4 (High lift) as fitted 28.244 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 Yes

Smallest distance between boilers on uptakes and bunkers on roadwork 18" Is oil fuel carried in the double bottom under boilers No

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 22'-0" Shell plates: Material Steel Tensile strength 30 to 34 tons

Thickness 1 1/2" Are the shell plates welded or flanged No Description of riveting: circ. seams { end DR lap inter. VR lap }
 long. seams 4.074 & 4.75

Angle of seams 1/2" Double butt straps Diameter of rivet holes in { circ. seams 1 7/16 & 1 19/32 } Pitch of rivets { 10 1/2" }
 { long. seams 1 7/16 }

Percentage of strength of circ. end seams { plate 60 rivets 49 } Percentage of strength of circ. intermediate seam { plate 66.25 rivets 64.13 }

Percentage of strength of longitudinal joint { plate 84.574 rivets 85.1 combined 84.4 } Working pressure of shell by Rules 215 lb.

Thickness of butt straps { outer 1 5/32 inner 1 9/32 } No. and Description of Furnaces in each Boiler 8 Morison

Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 41 3/4"

Length of plain part { top bottom } Thickness of plates { crown 5/8" bottom } Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 218 lb

End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 1 5/32 Pitch of stays 16 3/4 x 16 1/2

How are stays secured Double nuts Working pressure by Rules 225 lb.

Tube plates: Material { front Steel back Steel } Tensile strength { 26 to 30 tons } Thickness { 1 5/16 }

Lean pitch of stay tubes in nests 9.065 Pitch across wide water spaces 15 1/2" Working pressure { front 258 lb back 215 lb }

Girders to combustion chamber tops: Material Steel Tensile strength 28 to 32 tons 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

at each 2 @ 10" Working pressure by Rules 240 lb Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons Thickness: Sides 23/32 Back 23/32 Top 23/32 Bottom 1/8"

Pitch of stays to ditto: Sides 8 5/8" x 10" Back 10 3/8" x 1 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 tons

Thickness 1" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 1"

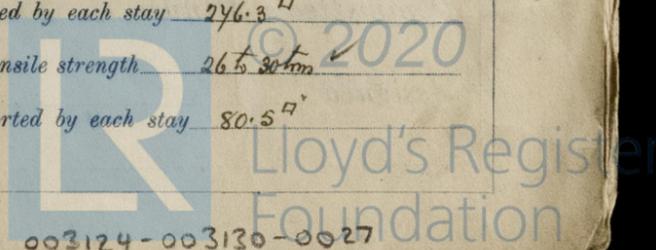
Pitch of stays at wide water space 14 1/2" dia of circle Are stays fitted with nuts or riveted over Nuts

Working Pressure 219 lb Main stays: Material Steel Tensile strength 28 to 32 tons

Diameter { At body of stay 2 3/4" or Over threads } No. of threads per inch 6 Area supported by each stay 246.3 sq in

Working pressure by Rules 237 lb. Screw stays: Material Steel Tensile strength 26 to 30 tons

Diameter { At turned off part 1 3/4" or Over threads } No. of threads per inch 9 Area supported by each stay 80.5 sq in



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Working pressure by Rules 225 lb Are the stays drilled at the outer ends No Margin stays: Diameter At turned off part, or Over threads

No. of threads per inch ✓ Area supported by each stay ✓ Working pressure by Rules ✓

Tubes: Material Iron External diameter Plain 2 1/2 ✓ Stay 2 1/2 ✓ Thickness 9 x 65 ✓ 1/4 5/16 & 3/8 ✓ No. of threads per inch 9

Pitch of tubes 3 5/8 x 3 5/8 ✓ Working pressure by Rules 230 lb Manhole compensation: Size of opening in shell plate 2 1/2 x 1 1/2 ✓ Section of compensating ring 32 1/2 x 40 1/2 x 1 1/2 flanged ✓ No. of rivets and diameter of rivet holes 36 - 1 3/16

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 Rivets

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 _____ Manufacturers of Tubes Steel castings

Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____

Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately _____

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, J. Scotland, Manufacturer.

Dates of Survey while building	During progress of work in shops - 1924 - Oct 11, 23, Nov 5, 7, 19, 25, Dec 3, 17, 1925 Jan 9, 15, 23 Feb 13, Mar 3, 10, 11, 17, 25, Apr 2, 9, 14, 20, 24, 28, May 4, 6, 8, 15	Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)	DIRECTOR
	During erection on board vessel - June 11, 26, July 1, 7, 10, 29, Aug 12, Sept 9, 24, Oct 13, Nov 25, Dec 21	Total No. of visits	47

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 112091). The modifications 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	£	When applied for,	192
Travelling Expenses (if any)	£	When received,	192

TUES. 5 JAN 1926

Wm Cowie Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Assigned

