

REPORT ON BOILERS.

No. 121446

Received at London Office.

Date of writing Report 22-7-1944 When handed in at Local Office 1944 Port of LIVERPOOL

No. in Reg. Book 1 Survey held at Sytham & Preston Date, First Survey 11/12/42 Last Survey 17/7/44

on the steel screw "FRESHFORD" (Number of Visits 71) Tons Gross 882.91
Net 92.82

Master Sytham Built at Sytham By whom built Sytham & B. & Co. Ltd. Yard No. 845 When built 1944

Engines made at Sytham By whom made Sytham & B. & Co. Ltd. Engine No. 554 When made 1944

Boilers made at Sytham By whom made - do - Boiler No. 553 When made 1944

Nominal Horse Power 90 Owners The Admiralty Port belonging to London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Shell-Steel Co. of Scotland, ENDS: Colvile & INTERMARINE Construction Co. Ltd. Letter for Record 58 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-ended multitubular cylindrical (skated) type Working Pressure 180 lb./sq. in.

Tested by hydraulic pressure to 330 lb./sq. in. Date of test 22-3-44 No. of Certificate 2643 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. ft. 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 no

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated no

Largest internal dia. of boilers 10' 9 15/16" Length 10' 6" Shell plates: Material steel Tensile strength 29-32 tons/sq. in.

Thickness 1/32" Are the shell plates welded or flanged no Description of riveting: circ. seams end D.R.
inter 3 3/8"

Long. seams T.P. D.R.S. Diameter of rivet holes in circ. seams 1 3/32" Pitch of rivets 4 3/4"
long. seams 1 3/32"

Percentage of strength of circ. end seams plate 67% Percentage of strength of circ. intermediate seam plate 42.8%
rivets 85.8%

Percentage of strength of longitudinal joint plate 87.5% Working pressure of shell by Rules 182.2
combined 89.1%

Thickness of butt straps outer 25/32" No. and Description of Furnaces in each Boiler Leighton type (3) Stephen County Back End
inner 29/32"

Material steel Tensile strength 26-30 tons Smallest outside diameter 33 5/8"

Length of plain part top 7/16" Thickness of plates crown 7/16" Description of longitudinal joint Welded
bottom 7/16"

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules ✓

End plates in steam space: Material steel Tensile strength 26-30 tons/sq. in. Thickness 1/32" Pitch of stays 4 1/4" x 1 1/4"

How are stays secured Double luts Working pressure by Rules Approved

Tube plates: Material front steel Tensile strength 26-30 tons/sq. in. Thickness 25/32"
back steel

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 15/16" (Double Plate)

Length as per Rule 3 1/2" x 3" Distance apart 11" No. and pitch of stays in each Two at 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 9 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/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

Working pressure Approved Main stays: Material steel Tensile strength 28-32 tons/sq. in.

Diameter At body of stay 2 3/8" No. of threads per inch 6 Area supported by each stay 289 sq. in.
Over threads 3"

Working pressure by Rules Approved Screw stays: Material steel Tensile strength 26-30 tons/sq. in.

Diameter At turned off part 1 7/8" No. of threads per inch 9 Area supported by each stay 1048 106.5
Over threads 1 7/8"

Working pressure by Rules *Approved*. Are the stays drilled at the outer ends *Lo.* ✓ Margin stays: Diameter { At turned off part, *1.86"*
Over threads *2"* ✓
No. of threads per inch *9* ✓ Area supported by each stay *128.75 sq"* Working pressure by Rules *Approved*. ✓
Tubes: Material *Stambschitz* ✓ External diameter { Plain *3 1/4"* ✓ Thickness { *8 WG* ✓ No. of threads per inch *9* ✓
Stay *3 1/4"* ✓ 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 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 *✓*
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 - - *See Mch report* Are the approved plans of boiler and superheater forwarded herewith
while building { During erection on board vessel - - - *See Mch report* (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. *"Freshburn" Ser. Ref. No. 120956*

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:- 1 SB - F.D. - 3 C.F. - 180 lbs/sq"

Survey Fee *Included in the machinery report* : } When applied for, *19*.....
Travelling Expenses (if any) £ : } When received *19*.....

H. A. Hindley
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Transmit to London.

TUES. 22 AUG 1944

see minute on 26. Rpt.

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Foundation