

# REPORT ON BOILERS.

No. 18578.

Received at London Office. 6 SEP 1948

of writing Report. 2nd Sept. 48. When handed in at Local Office. 4th Sept. 48. Port of. MIDDLESBROUGH.

Survey held at. MIDDLESBROUGH. Date, First Survey. 5th Dec. 1947. Last Survey. 3rd Aug. 1948.

on the "BRITISH LIBERTY" (Number of Visits. 4.) Gross. 8589 Tons Net. 1952

ster Built at. Sunderland By whom built. Wm. Doxford & Sons. Yard No. 765 When built. 1949

and diameters made at. Sunderland. By whom made. Wm. Doxford & Sons. Engine No. 765 When made. 1949

lers made at. Stockton-on-Tees. By whom made. Stockton C.E. & R.B. Ltd. Boiler No. 7051 When made. 1949.

holes and nominal Horse Power. Owners. British Tanker Co Port belonging to. London

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

Manufacturers of Steel. Appleby Frodingham Steel Co. Ltd. (Letter for Record. S)

al Heating Surface of Boilers. 2020 sq. ft. Is forced draught fitted. Yes Coal or Oil fired. Oil or Exh. Gas.

and Description of Boilers. 1 S.E. Multitubular Working Pressure. 150 lbs per sq. in.

ed by hydraulic pressure to. 275 lbs Date of test. 31.8.48. No. of Certificate. 7250 Can each boiler be worked separately. -

a of Firegrate in each Boiler. No. and Description of safety valves to each boiler. 3" double high lift. ✓

a of each set of valves per boiler. per Rule. 14.12 as fitted. 15.4 ✓ Pressure to which they are adjusted. 150 Are they fitted with easing gear. Yes.

ase of donkey boilers, state whether steam from main boilers can enter the donkey boiler. -

Best distance between boilers or uptakes and bunkers or woodwork. Is oil fuel carried in the double bottom under boiler. -

Best distance between shell of boiler and tank top plating. Is the bottom of the boiler insulated. Yes.

h 9.2.4 test internal dia. of boilers. 12' 10.3/16" Length. 11' 6" ✓ Shell plates: Material. Steel Tensile strength. 29-33 ✓

knness. 29/32" ✓ Are the shell plates welded or flanged. - Description of riveting: circ. seams { end. DR. Lap inter. -

seams. TR. DBS Diameter of rivet holes in { circ. seams. 1.1/16" ✓ long. seams. 1.1/16" ✓ Pitch of rivets { 3.187 ✓ 7.1/16" ✓

centage of strength of circ. end seams { plate. 66.6% rivets. 48.7 ✓ Percentage of strength of circ. intermediate seam { plate. - rivets. -

centage of strength of longitudinal joint { plate. 84.9 rivets. 103 ✓ Working pressure of shell by Rules. 157 lbs

knness of butt straps { outer. 23/32" ✓ inner. 27/32" ✓ No. and Description of Furnaces in each Boiler. 2 Deighton Corrugated. ✓

erial. Steel Tensile strength. 26-30 ✓ Smallest outside diameter. 3' 10" ✓

th of plain part { top. - bottom. - Thickness of plates { crown. 1/2" ✓ bottom. - Description of longitudinal joint. Welded ✓

ensions of stiffening rings on furnace or c.c. bottom. Working pressure of furnace by Rules. 156 lbs

plates in steam space: Material. Steel Tensile strength. 26-30 ✓ Thickness. 1" ✓ Pitch of stays. 18" x 17" ✓

are stays secured. Double nuts and washers screwed into both plates. Working pressure by Rules. 150 lbs

plates: Material { front. steel back. steel Tensile strength { 26.30 ✓ Thickness { 7/8" ✓ 3/4" ✓

pitch of stay tubes in nests. 9.3/8" ✓ Pitch across wide water spaces. 13 1/2" ✓ Working pressure { front. 159 lbs back. 180 lbs

ers to combustion chamber tops: Material. Steel Tensile strength. 28.32 ✓ Depth and thickness of girder

ntre. 7" - 2 @ 5/8" ✓ Length as per Rule. 2' 4" ✓ Distance apart. 9" ✓ No. and pitch of stays

ch. 2 @ 9" ✓ Working pressure by Rules. 152 lbs Combustion chamber plates: Material. Steel

le strength. 26-30 ✓ Thickness: Sides. 21/32" ✓ Back. 19/32" ✓ Top. 21/32" ✓ Bottom. 21/32" ✓

of stays to ditto: Sides. 10" x 9" ✓ Back. 9 1/2" x 8 1/2" ✓ Top. 9" x 9" ✓ Are stays fitted with nuts or riveted over. nuts ✓

ing pressure by Rules. 152 lbs Front plate at bottom: Material. Steel Tensile strength. 26.30 ✓

ness. 7/8" ✓ Lower back plate: Material. Steel Tensile strength. 26.30 ✓ Thickness. 3/4" ✓

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

ing pressure. 160 lbs Main stays: Material. Steel Tensile strength. 28.32 ✓

er of Ship { At body of stay. 2 5/8" ✓ No. of threads per inch. 6 ✓ Area supported by each stay. 306 sq. in. { Over threads. 1 1/2" ✓

ing pressure by Rules. 180 lbs Screw stays: Material. Steel Tensile strength. 28.32 ✓

ter { At turned off part. 1 1/2" ✓ No. of threads per inch. 9 ✓ Area supported by each stay. 81 sq. in. { Over threads. 1 1/2" ✓



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Working pressure by Rules 155 lbs Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, 1 3/8" ✓  
or Over threads. 1 3/8" ✓  
No. of threads per inch 9 ✓ Area supported by each stay 103.1 sq.in. Working pressure by Rules 176 lbs  
Tubes: Material Seamless Steel External diameter { Plain 2 1/8" ✓ Thickness { 10 S.W.G. ✓ No. of threads per inch 9 ✓  
Stay 2 1/8" ✓  
Pitch of tubes 3 1/2" x 3 1/2" ✓ Working pressure by Rules Main 175 lbs Stay 218 lb Manhole compensation: Size of open  
shell plate 21" x 17" ✓ Section of compensating ring 8 1/2" x 1 1/2" ✓ No. of rivets and diameter of rivet holes 52 - 1.1/16"  
Outer row rivet pitch at ends 7.1/16" ✓ Depth of flange if manhole flanged - ✓ Steam Dome: Material None  
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 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 from the boiler -  
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 -  
Rules - Pressure to which the safety valves are adjusted - Hydraulic test pressure -  
tubes - forgings and castings - and after assembly in place - Are drain 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 -  
The foregoing is a correct description, H. G. H. H. Manufactured 9.2.

Dates of Survey { During progress of work in shops - - - 1947. Dec. 5. 1948. Jan. 20. July 23. Are the approved plans of boiler and superheater forwarded herewith 9.2.  
while building { During erection on board vessel - - - Aug. 31. (If not state date of approval.)  
Total No. of visits 4.

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 constructed under Special Survey and in accordance with the Rule Requiring and approved plan.

The materials and workmanship are good, and on completion the boiler was hydraulically tested at 275 lbs per sq.in. and found satisfactory.

This boiler is being forwarded to Sunderland for Wm. Doxford's Contract No. 765.

This boiler has been securely fixed on board the vessel  
& Safety valves adjusted under steam to working pressure

For recommendation please see Machinery Rpt.

H. G. H. H.

Survey Fee £ 33 : 12 : 0  
Travelling Expenses (if any) £ : :

When applied for 4.2. 19 48.  
When received - 19 -

E. Roman Stuart.  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute -

Assigned -

In minute see J.E. Rpt.

FRI, 3 JUN 1949



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