

REPORT ON BOILERS.

-1 JAN 1943

Received at London Office

Date of writing Report 19 When handed in at Local Office 14 Dec 1942 Port of SUNDERLAND.

No. in Reg. Book. Survey held at SUNDERLAND. Date, First Survey Last Survey Dec 8 1942

on the 8 1/2 THISTLEMUIR (Number of Visits) Gross 7237 Tons Net 4293

Built at Sunderland By whom built J.S. Thompson & Sons, Ltd. Yard No. 622 When built 1942

Engines made at do. By whom made N.E. Mar. Eng. Co. (1938), Ltd. Engine No. 4028 When made do.

Boilers made at do. By whom made do. Boiler No. do. When made do.

Nominal Horse Power 509 Owners Allan, Black & Co. Port belonging to Sunderland

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

Manufacturers of Steel Steel Co. of Scotland (Letter for Record S)

Total Heating Surface of Boilers 7248 sq ft Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers 3 S.E. Cylindrical Working Pressure 220 lb.

Tested by hydraulic pressure to 380 lb Date of test 7.9.42, 17.9.42, 23.10.42 No. of Certificate 4444, 4445, 4446 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 55 sq ft No. and Description of safety valves to each boiler 2. Imp. High Lift

Area of each set of valves per boiler (per Rule 6.5 sq in, as fitted 7.94 sq in) Pressure to which they are adjusted 220 lb. 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 2'-6" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-3" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 15'-0 1/16" Length 11'-8 1/32" Shell plates: Material Steel Tensile strength 29/33

Thickness 1 15/32" Are the shell plates welded or flanged no Description of riveting: circ. seams (end D.R.L., inter. —)

long. seams T.R.D.B.S. Diameter of rivet holes in (circ. seams } 1 1/2" Pitch of rivets (4 1/8" (long. seams } 10 3/8"

Percentage of strength of circ. end seams (plate 63.6, rivets 46.1) Percentage of strength of circ. intermediate seam (plate —, rivets —)

Percentage of strength of longitudinal joint (plate 85.5, rivets 86.2, combined 88.3)

Thickness of butt straps (outer 1 1/8", inner 1 1/4") No. and Description of Furnaces in each Boiler 3 Dighton: Stephen Farley neck

Material Steel Tensile strength 26/30 Smallest outside diameter 3'-9 3/4"

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

Dimensions of stiffening rings on furnace or c.c. bottom —

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 1 13/32" Pitch of stays 19 3/4" x 19 5/8"

How are stays secured double nuts

Tube plates: Material (front } Steel Tensile strength { } 26/30 Thickness { 15/16" (back } 25/32"

Mean pitch of stay tubes in nests 9 7/8" Pitch across wide water spaces 14" x 8 1/4"

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 Depth and thickness of girder at centre 10 1/2" x 13 3/8" Length as per Rule 31 1/2" Distance apart 9 1/4" No. and pitch of stays in each 3 2 8"

Combustion chamber plates: Material Steel Tensile strength 26/30 Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 7/8"

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

Front plate at bottom: Material Steel Tensile strength 26/30

Thickness 15/16" Lower back plate: Material Steel Tensile strength 26/30 Thickness 27/32"

Pitch of stays at wide water space 14" x 8" Are stays fitted with nuts or riveted over nuts fitted

Main stays: Material Steel Tensile strength 28/32

Diameter (At body of stay, 3 3/8" or Over threads 3 1/2" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26/30

Diameter (At turned off part, 1 3/4" or Over threads No. of threads per inch 9



Are the stays drilled at the outer ends no Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{7}{8}'' \\ \text{or} \\ \text{Over threads} \end{array} \right.$

No. of threads per inch 9

Tubes: Material Steel External diameter $\left\{ \begin{array}{l} \text{Plain } 3'' \\ \text{Stay } 3'' \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 8 \text{ W.G.} \\ 3/8'', 5/16'' \end{array} \right.$ No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in shell plate 16 x 12 Section of compensating ring — No. of rivets and diameter of rivet holes —

Outer row rivet pitch at ends — Depth of flange if manhole flanged 4 1/4" Steam Dome: Material —

Tensile strength — Thickness of shell — Description of longitudinal joint —

Diameter of rivet holes — Pitch of rivets — Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate } \text{—} \\ \text{Rivets } \text{—} \end{array} \right.$

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

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 —

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 yes

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.
The foregoing is a correct description,
J. R. Hume Manufacturer.
RESIDENT MANAGER

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right.$ Please see Rpt + 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 — If so, state Vessel's name and Report No. —

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

These boilers have been constructed under Special Survey in accordance with the approved plans, drawings letters and the requirements of the Rules. Workmanship and materials are good. For recommendations please see Rpt. A.

Survey Fee £ : : } When applied for, 19

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

L. R. Hume

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 8 JAN 1943

Assigned See Sld. 7E. 33568

