

REPORT ON BOILERS.

Received at London Office 11 MAY 1943

Date of writing Report 19 When handed in at Local Office 7 May 1943 Port of SUNDERLAND.

No. in Reg. Book. Survey held at SUNDERLAND. Date, First Survey Last Survey 5 May 1943

on the S.S. EMPIRE DEED (Number of Visits) Gross 6766 Tons Net 4639

Built at Sunderland. By whom built Bartrams & Sons, Ltd. Yard No. 295 When built 1943

Engines made at Glasgow By whom made Duncan Stewart & Co. Ltd. Engine No. 150 When made 1943

Boilers made at Sunderland. By whom made N.E. Mar. Eng. Co. (1938), Ltd. Boiler No. 4036 When made 1943

Nominal Horse Power 510 Owners Mungo, Campbell & Co. Ltd. Port belonging to Sunderland

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

Manufacturers of Steel Colvilles Ltd. (Letter for Record S)

Total Heating Surface of Boilers 4832 sq ft 7248 Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers 3 Cylindrical Single-ended Multitubular Working Pressure 220 lb.

Tested by hydraulic pressure to 380 lb. Date of test 15.2.43 No. of Certificate 4480 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 Impured High Lift

Area of each set of valves per boiler per Rule 6.515 sq in as fitted 7.952 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 24" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 24" 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 5/32" Are the shell plates welded or flanged no Description of riveting: circ. seams J.R.L.

long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams } 1 1/2" Pitch of rivets } 4 1/8" 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 Slighten. Stephan-gurley mks.

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" 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 1/32" Pitch of stays 19 3/4" x 19 5/8"

How are stays secured double into

Tube plates: Material front back } steel Tensile strength } 26/30 Thickness } 15/16" 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 1 3/8" Length as per Rule 3 1/2" Distance apart 9 1/4" No. and pitch of stays

in each 3 @ 8" Combustion chamber plates: Material steel

Tensile strength 26/30 Thickness: Sides 25/32" Back 25/32" Top 1 1/16" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/4" x 8" Back 9 7/8" x 9 3/4" 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 15/16"

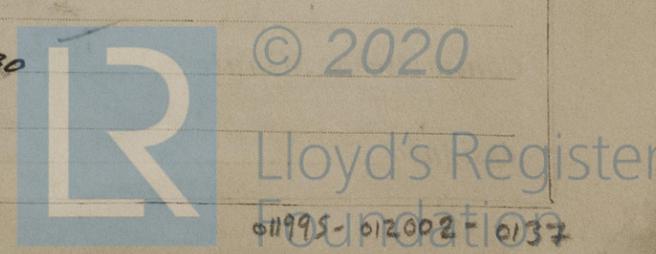
Pitch of stays at wide water space 14 1/8" x 9 7/8" Are stays fitted with nuts or riveted over nuts fitted

Main stays: Material steel Tensile strength 28/32

Diameter At body of stay 3 1/8" 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 7/8" Over threads No. of threads per inch 9



Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 2" or Over threads

No. of threads per inch 9

Tubes: Material Steel External diameter { Plain } 3" Thickness { S.W.G. } 5/16" + 3/8" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in End 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 { 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 Smoke tube Manufacturers of { Tubes } Stewart & Lloyd { Steel forgings } { Steel castings } Apply to Frothingham

Number of elements 177 Material of tubes S.D. Steel Internal diameter and thickness of tubes 15 1/4" 2 1/2"

Material of headers Forged steel Tensile strength 26/30 Thickness 1 1/8" Can the superheater be shut off and 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 3.14 sq" Are the safety valves fitted with easing gear yes

Pressure to which the safety valves are adjusted 225 lb. Hydraulic test pressure: tubes 1500 lb. forgings and castings 660 lb. and after assembly in place 500 lb. 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.

The foregoing is a correct description, W. J. [Signature] Manufacturer. RESIDENT MANAGER.

Dates of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

{ During erection on board vessel - - - } Total No. of visits

Is this Boiler a duplicate of a previous case — If so, state Vessel's name and Report No. History of [unclear] [unclear]

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, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. In recommendation please see Rpt. A.

Survey Fee £ : : } When applied for, 19

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

L. R. Home

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 18 MAY 1943

Assigned See fe. mach. rft.

