

REPORT ON BOILERS.

No. 117763

Received at London Office

13 MAY 1942

Date of writing Report

19

When handed in at Local Office

19

Port of

LIVERPOOL

No. in Survey held at *Sytham & Preston*

Date, First Survey

28/5/41

Last Survey

20/4/1942

Book.

on the *Steel Screw "FRESHBROOK."*

(Number of Visits 41)

Gross 278.14.
Net 98.69.

built at *Sytham*

By whom built *Sytham S.B. & E. Co. Ltd*

Yard No. 868 When built 1942

Engines made at *do*

By whom made *do*

Engine No. 547 When made 1942

Boilers made at *do*

By whom made *do*

Boiler No. 546 When made 1942

Indicated Horse Power

90

Owners *The Admiralty*

Port belonging to *London*

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Colvilles Ltd. Consett Iron Co. Ltd. Steel Co. of Scotland Ltd.*

(Letter for Record *S*)

Total Heating Surface of Boilers *1600 sq ft*

Is forced draught fitted *Yes*

Coal or Oil fired *Coal*

Type and Description of Boiler *One Single Ended Multitubular Cylindrical (Scotch) Type* Working Pressure *180 lb/sq in*

Tested by hydraulic pressure to *320 lb/sq in* Date of test *18/11/41* No. of Certificate *2548* 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 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 *8 1/2"* and bunkers *do*

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 *29-33 Tons/sq in*

Thickness *1 1/32"* Are the shell plates welded or flanged *No*

Description of riveting: circ. seams (and *D.R.*)

g. seams *T.R. - D.B.S.*

Diameter of rivet holes in

circ. seams *1 3/32"*
long. seams *1 7/32"*

Pitch of rivets *3 3/8"*
7 3/4"

Percentage of strength of circ. end seams (plate *67%* rivets *42.8%*)

Percentage of strength of circ. intermediate seam (plate *85.8%* rivets *87.3%* combined *89.1%*)

Percentage of strength of longitudinal joint (plate *85.8%* rivets *87.3%* combined *89.1%*)

Thickness of butt straps (outer *25/32"* inner *29/32"*)

No. and Description of Furnaces in each Boiler *3 Brighton Type. With stepped - Gurney Brick Ends.*

Tensile strength *26-30 Tons/sq in*

Smallest outside diameter *33 5/8"*

Material *Steel*

Thickness of plates (crown *7/16"* bottom *✓*)

Description of longitudinal joint *Welded*

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

Stays in steam space: Material *Steel*

Tensile strength *26-30 Tons/sq in*

Thickness *1 3/32"*

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

How are stays secured *Double Nuts*

Stays in water space: Material *Steel*

Tensile strength *26-30 Tons/sq in*

Thickness *7/8"*
25/32"

Can pitch of stay tubes in nests *9" x 11 3/32"*

Pitch across wide water spaces *14 1/2"*

Stays to combustion chamber tops: Material *Steel*

Tensile strength *28-32 Tons/sq in*

Depth and thickness of girder

Centre *8 3/8" x 1 5/16" (Double Plates)* Length as per Rule *31 1/2"* *34"*

Distance apart *11"*

No. and pitch of stays

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 3/4" 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*

Bottom 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*

Stays in water space: Material *Steel*

Tensile strength *28-32 Tons/sq in*

Diameter (At body of stay *2 5/8"* or Over threads *3"*)

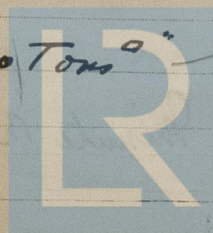
No. of threads per inch *6*

Stays in steam space: Material *Steel*

Tensile strength *26-30 Tons/sq in*

Diameter (At turned off part *1.75"* or Over threads *1 7/8"*)

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 Seamless 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 7/8" X 1 1/16" No. of rivets and diameter of rivet holes 32 @ 1 3/16"

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged 3 1/2"

Steam Dome: Material L

Tensile strength L Thickness of shell L Description of longitudinal joint L

Diameter of rivet holes L Pitch of rivets L Percentage of strength of joint { Plate L
Rivets L

Internal diameter L Thickness of crown L No. and diameter of

stays L Inner radius of crown L

How connected to shell L Size of doubling plate under dome L

Diameter of rivet holes and pitch

of rivets in outer row in dome connection to shell L

Type of Superheater L

Manufacturers of { Tubes L
Steel forgings L
Steel castings L

Number of elements L Material of tubes L Internal diameter and thickness of tubes

Material of headers L Tensile strength L Thickness L Can the superheater be shut off and

the boiler be worked separately L Is a safety valve fitted to every part of the superheater which can be shut off from the boiler L

Area of each safety valve L Are the safety valves fitted with easing gear L

Pressure to which the safety valves are adjusted L Hydraulic test pressure:

tubes L forgings and castings L and after assembly in place L Are drain cocks or

valves fitted to free the superheater from water where necessary L

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.

R. Frederick

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

See Mch report

Are the approved plans of boiler and superheater forwarded herewith no
(If not state date of approval.) 22/4/41.

Total No. of visits

Is this Boiler a duplicate of a previous case yes. If so, state Vessel's name and Report No. "FRESHWATER". Liv Rpt N° 115374.

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

This boiler has been constructed under special survey in accordance with the approved plan 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 1 SB. F.D.-3 C.F.-180 lb.

Survey Fee ... Included on:
Travelling Expenses (if any) £ Machinery Report.

When applied for, 19
When received, 19

W. Edwards & H. Lindley
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 12 MAY 1942

Assigned See Minute re Liverpool H. Report.

See
Liv Rpt N° 117763
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