

REPORT ON BOILERS.

Mab. 17621

No. 14532

11 APR 1944

25 OCT 1943

Received at London Office

Date of writing Report 17th Oct 1943 When handed in at Local Office 20th Oct 1943 Port of Middlesbrough.

No. in Survey held at 20 Reg. Book. Stockton-on-Tees. Date, First Survey 14th April Last Survey 14th Oct 1943.

on the S/S "EMPIRE LAW" (Number of Visits 15. Tons {Gross 8128 Net 4597

Built at Haslehol Hill-on-Tees. By whom built Furness Shipbuilding Co Ltd. Yard No. 357. When built 1944-5

Engines made at West Hartlepool. By whom made Richardson & Vintgarth. Engine No. 2741 When made 1944

Boilers made at Stockton-on-Tees. By whom made Stockton C. Eng. & Riley Barlow Ltd. Boiler No. 6873. When made 1943.

Nominal Horse Power Owners Ministry of War Transport. Port belonging to Middlesbrough.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Co. of Scotland Ltd. (Letter for Record) S.

Total Heating Surface of Boilers 2083. Is forced draught fitted Coal or Oil fired

No. and Description of Boilers 1 S.E. multitubular marine. Working Pressure 180 lbs/sq in

Tested by hydraulic pressure to 320 lbs/sq in Date of test 14/10/43 No. of Certificate 7094 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 1-2 1/2" Double Spring High Lift.

Area of each set of valves per boiler {per Rule 6.67 as fitted 7.95 Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No.

Smallest distance between boilers or uptakes and bunkers or woodwork 3'-6" Is oil fuel carried in the double bottom under boilers Yes.

Smallest distance between shell of boiler and tank top plating 18" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 13'-3 1/4" Length 11'-6" Shell plates: Material Steel Tensile strength 29-33

Thickness 1 3/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end DR. inter. 3.59"

long. seams TR. D.B.S. Diameter of rivet holes in {circ. seams 1 3/16" long. seams 1 3/16" Pitch of rivets {8 3/16"

Percentage of strength of circ. end seams {plate 66.9% rivets 44.7% Percentage of strength of circ. intermediate seam {plate 85.5% rivets 91.85% combined 87.36%

Percentage of strength of longitudinal joint {plate 85.5% rivets 91.85% combined 87.36%

Thickness of butt straps {outer 7/8" inner 1" No. and Description of Furnaces in each Boiler 3 Deepkin Corrugated.

Material Steel Tensile strength 26-30 Smallest outside diameter 3'-1 1/4"

Length of plain part {top / bottom Thickness of plates {crown 1/2" bottom 1/2" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom

End plates in steam space: Material Steel Tensile strength 26-30 Thickness 1 5/32" Pitch of stays 19" x 17 1/2"

How are stays secured D. nuts - washers. Clear holes thro' end plates & sealing weld on outside.

Tube plates: Material {front Steel. Tensile strength {26-30 Thickness {13/16" 1 1/16"

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 13 1/4"

Girders to combustion chamber tops: Material Steel. Tensile strength 28-32 Depth and thickness of girder

at centre 8 3/8" - 20 13/16" Length as per Rule 2'-8" Distance apart 10" No. and pitch of stays

in each 2-10" Combustion chamber plates: Material Steel.

Tensile strength 26-30 Thickness: Sides 21/32" Back 1 1/16" Top 23/32" Bottom 21/32"

Pitch of stays to ditto: Sides 10" x 6" Back 10 1/2" x 7 1/2" Top 10" x 10" Are stays fitted with nuts or riveted over {MARGIN STAYS - NUTS EACH SIDE OTHER - NOTTED IN CO'S

Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 13/16" Lower back plate: Material Steel Tensile strength 26-30 Thickness 27/32"

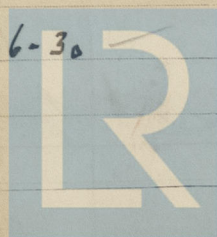
Pitch of stays at wide water space 15" Are stays fitted with nuts or riveted over No.

Main stays: Material Steel Tensile strength 28-32

Diameter {At body of stay, or Over threads 2 7/8" No. of threads per inch 6.

Screw stays: Material Steel Tensile strength 26-30

Diameter {At turned off part, or Over threads 1 3/4" No. of threads per inch 9.



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Are the stays drilled at the outer ends ho. Margin stays: Diameter { At turned off part, or Over threads 7/8"
No. of threads per inch 9.
Tubes: Material Seamless Steel External diameter { Plain 2 1/2" Stay 2 1/2" Thickness { 9 W.G. No. of threads per inch 9.
Pitch of tubes 3 3/4" x 3 3/4" Manhole compensation: Size of opening in shell plate 20 1/2" x 16 1/2" Section of compensating ring 6 1/4" x 1 1/8" No. of rivets and diameter of rivet holes 36 - 1 3/4"
Outer row rivet pitch at ends 8 3/16" 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 _____ Manufacturers of { Tubes Steel forgings 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 _____ 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 _____
Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: tubes _____ forgings and 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 22 inclusive for boilers been complied with For and on behalf of ROBERTSON & RILEY BOILERS LTD.
The foregoing is a correct description, _____ Manufacturer.

Dates of Survey { During progress of work in shops - - - April 14, 30, May 12, June 4, 28, July 19, 26, 30 Aug. 13, Sep. 3, 24, Oct. 6, 11, 13, 14. Are the approved plans of boiler and superheater forwarded herewith 23/3/43
while building { During erection on board vessel - - - Total No. of visits 15
(If not state date of approval.)

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. Indra's Repat. No. 17498.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under special survey & in accordance with the Rule Requirements & approved plan.

The materials & workmanship are good & on completion the boiler was hydraulically tested to 320 lbs p.s.i. & found satisfactory.

This boiler is being forwarded to the Furness Shipbuilding Co. Ltd. - Haverthwaite Hill for Messrs Richardson Welfarth Contract No. 2741.

This boiler has been clearly fitted on board & examined under working conditions & found satisfactory.

The S.V. is adjusted under steam to 185 lbs p.s.i. on completion.

Survey Fee ... £ 13 : 18 : -
SUPERVISION.
Travelling Expenses (if any) £ 3 : 9 : 6

When applied for, 12/10/43.
When received, 19

C. Norman Stuart
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THURS 27 APR 1944

Assigned

Lee J. Machy rpl.



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