

# REPORT ON DONKEY BOILERS.

No. 104392

20 APR 1947

Received at London Office 25 APR 1947

Date of writing Report 19... When handed in at Local Office 19... Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. Survey held at Wallsend. Date, First Survey 27<sup>th</sup> JANUARY 1947 Last Survey 28<sup>th</sup> MARCH 1947

on the M/V "BRITISH ISLES." (Number of Visits 10) Tons Gross Net

Master Built at Haverton Hill on Tyne By whom built Furness S.B. Co. Yard No. 394 When built

Engines made at Sunderland. By whom made Wm. Doxford &amp; Sons Ltd. Engine No. 259 When made 1947

Boilers made at Wallsend By whom made N.E. Mar. Eng. Co. (1938) Ltd. Boiler No. R-W 2769 When made 1947

Nominal Horse Power  $\frac{4004}{15} = 267$  Owners British Tanker Co Ltd Port belonging to London.MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel Colvilles Ltd. &amp; Steel Company of Scotland. (Letter for Record S.)

Total Heating Surface of Boilers 4004 sq ft. Is forced draught fitted Yes Coal or Oil fired oil fired

No. and Description of Boilers 2 Single Ended Working Pressure 150 LBS/sq in

Tested by hydraulic pressure to 275 lb Date of test 24-3-47 No. of Certificate 1241, 1242 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2 of 2 1/2" Imp'd High Lift.

Area of each set of valves per boiler per Rule 7.66 sq in as fitted 9.8 Pressure to which they are adjusted Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no main boiler.

Smallest distance between boilers or uptakes and bunkers or woodwork 6'-0" Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating Fitted a platform above tank Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 12'-10 3/16" Length 11'-6" Shell plates: Material Stl Tensile strength 29 to 33 tons

Thickness 29/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams end Dble riv. inter NIL

Long. seams T.R. Dble butt straps Diameter of rivet holes in circ. seams 1 1/8" long. seams 1 1/16" Pitch of rivets 3 1/2"

Percentage of strength of circ. end seams plate 65.5 rivets 53.4 Percentage of strength of circ. intermediate seam plate NIL rivets NIL

Percentage of strength of longitudinal joint plate 84.8 rivets 103.8 combined 90.5 Working pressure of shell by Rules 156.7 lb.

Thickness of butt straps outer 3/4" inner 7/8" No. and Description of Furnaces in each Boiler 2 C.f. (Deighton type).

Material Stl Tensile strength 26-30 tons Smallest outside diameter 3'-8 3/16"

Length of plain part top bottom Thickness of plates crown 15/32 bottom Description of longitudinal joint fire weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 150.3 lb.

End plates in steam space: Material Stl Tensile strength 26-30 tons Thickness 1 3/8" Pitch of stays 30" x 16"

How are stays secured Nutted inside + outside Working pressure by Rules 153.6 lb.

Tube plates: Material front 5 back 5 Tensile strength 26 to 30 tons Thickness front 27/32 back 3/4"

Can pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 14 1/2" Working pressure front 182 lb back 227 lb

Girders to combustion chamber tops: Material Stl Tensile strength 29 to 33 tons Depth and thickness of girder

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

each 2 at 10 3/4" Working pressure by Rules 175.8 lb. Combustion chamber plates: Material Stl

Tensile strength 26 to 30 tons Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 10 3/4 x 7 1/2 Back 10 3/4 x 7 1/2 Top 10 3/4 x 10 3/4 Are stays fitted with nuts or riveted over marginal + top plate are nutted.

Working pressure by Rules 154 lb min. Front plate at bottom: Material Stl Tensile strength 26 to 30 tons

Thickness 27/32" Lower back plate: Material Stl Tensile strength 26-30 tons Thickness 13/16"

Pitch of stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over marginal are nutted. Remainder are RIVETED OVER

Working pressure 201 lb Main stays: Material Stl Tensile strength 28-32 tons

Pitch of stays at body of stay 3" No. of threads per inch 6 Area supported by each stay 480 sq in

Pitch of stays over threads 3 1/4" Screw stays: Material Stl Tensile strength 26-30 tons

Working pressure by Rules 163.5 lb No. of threads per inch 9 Area supported by each stay 80.6 sq in

Pitch of stays at turned off part 1 1/2" CONTR OVER



Working pressure by Rules 155.7 lb. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 5/8" & 1 3/4"  
or Over threads. 158 & 134  
No. of threads per inch 9. Area supported by each stay 94.7 sq ins Working pressure by Rules 160.2 lb.  
Tubes: Material S.D. Steel External diameter { Plain 2 1/2" Thickness { 10.49 No. of threads per inch 9.  
Stay 2 1/2" 5/16" 3/8"  
Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 217 lb. Manhole compensation: Size of opening in  
shell plate \_\_\_\_\_ Section of compensating ring \_\_\_\_\_ No. of rivets and diameter of rivet holes \_\_\_\_\_  
Outer row rivet pitch at ends \_\_\_\_\_ Depth of flange if manhole flanged \_\_\_\_\_ 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 NIL

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 THE NORTH-EASTERN MARINE ENGINEERING CO. (1933) LTD.

The foregoing is a correct description,

Director

Manufacturer.

Dates of Survey while building { During progress of work in shops - - - (1947) JAN. 27 FEB. 17, 20, MAR. 7, 11, 12, 19, 20. Are the approved plans of boiler and superheater forwarded herewith Yes  
During erection on board vessel - - - 24, 28. (If not state date of approval.) (appx 28-12-45).  
Total No. of visits 10

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. Nuc. Rpt 103881  
Boiler R-NN 2764 for Furness S & Co No 390.

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

These Donkey Boilers have been constructed under special survey  
in accordance with the approved plan and the Society's Rules.  
The materials and workmanship are good.  
The Boilers have been sent to Furness S & Co's Yard, Haverton Hill to be  
fitted on board.

These boilers have been securely fitted on board & examined under working conditions  
& found satisfactory. On completion the SV's were adjusted under steam to 152 lb/sq.  
Thickness of adjusting washers Pat. Bl. Stan Bl.  
P. 23/64 S. 23/64 P. 25/64 S. 2/8

L. Norman Stuart

Survey Fee ... £ 25: 17: 0 } When applied for, 11/4 APR 1947  
Travelling Expenses (if any) £ : : } When received ..... 19.....

A. Watt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 10 OCT 1947

Assigned See F.E. mch. rpt



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Foundation