

REPORT ON BOILERS.

Sld. No. 32139
Mob. No. 15999

Received at London Office MAY 18 1937

When handed in at Local Office 13.5.1937 Port of MIDDLESBROUGH.

Survey held at STOCKTON. Date, First Survey 8 Dec/36 Last Survey 7 May 1937

on the "BIDDLESTONE" (Number of Visits 22) Tons {Gross 4910 Net 2953

Built at Sunderland By whom built Short Bros Ltd Yard No. 450 When built 1934

Engines made at Newcastle By whom made White Marine Eng. Co. Engine No. 110. When made 1934

Boilers made at Stockton By whom made Stockton Chem. Eng'g & Riley, Bldg Co. Boiler No. 6245/6. When made 1937.

Original Horse Power Owners The White Shipping Co. Ltd. Port belonging to Newcastle.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 3450 sq. ft. Is forced draught fitted Yes. Coal or Oil fired coal.

No. and Description of Boilers 2 S.B. Working Pressure 240 lbs.

Tested by hydraulic pressure to 410 lbs. Date of test 6245-23.4.37. No. of Certificate 6245-6912. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 40 sq. ft. No. and Description of safety valves to each boiler Two Improved High Lift (backburn) Yes.

Area of each set of valves per boiler {per Rule 4.22 0" as fitted 4.8 0" Pressure to which they are adjusted 240 Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 13'-0" Length 11'-6" Shell plates: Material steel Tensile strength 30/34. D.R.

Thickness 1 3/4" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end 3/8" inter. 3/8" long. seams 1 3/8" Pitch of rivets {plate 9 7/16" rivets 9 7/16"

Percentage of strength of circ. end seams {plate 64.5% rivets 44.3% Percentage of strength of circ. intermediate seam {plate 85.5% rivets 85.1% combined 87.9% Working pressure of shell by Rules 244 lbs.

Thickness of butt straps {outer 1 1/8" inner 1 1/8" No. and Description of Furnaces in each Boiler 3 cf. Tensile strength 26/30. Smallest outside diameter 3'-0 1/2"

Material steel Thickness of plates {crown 7/8" bottom 7/8" Description of longitudinal joint weld.

Length of plain part {top / bottom / Working pressure of furnace by Rules 251 lbs.

Dimensions of stiffening rings on furnace or c.c. bottom / Thickness 1 7/16" Pitch of stays 19" x 16"

End plates in steam space: Material steel Tensile strength 26/30. Working pressure by Rules 261 lbs.

How are stays secured D.N.s. Thickness {27" front 32" back Working pressure {308 lbs. front 282 lbs. back

Tube plates: Material {front steel back steel Tensile strength {26/30. Thickness {27" front 32" back Working pressure {308 lbs. front 282 lbs. back

Lean pitch of stay tubes in nests 8 1/2" Pitch across wide water spaces 14" x 3 5/8" 28/32. Depth and thickness of girder 28/32.

Stirrers to combustion chamber tops: Material steel Tensile strength 28/32. Distance apart 9' No. and pitch of stays 28/32.

Centre 10 1/2" x 3/4" (double) Length as per Rule 2'-11" Working pressure by Rules 240 lbs. Combustion chamber plates: Material steel

Each 3'-8 1/2" Tensile strength 26/30. Thickness: Sides 3/32 Back 11/16 Top 23/32 Bottom 7/8

Pitch of stays to ditto: Sides 9" x 8 1/2" Back 7 1/2" x 7 1/2" Top 9" x 8 1/2" Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 251 lbs. Front plate at bottom: Material steel Tensile strength 26/30.

Thickness 1 1/16" Lower back plate: Material steel Tensile strength 26/30. Thickness 1"

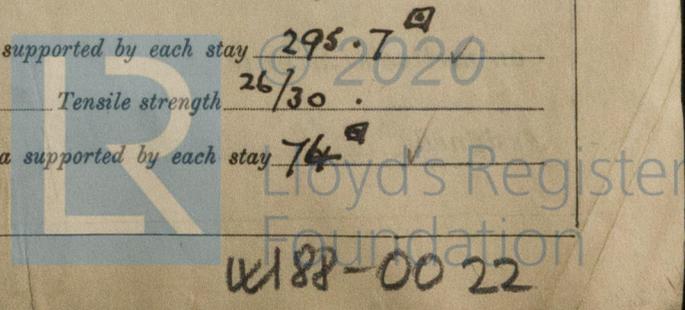
Pitch of stays at wide water space 14 1/2" x 7 1/2" Are stays fitted with nuts or riveted over nuts.

Working Pressure 310 lbs. Main stays: Material steel Tensile strength 28/32.

Diameter {At body of stay, 3 1/4" No. of threads per inch 6. Area supported by each stay 295.7

{Over threads / Working pressure by Rules 272 lbs. Screw stays: Material steel Tensile strength 26/30.

Diameter {At turned off part, 1 3/4" No. of threads per inch 9. Area supported by each stay 76



Working pressure by Rules 245 lbs. Are the stays drilled at the outer ends no, Margin stays: Diameter ^{At turned off part.} 1 7/8 or ^{Over threads} 1 7/8
 No. of threads per inch 9 Area supported by each stay 79.7 sq Working pressure by Rules 267 lbs.
 Tubes: Material lap welded iron External diameter ^{Plain} 2 1/2 to 2 3/4 Thickness ^{SWG.} 7/16 No. of threads per inch 9
^{Stay} 2 1/2 to 2 3/4 Working pressure by Rules p. 300 lbs. s. 276 lbs. Manhole compensation: Size of opening
 Pitch of tubes 3 3/4 x 3 3/8 shell plate 20 x 16 Section of compensating ring 10 x 1 3/8 No. of rivets and diameter of rivet holes 48 - 1 3/8
 Outer row rivet pitch at ends 9 7/16 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 girth 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 Sugden Manufacturers of The Superheater Co Ltd.
 Number of elements 24 Material of tubes Solid Drawn Steel Internal diameter and thickness of tubes 1 1/2 x 3/16
 Material of headers Steel Tensile strength (man.) _____ Thickness (man.) _____ Can the superheater be shut off the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes
 Area of each safety valve 30" Are the safety valves fitted with easing gear yes Working pressure as Rules 240 lbs/0" Pressure to which the safety valves are adjusted 240 lbs/0" Hydraulic test pressure 480 lbs/0"
 tubes 1000 lbs/0" castings 720 lbs/0" and after assembly in place 480 lbs/0" Are drain cocks or valves fitted to free the superheater from water where necessary yes
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes For and on behalf of Stockton Chemical Engineers & Filly Rollers Ltd.
 The foregoing is a correct description, W. W. Riley Manufacturer

Dates of Survey ^{During progress of work in shops - - -} 1937 Dec 16, 21, 28, 31, 1937 Jan 7, 13, 19, 22 Feb 3, 9, 17, 25 Mar 2, 10, 18, 19, 31 Apr 6, 14, 23, 25 May 7 Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)
^{while building} ^{During erection on board vessel - - -} _____ Total No. of visits _____

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The materials and workmanship are good.
These boilers have been built under special survey in accordance with the Rules and Approved Plan. They will be fitted aboard at Sunderland.
These boilers have now been securely fixed on board the vessel, examined under steam, safety valves of boilers & superheater adjusted to working pressure & accumulation test carried out satisfactorily.

In recommendation please see Insp. Rpt.
W. W. Riley

Survey Fee ... £ 23-0-0. When applied for, 14-8-1937
 Travelling Expenses (if any) £ _____ When received, 25-6-1937

M. M. A. & Co. Moffatt
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE 20 JUL 1937
 Assigned See Sla 32139

