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25 MAY 1950
IN D.O.

SUNDERLAND RPT. NO. 35399

REPORT ON BOILERS.

No. 19057.

Received at London Office 24 MAY 1950

Date of writing Report 16th May. 19.50. When handed in at Local Office 22nd May. 19.50. Port of MIDDLESBROUGH.

No. in Reg. Book. Survey held at Stockton-on-Tees. Date, First Survey 24th March. Last Survey 12th May. 1950.

(Number of Visits 7.)

on the BRITISH DEFENDER Tons Gross 6138 Net 3335

Master Built at Sunderland By whom built Wm Doxford & Sons Ltd Yard No. 449 When built 1950

Engines made at Sunderland. By whom made Wm. Doxford & Sons Ltd.. Engine No. 449 When made 1950

Boilers made at Stockton-on-Tees. By whom made Stockton Chemical Engineers & Riley Boilers Ltd. Boiler No. 7202. When made

Nominal Horse Power 516. Owners British Tanker Co Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 2020 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Oil & Ex. Gas.

No. and Description of Boilers 1 S.E. Multitubular. Working Pressure 150 lbs. per sq"

Tested by hydraulic pressure to 275 lbs. Date of test 12.5.50 No. of Certificate 7302. Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 3" double high lift.

Area of each set of valves per boiler { per Rule 14.12 / as fitted 15.4 } Pressure to which they are adjusted 150 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 - Is oil fuel carried in the double bottom under boilers? -

Smallest distance between shell of boiler and tank top plating (In Hydrostatic) Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 12'-10 3/16" Length 11'6" Shell plates: Material steel Tensile strength 29.33

Thickness 29/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D.R. Lap. / inter - }

long. seams T.R. DBS. Diameter of rivet holes in { circ. seams 1.1/16" / long. seams 1.1/16" } Pitch of rivets { 3.187 / 7.1/16" }

Percentage of strength of circ. end seams { plate 66.6% / rivets 48.7 } Percentage of strength of circ. intermediate seam { plate - / rivets - }

Percentage of strength of longitudinal joint { plate 84.9 / rivets 103 / combined } Working pressure of shell by Rules 157 lbs.

Thickness of butt straps { outer 23/32" / inner 27/32" } No. and Description of Furnaces in each Boiler 2 Deightson Corrugated.

Material steel. Tensile strength 26.30 Smallest outside diameter 3'10"

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

Dimensions of stiffening rings on furnace or c.c. bottom Steel. Working pressure of furnace by Rules 156 lbs.

End plates in steam space: Material steel Tensile strength 26.30 Thickness 1" Pitch of stays 18" x 17"

How are stays secured Double nuts and washers screwed into both plates. Working pressure by Rules 150 lbs.

Tube plates: Material { front / back steel. } Tensile strength { 26.30 } Thickness { 7/8" / 3/4" }

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 13 1/2" Working pressure { front 159 lbs. / back 167 lbs. }

Girders to combustion chamber tops: Material steel Tensile strength 28.32 Depth and thickness of girder at centre 7 1/2" - 1 1/4" Length as per Rule 2'-4" Distance apart 9" No. and pitch of stays in each welded. Working pressure by Rules 174 lbs.

Combustion chamber plates: Material steel. Tensile strength 26.30 Thickness: Sides 21/32" Back 19/32" Top 21/32 Bottom 21/32"

Pitch of stays to ditto: Sides 10" x 9" Back 9 1/2" x 8 1/4" Top 9" x 9" Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 152 lbs. Front plate at bottom: Material steel Tensile strength 26-30

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26.30 Thickness 3/4"

Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over Nuts.

Working pressure 150 lbs. Main stays: Material steel. Tensile strength 28.32

Diameter { At body of stay or Over threads 2.3/4" } No. of threads per inch 6 Area supported by each stay 306 per sq. inchs.

Working pressure by Rules 180 lbs. Screw stays: Material steel Tensile strength 26.30

Diameter { At turned off part, or Over threads 1 1/2" } No. of threads per inch 9 Area supported by each stay 78.5

Working pressure by Rules 160 lbs. Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part / Over threads 1 5/8" ✓

No. of threads per inch 9 ✓ Area supported by each stay 103.1 per sq. " Working pressure by Rules 176 lbs.

Tubes: Material seamless steel External diameter { Plain 2 1/2" ✓ / Stay 2 1/2" ✓ } Thickness { 10 SWG ✓ / 5/16" ✓ } No. of threads per inch 9 ✓

Pitch of tubes 3 3/4" x 3 3/4" ✓ Working pressure by Rules Plain 175 lbs. stay 182 Manhole compensation: Size of opening in shell plate 21" x 17" ✓ Section of compensating ring 8 3/4" x 1 1/8" ✓ No. of rivets and diameter of rivet holes 52 - 1.1/16" ✓

Outer row rivet pitch at ends 7.1/16" ✓ 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 ... 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 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 ... Working pressure as per Rules ... 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 ...

The foregoing is a correct description,

... Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 1950. Mar.24. Apr.5.11.14.19.28. May.12. / { During erection on board vessel - - - } ...

Are the approved plans of boiler and superheater forwarded herewith 18.2.48. (If not state date of approval.)

Total No. of visits 7.

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. "MARIETTA" 7141/42 Riley's Blrs.7139/42 Appd. 18.3

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

The materials and workmanship are good and on complation the boiler was hydraulically tested to 275 lbs. per sq. inch and found satisfactory.

This boiler is being forwarded to Messrs. Wm. Doxford & Sons Ltd., for their Con. No. 779.

This boiler has been Securely fixed on board the Vessel & Safety valves adjusted Under Steam & Working Pressure

For recommendation Please See Machy. Rpt.

D. J. Kaow

Survey Fee ... ... £ 33 : 12 : 0 } When applied for, 23.5. 1950.

Travelling Expenses (if any) £ : : } When received ... 19 ...

E. Norman Stuart

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 25 AUG 1950

Assigned See minute on L.E. Rpt.