

## REPORT ON BOILERS.

No. 170956

Received at London Office

26 APR 1944

Date of writing Report 17-4 1944 When handed in at Local Office 18 APR 1944

Port of LIVERPOOL

No. in Reg. Book.

Survey held at Lytham + Preston

Date, First Survey 11/7/44

Last Survey 24/3/1944

1944

on the steel screw steamer "FRESHBURN"

(Number of Visits)

Tons

Gross 222.91

Net 92.82

Master

Built at Lytham

By whom built Lytham S.S. &amp; B. Co.

Yard No. 874

When built 1944

Engines made at Lytham

By whom made - do -

Engine No. 553, When made 1944

Boilers made at Lytham

By whom made - do -

Boiler No. 552, When made 1944

Nominal Horse Power 90

Owners

For Admiralty Tender Services

Port belonging to

London

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel. Steel Co. of Scotland, Ltd. - Colvilles St. Internal - Bonnet (Letter for Record S.P. 5)

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 multi

Working Pressure 180 lb/sq in

Tested by hydraulic pressure to 320 lb/sq in

Date of test 18-11-43

No. of Certificate 2626

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

2-2 3/4" 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 lb/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 5/16"

Length 10-6"

Shell plates: Material

Steel

Tensile strength 24-33 tons/sq in

Thickness 1 1/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end D.P.

long. seams

T.P. - D.P.S.

Diameter of rivet holes in

circ. seams 1 3/32"

long. seams 1 3/32"

Pitch of rivets

3 3/8"

4 3/4"

Percentage of strength of circ. end seams

plate 64%

rivets 42.8%

Percentage of strength of circ. intermediate seam

plate Approved

rivets - do -

Percentage of strength of longitudinal joint

plate 85.8%

rivets 84.5%

combined 89.1%

Working pressure of shell by Rules 182.2

Thickness of butt straps

outer 25/32"

inner 29/32"

No. and Description of Furnaces in each Boiler

3 Deighton Type, with stepped Bourley back ends

Material

Steel

Tensile strength 26-30 tons/sq in

Smallest outside diameter

33 5/8"

Length of plain part

top

bottom

Thickness of plates

crown 7/16"

bottom 7/16"

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules Approved

End plates in steam space: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

1 3/32"

Pitch of stays 14 1/4" x 17 3/4"

How are stays secured

Double nuts

Working pressure by Rules

Approved

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons/sq in

Thickness

29/32"

Working pressure

front Approved

back - do -

Mean pitch of stay tubes in nests

9' x 11 3/32"

Pitch across wide water spaces

14 1/2"

Working pressure

front Approved

back - do -

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 15" (Double plates)

Length as per Rule

3 1/2" 7-34

Distance apart 11"

No. and pitch of stays

in each

Two @ 9 7/8"

Working pressure by Rules

Approved

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 3/4" x 9 7/8"

Back

10 x 10 1/4"

Top

11" x 9 7/8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

Approved

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

7/8"

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

Working Pressure

Approved

Main stays: Material

Steel

Tensile strength

28-32 tons/sq in

Diameter

At body of stay, 2 5/8"

or Over threads 3"

No. of threads per inch

6

Area supported by each stay

289 sq in

Working pressure by Rules

Approved

Screw stays: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

10/16" 106.5 108.1

Diameter

At turned off part, 1 7/8"

or Over threads 1 7/8"

No. of threads per inch

9

Area supported by each stay

10/16" 106.5 108.1

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Working pressure by Rules Approved 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 " Area supported by each stay 128.75 sq. in. Working pressure by Rules Approved Tubes: Material Stainless External diameter { Plain 3 1/4 " Stay 3 1/4 " Thickness { 8 W.G. 1/2 " 5/16 " 3/8 " No. of threads per inch 9 " Pitch of tubes 4 1/2 x 4 9/16 " Working pressure by Rules Approved Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 2-11/16 x 2-7/8 x 1 1/2 " No. of rivets and diameter of rivet holes 8 @ 3/16 " 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 ✓ 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 ✓ 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 ✓ Working pressure as per Rules ✓ 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,  
ENGINEERING COMPANY, LIMITED Manufacturer.

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

See attached 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 yes If so, state Vessel's name and Report No. "Freelance" 120255 (Ch. 14/15)

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 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 1SB-ED-3CF-180 lbs/sq. in.

Survey Fee

Travelling Expenses (if any) £

When applied for,

When received,

19

19

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

Committee's Minute

Assigned

Transmit to London.

THURS 11 MAY 1944

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