

REPORT ON BOILERS.

No. 51550.

Received at London Office

23 MAR 1942

20 FEB 1942

Date of writing Report 16/2/42. When handed in at Local Office Port of HULL.

No. in Survey held at HULL. Date, First Survey 8. 9. 41. Last Survey 18. 3. 1942.

on the H.M.S. PORTSDOWN (Number of Visits 41.) Gross 511 Tons Net 167.

Built at BEVERLEY. By whom built Cook, Welton & Gemmell Ltd. Yard No. 685. When built
Engines made at HULL. By whom made Chas. D. Holmes Ltd. Engine No. 1601. When made
Boilers made at HULL. By whom made Chas. D. Holmes Ltd. Boiler No. 1593. When made
Nominal Horse Power 156. Owners THE ADMIRALTY. Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 2358 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Coal

No. and Description of Boilers One S.B. Working Pressure 220 lb./sq. in.

Tested by hydraulic pressure to 380 lb./sq. in. Date of test 5-1-42. No. of Certificate 4128. Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 63 1/4 sq. ft. No. and Description of safety valves to each boiler 2 Spring Loaded

Area of each set of valves per boiler (per Rule 15-2. 12.5) as fitted 16.6. Pressure to which they are adjusted 220 lb./sq. in. Are they fitted with easing gear Yes.

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 12". 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 15'-6" Length 11'-0" Shell plates: Material Steel Tensile strength 31-35 tons/sq. in. D.R. Lap.

Thickness 1 13/32". Are the shell plates welded or flanged No. Description of riveting: circ. seams (end 1 13/32" inter. 3 3/4") long. seams T.R. - D.B.S. Diameter of rivet holes in (circ. seams 1 13/32" long. seams 1 7/16") Pitch of rivets 9 3/8".

Percentage of strength of circ. end seams (plate 62.5% rivets 43-75%) Percentage of strength of circ. intermediate seam (plate 84.66% rivets 85.73% combined 86.47%)

Percentage of strength of longitudinal joint (plate 84.66% rivets 85.73% combined 86.47%)

Thickness of butt straps (outer 1 3/32" inner 1 7/32") No. and Description of Furnaces in each Boiler 3 of Deighton Section

Material Steel Tensile strength 26/30 tons/sq. in. Smallest outside diameter 3'-9 1/8"

Length of plain part (top bottom) Thickness of plates (crown 3 1/16" bottom 3 1/16") Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom None

End plates in steam space: Material Steel Tensile strength 26/30 tons/sq. in. Thickness 1 7/32". Pitch of stays 18 1/4" x 18 3/4".

How are stays secured Double nuts and washers.

Tube plates: Material (front back) Steel Tensile strength (26/30 tons/sq. in. 26/30 tons/sq. in.) Thickness (15/16" 29/32")

Mean pitch of stay tubes in nests 9 1/4" x 9". Pitch across wide water spaces 14 1/2" x 9".

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons/sq. in. Depth and thickness of girder

at centre 9 1/2" x 7 1/8" x double Length as per Rule 2'-9 13/32". Distance apart 9 1/4". No. and pitch of stays

in each 3 @ 7 1/8" Combustion chamber plates: Material Steel Tensile strength 26/30 tons/sq. in. Thickness: Sides 23/32". Back 1/16". Top 1/16". Bottom 15/16".

Pitch of stays to ditto: Sides 8 1/4" x 9 1/2". Back 8 1/4" x 9". Top 7 1/8" x 9 1/4". Are stays fitted with nuts or riveted over Nuts.

Front plate at bottom: Material Steel Tensile strength 26/30 tons/sq. in.

Thickness 15/16". Lower back plate: Material Steel Tensile strength 26/30 tons/sq. in. Thickness 29/32".

Pitch of stays at wide water space 14 1/2" x 9". Are stays fitted with nuts or riveted over Nuts.

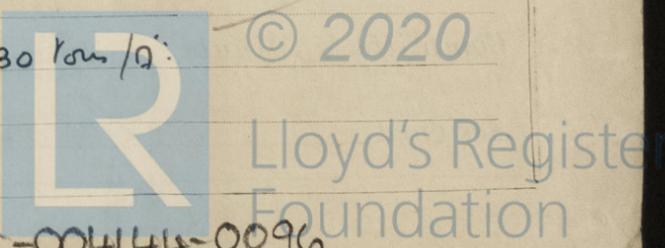
Main stays: Material Steel Tensile strength 28/32 tons/sq. in.

Diameter (At body of stay, or Over threads) 3 1/4". No. of threads per inch 8.

Screw stays: Material Steel Tensile strength 26/30 tons/sq. in.

Diameter (At turned off part, or Over threads) 1 3/4". No. of threads per inch 10.

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Are the stays drilled at the outer ends No. Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } - \\ \text{or } 1\frac{1}{8} \text{\"} 2 \text{\"} 2\frac{1}{8} \text{\"} \\ \text{Over threads } 1\frac{1}{8} \text{\"} 2 \text{\"} 2\frac{1}{8} \text{\"} \end{array} \right.$

No. of threads per inch 10

Tubes: Material L/W. Iron. External diameter $\left\{ \begin{array}{l} \text{Plain } 3\frac{1}{4} \text{\"} \\ \text{Stay } 3\frac{1}{4} \text{\"} \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 8 \text{ wg. } \\ 5\frac{1}{16} \text{\"} 3\frac{1}{8} \text{\"} 7\frac{1}{16} \text{\"} \end{array} \right.$ No. of threads per inch 9.

Pitch of tubes 4 $\frac{1}{2}$ " x 4 $\frac{5}{8}$ " Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 34 $\frac{5}{8}$ " x 1 $\frac{1}{32}$ " No. of rivets and diameter of rivet holes 59 @ 1 $\frac{1}{16}$ "

Outer row rivet pitch at ends 10 $\frac{3}{16}$ " Depth of flange if manhole flanged 3 $\frac{3}{8}$ " Steam Dome: Material Steel

Tensile strength 26/30 ton/10" Thickness of shell 3 $\frac{1}{4}$ " Description of longitudinal joint S.R. Lap.

Diameter of rivet holes 1 $\frac{1}{32}$ " Pitch of rivets 2 $\frac{1}{4}$ " Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate } 54\% \\ \text{Rivets } 43-8\% \end{array} \right.$

Internal diameter 2'-9" Thickness of crown 7 $\frac{1}{8}$ " No. and diameter of stays 2 @ 2 $\frac{3}{8}$ " Inner radius of crown Flar.

How connected to shell Riveted. Size of doubling plate under dome 4'-11 $\frac{1}{4}$ " x 1 $\frac{1}{32}$ " Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 1 $\frac{1}{16}$ " Dia. @ 4" Pitch. 10"

Type of Superheater None

Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right.$

Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____

Material of headers _____ Tensile strength _____ Thickness 47 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 HS of Sps. 960 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 Yes.

The foregoing is a correct description.
 FOR CHARLES D. HOLMES & CO., LTD.
W.R. Evans Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right.$ See machinery report.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. BIRDIE. Hull Rn. 51492.

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

This Boiler has been constructed under special survey in accordance with the approved Admiralty plans and the Rules.

The Workmanship and Materials are good and, when subjected to a hydraulic test of 380 lb/10" it was found satisfactory in every respect.

Survey Fee £ : : When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

J. P. ...
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 24 MAR 1942

Assigned See Hull Rn. 51550

