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 Scrap on mfg.  
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 e Cam rod  
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 Complete.  
 11. 1 Dec. pad  
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 40. 40.  
 22. 26. 27. 28. 29  
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 3/12/45.  
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Ed. No. 34589  
 No. 18127

# REPORT ON BOILERS.

Rpt. 5a.

Received at London Office 27 AUG 1946  
 5 DEC 1946

Date of writing Report 21/8/ 19 46. When handed in at Local Office 26/8/ 19 46. Port of MIDDLESBROUGH.

No. in Survey held at Stockton-on-Tees. Date, First Survey 14th Nov. 1945, Last Survey 15th Aug. 19 46.  
 Reg. Book. (Number of Visits 25.) Gross 6095 Tons Net 3329

on the "BRITISH ENTERPRISE"  
 Built at Sunderland By whom built Wm. Doxford & Sons Ltd. Yard No. 738 When built 1946  
 Engines made at Sunderland. By whom made Wm. Doxford & Sons Ltd. Engine No. 738 When made 1946  
 Boilers made at Stockton-on-Tees. By whom made Stockton Chemical Engineers & Riley Boilers Ltd. Boiler No. 6933 When made 1946  
 Nominal Horse Power Owners British Landers Co Ltd Port belonging to London.

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

Manufacturers of Steel Appleby Frodingham Steel Co. Ltd. (Letter for Record S)  
 Total Heating Surface of Boilers 2020 sq. ft. Is forced draught fitted No. Coal or Oil fired Oil & G.L. Gas  
 No. and Description of Boilers 1 S.E. Multitubular. Working Pressure 150 lbs/sq. in.

Tested by hydraulic pressure to 275 lbs. Date of test 15/8/46. No. of Certificate 7185 Can each boiler be worked separately  
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 3" double high lift.  
 Area of each set of valves per boiler {per Rule 14.12 15.3 for ordinary valves. Pressure to which they are adjusted 150 Are they fitted with easing gear No.  
 as fitted 15.4

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 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 12'-10.3/16" Length 11'-6" Shell plates: Material Steel Tensile strength 29-33  
 Thickness 29/32" Are the shell plates welded or flanged Description of riveting: circ. seams {end DR. Lap. inner -  
 long. seams TR.DBS. Diameter of rivet holes in {circ. seams 1.1/16" Pitch of rivets {3.187  
 {long. seams 1.1/16" {7.1/16"  
 Percentage of strength of circ. end seams {plate 66.6% Percentage of strength of circ. intermediate seam {plate -  
 {rivets 48.7 {rivets -  
 Percentage of strength of longitudinal joint {plate 84.9  
 {rivets 103  
 {combined

Thickness of butt straps {outer 23/32" No. and Description of Furnaces in each Boiler 2 Deighton Corrugated.  
 {inner 27/32" Material Steel Tensile strength 26.30 Smallest outside diameter 3'-10"  
 Length of plain part {top Thickness of plates {crown 1/2" Description of longitudinal joint welded.  
 {bottom 1/2"

Dimensions of stiffening rings on furnace or c.c. bottom  
 End plates in steam space: Material Steel Tensile strength 26-30 Thickness 1" Pitch of stays 18" x 17"  
 How are stays secured Double nuts and washers screwed into both plates  
 Tube plates: Material {front Steel Tensile strength 26.30 Thickness {2" 3/4"  
 {back

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 13 1/2"  
 Girders to combustion chamber tops: Material Steel Tensile strength 28.32 Depth and thickness of girder  
 at centre 7" - 2 @ 5/8" Length as per Rule 2'-3 1/2" Distance apart 9" No. and pitch of stays  
 in each 2 @ 9" Combustion chamber plates: Material Steel  
 Tensile strength 26-30 Thickness: Sides 21/32" Back 19/32" Top 21/32" Bottom 21/32"

Pitch 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  
 Front plate at bottom: Material Steel Tensile strength 26-30  
 Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 Thickness 3/4"

Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over Nuts  
 Main stays: Material Steel Tensile strength 28.32  
 Diameter {At body of stay, No. of threads per inch 6  
 {Over threads 2 3/4"

Screw stays: Material Steel Tensile strength 26-30  
 Diameter {At turned off part, No. of threads per inch 9  
 {Over threads 1 1/2"

AUG 1946

D.O.

Date of writing Report

No. in Reg. Book. Survey held

on the

Built at *Sunderland*

Engines made at *Sunderland*

Boilers made at *Sunderland*

Nominal Horse Power

MULTITUBULAR

Manufacturers of S

Total Heating Surface

No. and Description

Tested by hydraulic

Area of Firegrate

Area of each set of

In case of donkey boiler

Smallest distance between

Smallest distance between

Largest internal diameter

Thickness 29

long seams

Percentage of strength

Percentage of strength

Thickness of butt

Material

Length of plain

Dimensions of stiff

End plates in steam

How are stays secured

Tube plates: Material

Mean pitch of stays

Girders to combustion

at centre 7"

in each 2

Tensile strength

Pitch of stays to drum

Front plate at

Thickness

Pitch of stays at

Main stays: Material

Diameter

Screw stays: Material

Diameter

Are the stays drilled at the outer ends  No. Margin stays: Diameter { At turned off part, or Over threads *1 3/4"* }

No. of threads per inch *9*

Tubes: Material *Seamless Steel* External diameter { Plain *2 1/2"* Stay *2 1/2"* } Thickness { *10SW.G* *5/16"* } No. of threads per inch *9*

Pitch of tubes *3 3/4" x 3 3/4"* Manhole compensation: Size of opening in shell plate *21" x 17"* Section of compensating ring *8 3/4" x 1.1/8"* 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 *1 1/2"* 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 \_\_\_\_\_ 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 \_\_\_\_\_ } Internal diameter and thickness of tubes \_\_\_\_\_

Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ 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 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 \_\_\_\_\_

for and on behalf of *ROBERTSON CHEMICAL ENGINEERS & RILEY BOILERS LTD.*  
The foregoing is a correct description, \_\_\_\_\_ Manufacturer.

Dates of Survey { During progress of work in shops - - } *1945. Nov. 14, 23, 29, Dec. 14, 20, 28, 1946. Jan. 11, 16*  
 { During erection on board vessel - - - } *Feb. 7, 14, 28, Mar. 7, 29, Apr. 26, May 10, 20, 30, June 4, 13, July 2, 8, 15, 23, Aug. 7, 15.*  
 Are the approved plans of boiler and superheater forwarded herewith *9/2/45.*  
 (If not state date of approval.)  
 Total No. of visits *25.*

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 Requirements and approved plan. The materials and workmanship are good, and on completion the boiler was hydraulically tested to 275 lbs. per sq. inch and found satisfactory. This boiler is being forwarded to Sunderland for Wm. Doxford's Contract No. 738.*

*This boiler has been securely fixed on board the vessel & the safety valves adjusted to working pressure as above. In recommendation please see Messrs. Rpt. No. 1234.*

*W. H. Brown.*

Survey Fee ... .. £ *20 : 5 : 0* When applied for, *26/8/46*  
 Travelling Expenses (if any) £ : : When received, 19

*L. Norman Stuart*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 20 DEC 1946*  
 Assigned *See F.E. Mch. rpt.*

