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REPORT ON BOILERS.

No. 9409

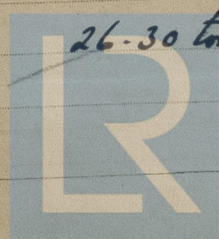
Received at London Office

17 FEB 1944

Date of writing Report 11th Feb. 1944 When handed in at Local Office 11th Feb. 1944 Port of Sunder
 No. in Survey held at Sunder Date, First Survey 25th Feb. 43. Last Survey 7th Dec. 1943.
 Reg. Book. S/S "Empire Favour" (Number of Visits 41) Tons { Gross _____ Net _____
 on the _____
 Built at Sunder By whom built Messrs Caledon S. B. & F. Co. Ltd Yard No. 611 When built 1945
 Engines made at Glasgow By whom made Duncan Stewart & Co. Ltd Engine No. 217 When made 1945
 Boilers made at Sunder By whom made Caledon S. B. & F. Co. Ltd Boiler No. B.S. 100 When made 1943
 Nominal Horse Power 485 510 Owners The Admiralty Port belonging to Sunder

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd (Letter for Record S.)
 Total Heating Surface of Boilers 7248 sq. ft. Is forced draught fitted Yes Coal or Oil fired Coal
 No. and Description of Boilers 3 Single ended multitubular Working Pressure 220 lbs.
 Tested by hydraulic pressure to 380 lbs. Date of test 7-12-43 No. of Certificate 1052 Can each boiler be worked separately Yes
 Area of Firegrate in each Boiler 54.8 sq. ft. No. and Description of safety valves to each boiler 1-2 1/2" Improved High Lift Double Spring
 Area of each set of valves per boiler { per Rule 6.45 sq. ft. as fitted 7.95 sq. ft. Pressure to which they are adjusted 220 lbs. 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 or uptakes and bunkers or woodwork well clear Is oil fuel carried in the double bottom under boilers No
 Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated YES.
 Largest internal dia. of boilers 15'-0 1/16" Length 11'-6" Shell plates: Material Steel Tensile strength 29.32 tons
 Thickness 1 1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end S. R. Lap inter. ✓
 long. seams T. R. D. B. S. Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 1/2" Pitch of rivets { 4.07" 10 3/8"
 Percentage of strength of circ. end seams { plate 63.1 % rivets 46.7 % Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓
 Percentage of strength of longitudinal joint { plate 85.5 % rivets 86.2 % combined 88.2 %
 Thickness of butt straps { outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler 3. Slighton Section
 Material Steel Tensile strength 26.30 tons Smallest outside diameter 45 1/4"
 Length of plain part { top 8 3/4" bottom 8 3/4" Thickness of plates { crown 1 1/16" bottom 1 1/16" Description of longitudinal joint Welded.
 Dimensions of stiffening rings on furnace or c.c. bottom none.
 End plates in steam space: Material Steel Tensile strength 26.30 tons Thickness 1 1/32" Pitch of stays 21" x 20"
 How are stays secured Double nuts.
 Tube plates: Material { front Steel back " Tensile strength { 26.30 tons Thickness { 15/16" 25/32"
 Mean pitch of stay tubes in nests 9 5/8" Pitch across wide water spaces 14"
 Girders to combustion chamber tops: Material Steel Tensile strength 28.32 tons Depth and thickness of girder
 at centre 10 1/2" 2e 1/16" Length as per Rule 33.5" Distance apart 9 1/4" No. and pitch of stays
 in each 3 @ 8" Combustion chamber plates: Material Steel
 Tensile strength 26.30 tons Thickness: Sides 2 1/16" Back 1 1/16" Top 1 1/16" Bottom 13/16"
 Pitch of stays to ditto: Sides 9 1/4" x 8" Back 9 1/4" x 8" Top 9 1/4" x 8" Are stays fitted with nuts or riveted over Yes
 Front plate at bottom: Material Steel Tensile strength 26.30 tons
 Thickness 15/16" Lower back plate: Material Steel Tensile strength 26.30 tons Thickness 27/32"
 Pitch of stays at wide water space 14" x 8" Are stays fitted with nuts or riveted over Yes
 Main stays: Material Steel Tensile strength 28.32 tons
 Diameter { At body of stay, 3 1/4" No. of threads per inch 6
 { Over threads 3 5/8"
 Screw stays: Material Steel Tensile strength 26.30 tons
 Diameter { At turned off part, 1 3/4" No. of threads per inch 9
 { Over threads 1 3/4"



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Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, or Over threads 1 7/8"
No. of threads per inch 9.
Tubes: Material Steel External diameter { Plain 3" Stay 3" Thickness { 8.W.G. 3/8" x 5/16" No. of threads per inch 9
Pitch of tubes 4 1/4 x 4 1/8" Manhole compensation: Size of opening in shell plate manhole in end plate. Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material none
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 ✓ Thickness of crown ✓ No. and diameter of stays ✓ Inner radius of crown ✓
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 N.E. Marine smoke tube type. Manufacturers of { Tubes ✓ Steel forgings ✓ Steel castings ✓
Number of elements 177. Material of tubes steel Internal diameter and thickness of tubes 1 5/8" - 2 1/2" 3/4"
Material of headers Ingot Steel Tensile strength ✓ Thickness 1 1/8" Can the superheater be shut off and the boiler be worked separately yes. Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes.
Area of each safety valve 3.14 sq inches Are the safety valves fitted with easing gear yes.
Pressure to which the safety valves are adjusted ✓ Hydraulic test pressure: tubes ✓ forgings and castings ✓ and after assembly in place 660 lbs. Are drain cocks or valves fitted to free the superheater from water where necessary yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

AND ON BEHALF OF
THE CALEDON SHIPBUILDING & ENGINEERING CO. LTD.
The foregoing is a correct description,

Henry Main

Manufacturer.

Dates of Survey { During progress of work in shops - - - Feb. 1943, 2-5, Mar. 18, 23, 26, April 6, 21, May 11, 25, 28
while building { During erection on board vessel - - - June 1, 3, 8, 10, 18, 22, 25, July 6, 20, 27, Aug. 3, 10, 15, 31, Sept. 7, 14, 24, 29, Oct. 1, 12, 19, 26, Nov. 5, 9, 23, 30, Dec. 7, Jan. 1944, 28, 31
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes
Total No. of visits 41

Is this Boiler a duplicate of a previous case yes. If so, state Vessel's name and Report No. S/S. Empire Archer. Dem. rpt. No. 9.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under Special Survey in accordance with the Rules and approved plan. The materials and workmanship are good. These boilers are to the order of The Admiralty

The requirements of the Specification have been satisfactorily carried out.

These boilers have been properly fitted on board, Safety valves afterwards adjusted under steam to the working pressure and found satisfactory

Survey Fee ... £ 36 : 13 : 0. When applied for, 11-2-1944
Travelling Expenses (if any) £ 9 : 3 : 0 When received, 19
Specifics for Requirements
£ 45 : 16 : 0

G. E. Murdoch

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW

15 FEB 1944

Assigned Transmittal to Wokingham

// NSI for Glasgow
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