

REPORT ON BOILERS.

No. 11317

Received at London Office 11 JAN 1943

Date of writing Report 31-12-1942 When handed in at Local Office

8/11 10 43

Port of Manchester

No. in Reg. Book. Survey held at Hyde - near Manchester

Date, First Survey

6-5-42

Last Survey

22-12-1942

on the Empire Mackay

(Number of Visits 18)

Gross Tons Net

Master Built at

By whom built

Harland & Wolff Ltd

Yard No.

When built

Engines made at

By whom made

Engine No.

When made

Boilers made at Hyde

By whom made

Joseph Adamson & Co Ltd

Boiler No. 105

When made 1942

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel COLVILLES L.F. GLASGOW

(Letter for Record (S))

Total Heating Surface of Boilers 1918 SQ. FT. Is forced draught fitted YES Coal or Oil fired

No. and Description of Boilers ONE S.E. MULTITUBULAR CYLINDRICAL DONKEY BOILER Working Pressure 150 lbs/sq in

Tested by hydraulic pressure to 275 lbs/sq in Date of test 13-11-42 No. of Certificate 105 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler NOT FITTED BY J. ADAMSON & CO L.F.

Area of each set of valves per boiler per Rule as fitted Pressure to which they are adjusted Are they fitted with easing gear

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 Is the bottom of the boiler insulated

Largest internal dia. of boilers 12'-6" Length 11'-0" Shell plates: Material O.H. STEEL Tensile strength 29/33 Tons/sq in

Thickness 7/8" Are the shell plates welded or flanged NO Description of riveting: circ. seams end D.R. LAP JOINT inter.

long. seams D.B. STRAPS, 5 RIVETS/PITCH Diameter of rivet holes in circ. seams 13/32 long. seams 11/32 Pitch of rivets 3-038 6 1/16

Percentage of strength of circ. end seams plate 64.0 rivets 56.0 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 84.57 rivets 106.7 combined 90.5 Working pressure of shell by Rules 154.6 lbs/sq in

Thickness of butt straps outer 11/16" inner 13/16" No. and Description of Furnaces in each Boiler TWO DEIGHTON CORRUGATED FURNACES

Material O.H. STEEL Tensile strength 26/30 TONS/SQ IN Smallest outside diameter 3'-6"

Length of plain part top bottom Thickness of plates crown 3/2" bottom Description of longitudinal joint WELDED

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 171 lbs/sq in

End plates in steam space: Material O.H. STEEL Tensile strength 26/30 TONS/SQ IN Thickness 15/16" Pitch of stays 15" x 16 3/4"

How are stays secured NUTS INSIDE & OUTSIDE Working pressure by Rules 159.7 lbs/sq in

Tube plates: Material front O.H. STEEL back O.H. STEEL Tensile strength 26/30 TONS/SQ IN Thickness 7/8" 13/16"

Mean pitch of stay tubes in nests 9.53" Pitch across wide water spaces 13 1/2" x 7 1/4" Working pressure front 161.4 lbs/sq in back 261.6 lbs/sq in

Girders to combustion chamber tops: Material O.H. STEEL Tensile strength 28/32 TONS/SQ IN Depth and thickness of girder

at centre 8 1/4" TWO 3/4" THICK Length as per Rule 29 15/16" Distance apart 11" No. and pitch of stays

in each 3 AT 7 1/4" Working pressure by Rules 162.3 lbs/sq in Combustion chamber plates: Material O.H. STEEL

Tensile strength 26/30 TONS/SQ IN Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4" GIRDER AND MARGINAL STAYS WITH NUTS ON C.C. SIDE,

Pitch of stays to ditto: Sides 9 3/4" x 8 1/4" Back 8" x 9 1/4" Top 7 1/4" x 11" Are stays fitted with nuts or riveted over OTHERS RIVETED OVER.

Working pressure by Rules 162.5 lbs/sq in Front plate at bottom: Material O.H. STEEL Tensile strength 26/30 TONS/SQ IN

Thickness 7/8" Lower back plate: Material O.H. STEEL Tensile strength 26/30 TONS/SQ IN Thickness 15/16"

Pitch of stays at wide water space 13" x 9 1/4" Are stays fitted with nuts or riveted over RIVETED OVER

Working Pressure 188.3 lbs/sq in Main stays: Material O.H. STEEL Tensile strength 28/32 TONS/SQ IN

Diameter At body of stay, or Over threads 2 1/2" No. of threads per inch 6 Area supported by each stay 255.4 SQ. INS.

Working pressure by Rules 173.4 lbs/sq in Screw stays: Material O.H. STEEL Tensile strength 26/30 TONS/SQ IN

Diameter At turned off part, or Over threads 1 1/2" No. of threads per inch 11 Area supported by each stay 80.44 SQ. INS.

Working pressure by Rules 155.9 lbs/0 Are the stays drilled at the outer ends NO Margin stays: Diameter At turned off part, or Over threads. 1 5/8" & 2" AT CORNERS
 No. of threads per inch 11 Area supported by each stay 97.12 SQ. INCH. Working pressure by Rules 156.7 lbs/0
 Tubes: Material O.H. STEEL External diameter Plain 2 1/2" Stay 2 1/2" Thickness 10 LSG. 1/4", 5/16" & 3/8" No. of threads per inch 9
 Pitch of tubes 3 3/4" x 3 5/8" Working pressure by Rules 150 lbs/0 Manhole compensation: Size of opening in shell plate 12 1/2" x 16 1/2" Section of compensating ring 9 3/4" x 3 1/4" No. of rivets and diameter of rivet holes 28 - 1 7/32" DIA.
 Outer row rivet pitch at ends 9" Depth of flange if manhole flanged 3 3/8" LOWER Steam Dome: Material
 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
 How connected to shell Inner radius of crown Working pressure by Rules
 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 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 casing gear Working pressure as per Rules
 Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes 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 YES, WHERE APPLICABLE.

The foregoing is a correct description,
 JOSEPH JAMSON & CO. LIMITED. Manufacturer.
 Joseph Jamson Joint Managing Director.

Dates of Survey while building May 6th
 During progress of work in shops - - - JULY 3rd, 7th, 15th, 31st AUG. 4th, 11th, 18th, 25th
 During erection on board vessel - - - SEPT 4th, 24th OCT. 12th, 20th, 28th NOV. 5th, 13th, 25th, DEC. 22nd 1942.
 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 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, I tested materials and in accordance with the Secretary's letters, the approved plans and the requirements of the Rules. The materials and workmanship are of good quality and the boiler when tested in the shops under an hydraulic pressure of two hundred and seventy five pounds per square inch was found sound and tight.

This boiler is, in opinion, suitable to be fitted on board a vessel classed with this Society and for the purpose intended.

The boiler shell plate at the front end and left hand side has been stamped

**NO 105
 LLOYDS TEST
 275 LBS/0"
 WP 150 LBS/0"
 DRW 13-11-42**

DRW

Survey Fee ... £ : When applied for, 19
 Travelling Expenses (if any) £ : When received, 19

D. Whalburg & L. Matheson
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 12 OCT 1942

Assigned