



## REPORT ON BOILERS.

No. 19146

Received at London Office 26 AUG 1950

Date of writing Report 21/8/50 When heard at Local Office 25/8/50 Port of MIDDLESBROUGH  
No. in Survey held at Stockton-on-Tees Date First Survey 26th May, Last Survey 17th August, 50.  
Ref. Book "BRITISH DIPLOMAT" Number of Visits 5  
on the Sunderland By whom built Wm. Doxford & Sons. No. 781  
Engines made at Sunderland By whom made Wm. Doxford & Sons. Engine No. 781 When made 1950.  
Boilers made at Stockton-on-Tees By whom made Stockton Chemical Engineers & Riley Boilers Ltd. Boiler No. 7193 When made 1950  
Owners British Tanker Co. Ltd. Port belonging to London.

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

Manufacturers of Steel Steel Co. of Scotland. (Letter for Record S)  
Appleby-Frodingham Steel Co. Ltd.  
Total Heating Surface of Boilers 2020 sq. ft. Is forced draught fitted Yes Cool or Oil fired Oil & Ex. Gas  
No. and Description of Boilers 1 S.E. Multitubular Working Pressure 150 lbs per sq. inch.  
Tested by hydraulic pressure to 275 lbs Date of test 17.8.50 No. of Certificate 7309 Can each boiler be worked separately  
Area of firegrate in each boiler 14.12 No. and Description of safety valves to each boiler 3" double high lift.  
Area of each set of valves per boiler 15.4 Pressure to which they are adjusted 150 lb. Are they fitted with casing gear  
In case of donkey boilers state whether steam from main boilers can enter the donkey boiler  
Smallest distance between boilers or uprights and bunkers or woodwork Is oil fuel carried in the double bottom under boilers  
Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated  
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 No Description of riveting: circ. seams DR. Lap  
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 Working pressure of shell by Rules 157 lbs  
{ 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 Thickness of plates { bottom 1/2" Working pressure of furnace by Rules 156 lbs  
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. Working pressure by Rules 150 lbs  
Tube plates: Material { front steel Tensile strength 26.30 Thickness { 7/8"  
{ back 3/4"  
Pitch of stay tubes in nests 9.3/8" Pitch across wide water spaces 13 1/2" Working pressure { front 158 lbs  
{ back 155 lbs  
Girders to combustion chamber tops: Material Steel Tensile strength 28.32 See 17/30 Depth and thickness of girder  
at centre 7 1/2" - 1 1/2" Length as per Rule 2'4" Distance apart 9" No. and pitch of stays  
in each Welded Working pressure by Rules 174 lbs 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 1/4" Top 9" x 9" Are stays fitted with nuts or riveted over nuts  
Working pressure by Rules 152 lbs 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  
Working pressure 150 lbs Main stays: Material Steel Tensile strength 28.32  
Diameter { At body of stay 2 3/4" No. of threads per inch 6 Area supported by each stay 306.3 sq. in.  
{ Over threads 2 3/4"  
Working pressure by Rules 180 lbs Screw stays: Material Steel Tensile strength 26.30  
Diameter { At twisted off part 1 1/2" No. of threads per inch 9 Area supported by each stay 78.5  
{ Over threads 1 1/2"



Working pressure by Rules 160 lbs Are the stays drilled at the outer ends No Main stays: Diameter { At turned off part, 1 3/8" or Over threads 1 3/8" } 15/8

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 1/2" Stay 2 1/2" } Thickness 10 S.W.G. No. of threads per inch 9

Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules Main 175 lbs Stay 142 lbs 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 None Steam Dome: Material None

Tensile strength 167 Thickness of shell 10 S.W.G. Description of longitudinal joint None

Diameter of rivet holes 1/8" Pitch of rivets 2 1/2" Percentage of strength of joint { Plate 100 Rivets 100 }

Internal diameter 16 1/2" Working pressure by Rules 175 lbs Thickness of crown 10 S.W.G. No. and diameter of stays 12 - 1 1/2"

How connected to shell None Size of doubling plate under dome None Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell None

Type of Superheater None Manufacturers of { Tubes None Steel forgings None Steel castings None }

Number of elements None Material of tubes None Internal diameter and thickness of tubes None

Material of headers None Tensile strength None Thickness None Can the superheater be shut off and the boiler be worked separately None Is a safety valve fitted to every part of the superheater which can be shut off from the boiler None

Area of each safety valve None Are the safety valves fitted with easing gear None Working pressure as per Rules None Pressure to which the safety valves are adjusted None Hydraulic test pressure: tubes None forgings and castings None and after assembly in place None Are drain cocks or valves fitted to free the superheater from water where necessary None

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

For and on behalf of

STOCKTON CHEMICAL ENGINEERS & RILEY BOILERS LTD.

The foregoing is a correct description,

*A. H. Riley*

Manufacturer.

DIRECTOR

Dates of Survey { During progress of work in shops 1950. May 26 July 11.21.26 Are the approved plans of boiler and superheater forwarded herewith 1.12.48. (If not state date of approval.) }  
 { While building Aug. 17 }  
 Total No. of visits 5

Is this Boiler a duplicate of a previous case No If so, state Vessel's name and Report No. None

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

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. 781.

*This boiler has been carefully fitted on board the vessel & safety valves adjusted under steam to working pressure as above*

*For recommendation please see heading Rpt.*

*A. H. Riley*

Survey Fee £ 33 : 13 : 0 When applied for 25/8/1950  
 Travelling Expenses (if any) £ : :  When received 19/11/50

*L. W. Stewart*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See F.E. Welch. rpt.



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