

## REPORT ON BOILERS.

No. 11317

Rm. 67629

Received at London Office

11 JAN 1943

14 OCT 1943

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

8/11-10-43

Port of Manchester

6-5-42

No. in Reg. Book.

Survey held at

Hyde - near Manchester

Date, First Survey

11-11-42

Last Survey

22-12-1942

on the

Empire Mackay

(Number of Visits 18)

Tons

Gross

Net

Master

Built at

By whom built

Harland &amp; 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 &amp; 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 &amp; 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"

Thickness

7/8"

Are the shell plates welded or flanged

NO

long. seams

D.B. STRAPS, 5 RIVETS/PATCH

Diameter of rivet holes in

circ. seams

1 3/32"

long. seams

1 1/32"

Shell plates: Material

O.H. STEEL

Tensile strength

29/33 Tons/sq. in.

Pitch of rivets

3-038

Percentage of strength of circ. end seams

plate

64.0

rivets

56.0

Percentage of strength of circ. intermediate seam

plate

84.57

rivets

106.7

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 1/2"

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 &amp; OUTSIDE

Working pressure by Rules

159.7 lbs/sq. in.

Tube plates: Material

front

O.H. STEEL

Tensile strength

26/30 Tons/sq. in.

Thickness

7/8"

back

O.H. STEEL

Tensile strength

26/30 Tons/sq. in.

Thickness

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"

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 *155.94/0* 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. INS.* Working pressure by Rules *156.76/0*  
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 *150.26/0* 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  
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  
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 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 *May 6<sup>th</sup>*  
During progress of work in shops - - - *JULY. 3<sup>rd</sup>, 7<sup>th</sup>, 18<sup>th</sup>, 31<sup>st</sup> AUG. 4<sup>th</sup>, 11<sup>th</sup>, 18<sup>th</sup>, 25<sup>th</sup>*  
while building *SEPT. 4<sup>th</sup>, 24<sup>th</sup> OCT. 12<sup>th</sup>, 20<sup>th</sup>, 28<sup>th</sup> NOV. 5<sup>th</sup>, 13<sup>th</sup>, 25<sup>th</sup>, DEC. 22<sup>nd</sup>. 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*

*DRW*  
N°105  
LLOYDS TEST  
275 LBS/0"  
WP 150 LBS/0"  
DRW 13-11-42

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

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

Committee's Minute *GLASGOW 12 OCT 1943*  
Assigned