

REPORT ON BOILERS.

No. 50403.

DEC 12 1939

Received at London Office

Date of writing Report 11 DEC 1939 When handed in at Local Office HULL Port of HULL

No. in Reg. Book 10 Survey held at Hull. Date, First Survey 23. 5. 39. Last Survey 18. 11. 1939.

on the Steam Trawler. LADY MADELEINE (Number of Visits 32.) Tons { Gross 581 Net 214.

Master ✓ Built at Beverley. By whom built Cook, Welton & Gemmell Ltd. Yard No. 651 When built 1939-11

Engines made at Hull. By whom made C. D. Holmes & Co., Ltd. Engine No. 1553 When made 1939-11

Boilers made at - By whom made - Boiler No. - When made -

Nominal Horse Power 170. Owners Jutland Amalgamated Trawlers, Ltd. Port belonging to Hull.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 2551 sq ft Is forced draught fitted yes. Coal or Oil fired Coal.

No. and Description of Boilers one S.B. Working Pressure 225 lbs.

Tested by hydraulic pressure to 390 lbs. Date of test 29. 9. 39. No. of Certificate 4015. Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 64 sq ft No. and Description of safety valves to each boiler One twin valve spring loaded.

Area of each set of valves per boiler { per Rule 16.1 as fitted 19.29 } Pressure to which they are adjusted 225 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 12" 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 No.

Largest internal dia. of boilers 15'-9 1/16" Length 11' 0" Shell plates: Material Steel Tensile strength 31-35 tons.

Thickness 1 5/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end Double riveted lap. inter. 9 7/8" } long. seams Treble riveted D.B.S. Diameter of rivet holes in { circ. seams 1 5/32" long. seams 1 1/2" } Pitch of rivets { 9 7/16" }

Percentage of strength of circ. end seams { plate 62.1 rivets 44.2 } Percentage of strength of circ. intermediate seam { plate 84.3 rivets 86.9 combined 85.9 }

Percentage of strength of longitudinal joint { plate 84.3 rivets 86.9 combined 85.9 } Working pressure of shell by Rules 226.3 lbs.

Thickness of butt straps { outer 1 5/32" inner 1 9/32" } No. and Description of Furnaces in each Boiler 3. c.f. Deighton type.

Material Steel Tensile strength 26-30 tons. Smallest outside diameter 8' 10"

Length of plain part { top ✓ bottom ✓ } Thickness of plates { crown 2 3/32" bottom 2 3/32" } Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 229.5 lbs.

End plates in steam space: Material Steel Tensile strength 26-30 tons. Thickness 1 1/4" Pitch of stays 19 1/4" + 18 7/8"

How are stays secured Nuts & washers. Working pressure by Rules 236 lbs.

Tube plates: Material { front Steel back Steel } Tensile strength { 26-30 tons. } Thickness { 3 1/32" } Working pressure { front 236 lbs. back 249 lbs. }

Mean pitch of stay tubes in nests 10-9 1/4" Pitch across wide water spaces 14 1/4"

Girders to combustion chamber tops: Material Steel. Tensile strength 29-33 tons. Depth and thickness of girder at centre 9" x 7 1/8" x 2" Length as per Rule 32 1/4" Distance apart 9 1/4" No. and pitch of stays in each 3 @ 7 1/2" Working pressure by Rules 236 lbs. Combustion chamber plates: Material Steel.

Tensile strength 26-30 tons. Thickness: Sides 2 3/32" Back 2 3/32" Top 7/16" Bottom 1 5/16"

Pitch of stays to ditto: Sides 9 3/4" x 8" Back 8 3/8" x 9 3/16" Top 9 1/4" x 7 1/2" Are stays fitted with nuts or riveted over Nuts.

Working pressure by Rules 235 lbs. Front plate at bottom: Material Steel Tensile strength 26-30 tons.

Thickness 3 1/32" Lower back plate: Material Steel. Tensile strength 26-30 tons. Thickness 2 9/32"

Pitch of stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over Nuts.

Working Pressure 225 lbs. Main stays: Material Steel. Tensile strength 28-32 tons.

Diameter { At body of stay, 3 3/8" or Over threads } No. of threads per inch 8 Area supported by each stay 368 sq in

Working pressure by Rules 237 lbs. Screw stays: Material Steel. Tensile strength 26-30 tons.

Diameter { At turned off part, 1 7/8", 2", 2 1/8" or Over threads } No. of threads per inch 10 Area supported by each stay 77 sq in



LADY MADELINE

Working pressure by Rules 235 lbs. Are the stays drilled at the outer ends No. Margin stays: Diameter ^{At turned off part,} 1 7/8" ^{or} 2" ^{Over threads} 2 1/8"
 No. of threads per inch 10 Area supported by each stay 138 Working pressure by Rules 229 lbs / sq"
 Tubes: Material W.G. External diameter ^{Plain} 3 1/2" ^{Stay} 3 1/2" Thickness 3/16" 5/16" 7/16" No. of threads per inch 9
 Pitch of tubes 4 3/4" x 4 3/4" Working pressure by Rules 260 PLAIN, 230 STAY. Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring No. of rivets and diameter of rivet holes
 Outer row rivet pitch at ends Depth of flange of manhole flanged 3 1/4" Steam Dome: Material Steel.
 Tensile strength 26-30 tons Thickness of shell 3/4" Description of longitudinal joint S.R. Lap.
 Diameter of rivet holes 1 1/32" Pitch of rivets 2 1/4" Percentage of strength of joint ^{Plate} 54% ^{Rivets} 48.8%
 Internal diameter 2'-9" Working pressure by Rules 230 lbs. Thickness of crown 5/16" No. and diameter of stays 2 @ 2 3/8" Inner radius of crown flat Working pressure by Rules 225 lbs/sq"
 How connected to shell Double riveted. Size of doubling plate under dome 4-11 1/4" x 1 15/32" Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 1 1/2" dia - 10 3/4"

Type of Superheater Smoke tube type Manufacturers of ^{Tubes} Superheaters Co. Ltd. ^{Steel forgings} Steel ^{Steel castings}
 Number of elements 60 Material of tubes Steel Internal diameter and thickness of tubes 1 7/8" bore. 3/16" thick
 Material of headers Steel Tensile strength Thickness 5/16" 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 1.77 sq" Are the safety valves fitted with easing gear Yes. Working pressure as per Rules 225 lbs/sq" Pressure to which the safety valves are adjusted 225 lbs/sq" Hydraulic test pressure: tubes 1000 lbs. forgings and castings 675 lbs. and after assembly in place 675 lbs. Are drain cocks of 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.

The foregoing is a correct description,
 FOR CHARLES D. HOLMES & CO. LTD. Manufacturer.

Dates of Survey ^{During progress of work in shops - -} 1937 MAY 23, JUN 20, JUL 20, 28, AUG 15, 25 Are the approved plans of boiler and superheater forwarded herewith Yes. (If not state date of approval.)
^{while building} ^{During erection on board vessel - -} 24, 24, 25, SEP. 5, 5, 7, 11, 12, 13, 14, 20, 21, 26, 27, 29, OCT. 3, 3, 5, 5, 14, NOV. 3, 6, 10, 13, 14, 18. Total No. of visits 32.

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This boiler has been built under special survey in accordance with the Rules & the approved plans. The workmanship & materials are good & when subjected to the hydraulic test presented in the Rules, was found satisfactory in every respect.

[Handwritten notes and signatures in the lower section of the form, including various initials and dates.]

Survey Fee ... £ : : When applied for, 10
 Travelling Expenses (if any) £ : : When received, 10

[Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See Int. J.E. 50403

WED 20 DEC 1937

