

REPORT ON BOILERS.

No. 112620

Received at London Office JUN 1 1939

Date of writing Report 19 When handed in at Local Office 30 MAY 1939 Port of LIVERPOOL

No. in Reg. Book. 27788 on the Survey held at Birkenhead S.S. Diloma Date, First Survey 29/6/38 Last Survey 12/5/39

(Number of Visits 92) Tons Gross 8766 Net 4767

Master Built at Birkenhead By whom built Cammell Laird & Co. Yard No. 1037 When built 1939
Engines made at Newcastle-on-Tyne By whom made Hawthorn Leslie & Co. Engine No. 3955 When made 1939
Boilers made at Birkenhead By whom made Cammell Laird & Co. Boiler No. 1037 When made 1939
Nominal Horse Power 502 Owners Anglo Saxon Petroleum Co. Port belonging to London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvill & Co. Glasgow Dryden & Co. Ltd (Letter for Record 5)

Total Heating Surface of Boilers 2500 sq ft Is forced draught fitted Yes Coal or Oil fired Oil, or Fuel and Gas.

No. and Description of Boilers one multitubular cylindrical Working Pressure 180 lb sq in 180

Tested by hydraulic pressure to 320 lb sq in Date of test 9-12-38 No. of Certificate 2509 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 16 sq ft No. and Description of safety valves to each boiler Two - spring loaded
Area of each set of valves per boiler as fitted 16.6 sq ft Pressure to which they are adjusted 180 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 or uptakes and bunkers or woodwork 2'-9" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 3'-5" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 14'-3 7/8" Length 11'-6" Shell plates: Material Steel Tensile strength 28-32 tons sq in

Thickness 1 3/16" Are the shell plates welded or flanged No Description of riveting: circ. seams DR lap

Long. seam Double R. double butts Diameter of rivet holes in circ. seams 1 1/4" long. seams 1 1/4" Pitch of rivets 3-4 5/8" 8 3/4"

Percentage of strength of circ. end seams plate 64 rivets 49 Percentage of strength of circ. intermediate seam plate 85.7 rivets 91

Percentage of strength of longitudinal joint plate 85.7 rivets 91 combined 89.8 Working pressure of shell by Rules 183 lb sq in

Thickness of butt straps outer 1 7/16" inner 1 1/32" No. and Description of Furnaces in each Boiler Three Corrugated.

Material Steel Tensile strength 26-30 tons sq in Smallest outside diameter 3'-7 1/8"

Length of plain part top bottom Thickness of plates crown 9/16" bottom 9/16" Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 189 lb sq in

End plates in steam space: Material Steel Tensile strength 26-30 tons sq in Thickness 1 7/32" Pitch of stays 21" x 17 1/4"

How are stays secured Double nuts + thin washers Working pressure by Rules 181 lb sq in

Tube plates: Material front Steel back Steel Tensile strength 26-30 tons sq in Thickness 1 5/16" 1 3/16"

Mean pitch of stay tubes in nests 8'-8" Pitch across wide water spaces 13 3/4" Working pressure front 243 lb sq in back 302 lb sq in

Orders to combustion chamber tops: Material Steel Tensile strength 28-32 tons sq in Depth and thickness of girder

centre 2 plates 10" x 3 1/4" Length as per Rule 34" Distance apart 10" No. and pitch of stays

each 3 x 8" Working pressure by Rules 194 lb sq in Combustion chamber plates: Material Steel

Tensile strength 26-30 tons sq in Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 7/8"

Pitch of stays to ditto: Sides 8' x 8" Back 8' x 8" Top 10' x 8" Are stays fitted with nuts or riveted over riveted marginal

Working pressure by Rules 189 lb sq in Front plate at bottom: Material Steel Tensile strength 26-30 tons sq in

Thickness 1 5/16" Lower back plate: Material Steel Tensile strength 26-30 tons sq in Thickness 2 7/32"

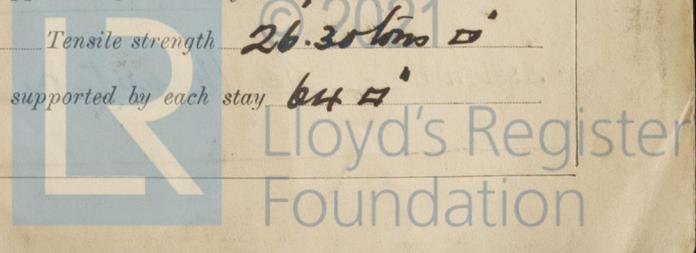
Pitch of stays at wide water space 15' x 8" Are stays fitted with nuts or riveted over hats.

Working Pressure 201 lb sq in Main stays: Material Steel Tensile strength 28-32 tons sq in

Shipping meter At body of stay, Over threads 3" No. of threads per inch 6 Area supported by each stay 373 sq in

Working pressure by Rules 188 lb sq in Screw stays: Material Steel Tensile strength 26-30 tons sq in

meter At turned off part, Over threads 1 1/2" No. of threads per inch 9 Area supported by each stay 64 sq in



Working pressure by Rules $196 \frac{1}{2} \square$ Are the stays drilled at the outer ends *no* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 1 \frac{3}{4} \text{ inch} \\ \text{Over threads } 1 \frac{1}{4} \text{ inch} \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 92 Working pressure by Rules $192 \frac{1}{2} \square$

Tubes: Material *L.W.W Iron* External diameter $\left\{ \begin{array}{l} \text{Plain } 2 \frac{3}{4} \text{ inch} \\ \text{Stay } 2 \frac{3}{4} \text{ inch} \end{array} \right.$ Thickness $1 \frac{7}{16} \text{ inch}$ No. of threads per inch 9

Pitch of tubes $4 \times 3 \frac{7}{8}$ Working pressure by Rules $210 \frac{1}{2} \square$ Manhole compensation: Size of opening $10 \frac{1}{2} \times 13 \frac{1}{16}$ No. of rivets and diameter of rivet holes $40 \text{ at } 1 \frac{1}{4}$

shell plate 21×17 Section of compensating ring $10 \frac{1}{2} \times 13 \frac{1}{16}$ No. of rivets and diameter of rivet holes $40 \text{ at } 1 \frac{1}{4}$

Outer row rivet pitch at ends $8 \frac{3}{4}$ Depth of flange if manhole flanged $3 \frac{1}{2}$ Steam Dome: *None*

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate } \checkmark \\ \text{Rivets } \checkmark \end{array} \right.$

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of rivets

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 *none* Manufacturers of $\left\{ \begin{array}{l} \text{Tubes } \checkmark \\ \text{Steel castings } \checkmark \end{array} \right.$

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 Rules

tubes castings and after assembly in place Hydraulic test pressure

to free the superheater from water where necessary Are drain cocks or valves fitted

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

The foregoing is a correct description,
W.H. Hume

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right.$ See Machy report. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case *no* If so, state Vessel's name and Report No.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been constructed under special survey, and is in accordance with the Rules and the approved plan. The workmanship is good throughout. It has been satisfactorily fitted on board, and examined under steam, and is eligible in my opinion for classification in Register book with record of 210 1/2 square.*

Survey Fee £ : : When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

J. Milton

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **LIVERPOOL 31 MAY 1939**

Assigned *See Minute on I.E. Machinery*



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