

REPORT ON BOILERS.

No. 23234.

Received at London Office

20 FEB 1946

Date of writing Report 11th FEB. 1946. When handed in at Local Office 15th FEB. 1946. Port of GREENOCK.

No. in Survey held at GREENOCK.

Date, First Survey 28th JUNE 1945. Last Survey 30th JANUARY 1946.

By Book.

(Number of Visits

Gross 294.83.
Net 262.17.

on the

EMPIRE FRIEDA ST. SE. TUG

Built at PORT GLASGOW. By whom built FERGUSON BROS. LD.

Yard No. 377 When built 1946

Engines made at PORT GLASGOW. By whom made FERGUSON BROS. LD.

Engine No. 377 When made 1946

Boilers made at GREENOCK. By whom made RANKIN & BLACKMORE, LTD.

Boiler No. 50.93. When made 1945.

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY

Manufacturers of Steel COLVILLES LTD. GLASGOW. ✓

(Letter for Record (S) ✓

Total Heating Surface of Boilers 2400 sq. ft. ✓

Is forced draught fitted YES. ✓

Coal or Oil fired OIL. ✓

No. and Description of Boilers ONE. ✓

Working Pressure 200 lbs. sq. in. ✓

Tested by hydraulic pressure to 350 lbs. sq. in. ✓ Date of test 15.10.45 No. of Certificate 2407 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 2 COCKBURNS IMPROVED HIGH LIFT.

Area of each set of valves per boiler { per Rule 6.975 sq. ft. ✓ as fitted 7.932 sq. ft. ✓ Pressure to which they are adjusted 200 lbs. 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 4'-0" 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 14'-9 3/8" ✓ Length 11'-9" ✓ Shell plates: Material STEEL ✓ Tensile strength 29/33 T. ✓

Thickness 1 5/16" ✓ Are the shell plates welded or flanged NO. Description of riveting: circ. seams { end D.R.L.A.P. ✓ inter. ✓

long. seams T.R.D. BUTT STRAPS. Diameter of rivet holes in { circ. seams 1 5/16" ✓ { long. seams 1 5/16" ✓ Pitch of rivets { 3 3/4" ✓ 8 1/2" ✓

Percentage of strength of circ. end seams { plate 64.9 - { rivets 43.56. Percentage of strength of circ. intermediate seam { plate 84.5 - { rivets 90.1 ✓

Percentage of strength of longitudinal joint { plate 84.5 - { rivets 90.1 ✓ combined 87.0 -

Thickness of butt straps { outer 1" ✓ { inner 1 1/8" ✓ No. and Description of Furnaces in each Boiler 3 - DEIGHTON CORRUGATED SECTION. ✓

Material STEEL ✓ Tensile strength 26/30 TONS ✓ Smallest outside diameter 3'-7 1/4" ✓

Length of plain part { top ✓ { bottom ✓ Thickness of plates { crown 5/8" ✓ { bottom 5/8" ✓ Description of longitudinal joint WELDED. ✓

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

End plates in steam space: Material S. ✓ Tensile strength 26/30 TONS. ✓ Thickness 1 1/4" ✓ Pitch of stays 20" x 18" ✓

How are stays secured DOUBLE NUTS AND WASHERS

Tube plates: Material { front S. ✓ { back S. ✓ Tensile strength 26/30 TONS. ✓ Thickness 1 5/16" ✓ 7/8" ✓

Mean pitch of stay tubes in nests 8" x 7 1/8" Pitch across wide water spaces 13 1/2" ✓

Girders to combustion chamber tops: Material S. ✓ Tensile strength 26/30 TONS. ✓ Depth and thickness of girder

at centre 9 1/4" x 1 3/4" ✓ Length as per Rule 2'-10" ✓ Distance apart 10" ✓ No. and pitch of stays

in each 3 - 1 3/4" - 8" pitch ✓ Combustion chamber plates: Material S. ✓

Tensile strength 26/30 TONS. ✓ Thickness: Sides 23/32" ✓ Back 1 1/16" ✓ Top 23/32" ✓ Bottom 23/32" ✓

Pitch of stays to ditto: Sides 9 1/2" x 8" ✓ Back 9 1/2" x 8 1/2" ✓ Top 8" x 9" ✓ Are stays fitted with nuts or riveted over NUTS ✓

Front plate at bottom: Material S. ✓ Tensile strength 26/30 TONS. ✓ Thickness 1 5/16" ✓ Lower back plate: Material S. ✓ Tensile strength 26/30 TONS. ✓ Thickness 7/8" ✓

Pitch of stays at wide water space 13 1/2" ✓ Are stays fitted with nuts or riveted over NUTS ✓

Main stays: Material S. ✓ Tensile strength 28/32 TONS. ✓

Diameter { At body of stay, 3 1/4" ✓ { Over threads S. ✓ No. of threads per inch 6 ✓

Screw stays: Material S. ✓ Tensile strength 26/30 TONS. ✓

Diameter { At turned off part, 1 3/4" ✓ { Over threads S. ✓ No. of threads per inch 9 ✓

Are the stays drilled at the outer ends NO. ✓ Margin stays: Diameter { At turned off part, or Over threads 1 7/8" ✓
No. of threads per inch 9. ✓
Tubes: Material W.T. 3. ✓ External diameter { Plain 2 1/2" ✓ Thickness { 9. W.G. ✓ No. of threads per inch 9. ✓
Pitch of tubes 4" x 3 1/16" ✓
shell plate 1/6" x 12" ✓ Section of compensating ring 2 1/3" x 2 1/10" x 1 5/16" ✓ No. of rivets and diameter of rivet holes 28 - 1 5/16" ✓
Outer row rivet pitch at ends 8 1/2" ✓ Depth of flange if manhole flanged _____
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 on 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,
FOR RANKIN & BLACKMORE LTD.
Manufacturers.
Managing Director.

Dates of Survey { During progress of work in shops - - - (1945) JUNE 28. SEPT. 4. 18. 25. OCT. 15. Are the approved plans of boiler and superheater forwarded herewith 3-4-45.
while building { During erection on board vessel - - - Total No. of visits _____
(If not state date of approval.)

Is this Boiler a duplicate of a previous case _____ If so, state Vessel's name and Report No. _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey in accordance with the Rules and the approved plans. The materials and workmanships are good.

This boiler has been successfully installed in the vessel & its safety valves adjusted under steam for a working pressure of 200 lbs./sq"

Charles G. Hunter

Survey Fee +25% £ 19 : 5 : 0 When applied for, 12th FEB 1946.
Travelling Expenses (if any) £ _____ : _____ : _____ When received, 19

M. Caldwell for Self and O. J. Truchmann
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 19 FEB 1946

Assigned SEE ACCOMPANYING MACHINERY REPORT



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Foundation