

REPORT ON BOILERS.

No. 120255

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Date of writing Report 6-11 1943. When handed in at Local Office 19. Port of Liverpool

No. in Reg. Book. Survey held at Lytham & Preston Date, First Survey 18/11/41 Last Survey 28/10/1943

on the Steel Screw "FRESHWELL" (Number of Visits 63) Tons { Gross 222.91 Net 92.82

Master Built at Lytham By whom built Lytham S.B. & Co. Yard No. 843 When built 1943

Engines made at Lytham By whom made Lytham S.B. & Co. Engine No. 552 When made 1943

Boilers made at Lytham By whom made Lytham S.B. & Co. Boiler No. 551 When made 1943

Nominal Horse Power 90 Owners The Admiralty Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel SHELL-Steel Company of Holland, ENOS-Balvieu & Co. S.A. Belgium (Letter for Record SB, S)

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 Endless multitubular cylindrical (Scale) type Working Pressure 180 lbs/sq in

Tested by hydraulic pressure to 320 lbs/sq in Date of test 12-7-43 No. of Certificate 2602 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 ft as fitted 11.87 sq ft 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 15/16" Length 10'-6" Shell plates: Material Steel Tensile strength 29-32 Tons/in²

Thickness 1 1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end DR inter. ✓

long. seams T.R. DRs. 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 ✓ rivets ✓

Percentage of strength of longitudinal joint { plate 85.8% rivets 84.3% 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 hidden lower back boiler

Material Steel Tensile strength 26-30 Tons Smallest outside diameter 33 5/8"

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 4/16" bottom 4/16" 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/in² Thickness 1 3/32" Pitch of stays 14 1/4" x 14 1/4"

How are stays secured Double nuts Working pressure by Rules Approved

Tube plates: Material { front Steel back Steel Tensile strength { 26-30 Tons/in² 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" Working pressure { front Approved back Approved

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Tons/in² Depth and thickness of girder at centre 8 3/8" x 15 1/16" (Double plates) Length as per Rule 31 1/2" 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/in² 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 7/8" 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/in²

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 Tons/in² 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/in²

Diameter { At body of stay, 2 5/8" or 3" No. of threads per inch 6 Area supported by each stay 289 in²

Working pressure by Rules Approved Screw stays: Material Steel Tensile strength 26-30 Tons

Diameter { At turned off part, 1.43" or 1 7/8" No. of threads per inch 9 Area supported by each stay 109.375 in²

Working pressure by Rules *Approved*. Are the stays drilled at the outer ends *Lo.* 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 *seamless* External diameter { Plain *3 1/4"* Stay *3 1/4"* } Thickness { *8 WG* } 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 1/2' x 2 1/2' x 1 1/8"* 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
 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 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
 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,
THE LYTHAM SHIPBUILDING and ENGINEERING COMPANY LIMITED Manufacturer.

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

See Mehry 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. *"FRESHPOOL" (Ser. Ref. 119768)*

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 material + workmanship are sound + 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. 300 - 180 lbs/sq in.

Survey Fee ... *Included on the Machinery Report* When applied for, 10
 Travelling Expenses (if any) When received, 10

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

Committee's Minute

LIVERPOOL 23 NOV 1943

Assigned

Transmit to London.



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