

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 Turbine screw steamer "Otranto" (Number of Visits) Gross 20032 Tons Net 12031

Built at Barrow. By whom built Bickers Ld. Yard No. 619 When built 1925

Engines made at Barrow. By whom made Bickers Ld. Engine No. 619 When made 1925

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

Nominal Horse Power 4005 Owners Orient Steam Navigation Co. Ld. Port belonging to Barrow.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wm Beardmore & Co. David Colville & Son Ld. (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 243 lb Date of test 15-5-25, 24-5-25, 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 ft² No. and Description of safety valves to each boiler Four direct spring loaded, high lift. ✓

Area of each set of valves per boiler per Rule 24.4 ft² (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 on uptakes and bunkers 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 4R lap ✓, inter. 4R lap ✓}

Long. seams 2 1/2" Double butt straps ✓ Diameter of rivet holes in {circ. seams 1 7/16 & 1 19/32 ✓, long. seams 1 7/16 ✓} Pitch of rivets {4.014 & 4.15 ✓, 10 1/2" ✓}

Percentage of strength of circ. end seams {plate 60, rivets 49} Percentage of strength of circ. intermediate seam {plate 66.25, rivets 64.12}

Percentage of strength of longitudinal joint {plate 84.54, 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 C.F. 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 5/8" ✓} 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 hubs ✓ Working pressure by Rules 225 lb ✓

Tube plates: Material {front Steel ✓, back Steel ✓} Tensile strength {26 to 30 tons ✓, 26 to 30 tons ✓} Thickness {1" ✓, 1 7/16" ✓}

Lean pitch of stay tubes in nests 7.065" Pitch across wide water spaces 13 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 7/8" ✓

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 hubs ✓

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 hubs ✓

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

Diameter {At body of stay, or Over threads} 2 3/4" ✓ No. of threads per inch 6 ✓ Area supported by each stay 246.3 in² ✓

Working pressure by Rules 234 lb ✓ Screw stays: Material Steel ✓ Tensile strength 26 to 30 tons ✓

Diameter {At turned off part, or Over threads} 1 3/4" ✓ No. of threads per inch 9 ✓ Area supported by each stay 80.5 in² ✓

Working pressure by Rules 225 lb Are the stays drilled at the outer ends Yes 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 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 ✓

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 ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ✓

Rules ✓ Pressure to which the safety valves are adjusted ✓ Working pressure as per 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 1924. - Oct 11. 23. Nov 5. 7. 19. 25. Dec 2. 17. 1925 Jan 9. 15. 23
During progress of work in shops - Feb 13. Mar 3. 10. 11. 17. 25. Apr 2. 9. 14. 20. 24. 28. May 4. 6. 8. 15
while building June 1. 14. 20. July 1. 7. 10. 29. Aug 12. Sept 9. 24. Oct 13. Nov 25. Dec 31.
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) ✓
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 42091). 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 £ 192 When applied for, 192
Travelling Expenses (if any) £ 192 When received, 192

TUES. 5 JAN 1926

Committee's Minute

Assigned

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



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Foundation