

REPORT ON BOILERS.

No. 119301.

Received at London Office

Date of writing Report

19

When handed in at Local Office

19

Port of

No. in Survey held at

Hydham + Preston

Date, First Survey

10/10/41

Last Survey

19/3/1943

Reg. Book.

(Number of Visits

49

Gross

292.98

Tons

Net 92.82

on the *Steel screw "FRESHMERE"*Built at *Hydham*

By whom built

The Hydham S.B. & Co. Ltd.

Yard No. 871

When built 1943.

Engines made at

- do -

By whom made

- do -

Engine No. 530

When made - do -

Boilers made at

- do -

By whom made

- do -

Boiler No. 549

When made - do -

Nominal Horse Power

90.

Owners

The Admiralty

Port belonging to

London.

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Steel Screw Company of Scotland, Ltd. - Solvay & Co. Internat. - London* Letter for Record *513*

Total Heating Surface of Boilers

1600 sq ft

Is forced draught fitted

yes

Coal or Oil fired

Coal.

No. and Description of Boilers

One, single ended, multitubular dynamical (Scott) type

Working Pressure

180 lbs/sq in

Tested by hydraulic pressure to

320 lbs/sq in

Date of test

26/11/42

No. of Certificate

2582

Can each boiler be worked separately

✓

Area of Firegrate in each Boiler

46.5 sq ft

No. and Description of safety valves to each boiler

Two 2 1/4" dia. spring loaded.

Area of each set of valves per boiler

per Rule 10.25 sq in

as fitted

11.87 sq in

Pressure to which they are adjusted

180 lbs/sq in

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

8 1/2"

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

no.

Largest internal dia. of boilers

12'-9 1/8"

Length

10'-6"

Shell plates: Material

Steel.

Tensile strength

29-33 tons/sq in

Thickness

1 1/8"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

end 2R.

long. seams

T.R. D.B.S.

Diameter of rivet holes in

*circ. seams 1 3/32"**long. seams 1 3/32"*

Pitch of rivets

3 3/8"

Percentage of strength of circ. end seams

*plate 67%**rivets 42.8%*

Percentage of strength of circ. intermediate seam

*plate 85.8%**rivets 84.3%*

Percentage of strength of longitudinal joint

*plate 85.8%**rivets 84.3%**combined 89.1%*

Thickness of butt straps

*outer 25/32**inner 29/32*

No. and Description of Furnaces in each Boiler

3 Single end type with slotted lower back ends

Material

Steel.

Tensile strength

26-30 tons/sq in

Smallest outside diameter

33 5/8"

Length of plain part

*top 7/16"**bottom 7/16"*

Thickness of plates

*crown 7/16"**bottom 7/16"*

Description of longitudinal joint

Welded.

Dimensions of stiffening rings on furnace or c.c. bottom

✓

End plates in steam space: Material

Steel.

Tensile strength

26-30 tons

Thickness

1 3/8"

Pitch of stays

1 1/4" x 1 1/4"

How are stays secured

Double nuts.

Tube plates: Material

*front Steel.**back Steel.*

Tensile strength

26-30 tons/sq in

Thickness

7/8"

25/32"

Mean pitch of stay tubes in nests

9 x 11 3/32"

Pitch across wide water spaces

14 1/2"

Girders to combustion chamber tops: Material

Steel.

Tensile strength

28-32 tons/sq in

Depth and thickness of girder

at centre

8 3/8" x 7/16" Double plates

Length as per Rule

3 1/2"

Distance apart

11"

No. and pitch of stays

in each

Two @ 9 7/8"

Combustion chamber plates: Material

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

10 1/4" x 9 7/8"

Back

10 x 9 7/8"

Top

11 x 9 7/8"

Are stays fitted with nuts or riveted over

nuts.

Front plate at bottom: Material

Steel.

Tensile strength

26-30 tons/sq in

Thickness

7/8"

Lower back plate: Material

Steel.

Tensile strength

26-30 tons/sq in

Thickness

7/8"

Pitch of stays at wide water space

14 3/4" x 10"

Are stays fitted with nuts or riveted over

nuts.

Main stays: Material

Steel.

Tensile strength

28-32 tons/sq in

Diameter

*At body of stay, 2 5/8"**or 3"*

No. of threads per inch

six.

Screw stays: Material

Steel.

Tensile strength

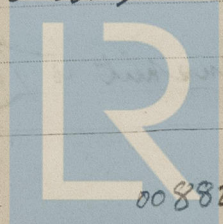
26-30 tons/sq in

Diameter

*At turned off part, 1 1/4"**or 1 1/8"*

No. of threads per inch

9.



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Are the stays drilled at the outer ends *no.* Margin stays: Diameter { At turned off part, *1.86"* or Over threads *2"*

No. of threads per inch *9*

Tubes: Material *chromium steel* External diameter { Plain *3 1/4"* Stay *3 1/4"* Thickness { *8 W.G.* *1/4", 5/16", 3/8"* No. of threads per inch *9*

Pitch of tubes *4 1/2" x 4 9/16"* Manhole compensation: Size of opening in shell plate *20" x 16"* Section of compensating ring *2 1/2" x 2 1/2" x 1 1/16"* No. of rivets and diameter of rivet holes *32 @ 1 5/16"*

Outer row rivet pitch at ends *9"* Depth of flange if manhole flanged *3 1/2"* 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 *✓* Thickness of crown *✓* No. and diameter of stays *✓* Inner radius of crown *✓*

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 *✓*

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 *yes*

The foregoing is a correct description,
THE LUTHER SHIPBUILDING and
ENGINEERING COMPANY, LIMITED Manufacturer.

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - - }

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 *yes* If so, state Vessel's name and Report No. *"Freetake" Serial No 118415*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This boiler has been constructed under special survey in accordance with the approved plans and the Society's Rules. The materials and workmanship are sound and good. The boiler has been satisfactorily fitted on board, examined under steam and the safety valves adjusted under steam to the approved working pressure.

It is eligible in my opinion to be classed in the Register Book with notation I.S.B. F.D. - 300 - 180 lbs/sq. in.

Survey Fee ... *Included on Machinery Report* When applied for, 19
 Travelling Expenses (if any) ... When received, 19

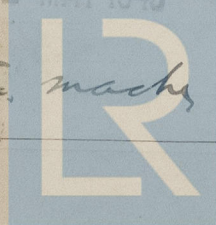
J. H. Lindley
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL** **13 APR 1943**

Assigned

Transmit to London

See P.E. machs rpt



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