

REPORT ON BOILERS.

Received at London Office

7 JUL 1943

Date of writing Report 1st JULY 1943. When handed in at Local Office 2nd JULY 1943. Port of Greenock.

No. in Survey held at Greenock. Date, First Survey 29th MAY 1942. Last Survey 28th JUNE 1943

Reg. Book. on the EMPIRE SERVICE. (Number of Visits /) Tons { Gross 7066.83 Net 6601.37

Built at Port Glasgow By whom built Lithgous Ltd. Yard No. 982. When built 1943
Engines made at Greenock. By whom made Rankin & Blackmore Ltd. Engine No. 490 When made 1943
Boilers made at Greenock. By whom made Rankin & Blackmore Ltd. Boiler No. 490 When made 1943
Nominal Horse Power 514. Owners McIntay & Shipping. Port belonging to Greenock.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 7344 sq ft Is forced draught fitted Yes Coal or Oil fired Coal.

No. and Description of Boilers 3 Cylindrical Multitubular Working Pressure 220 lbs

Tested by hydraulic pressure to 380 lbs Date of test 25/12/42 No. of Certificate 2317 2319 2320 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 56.3 sq ft No. and Description of safety valves to each boiler 2 - Springloaded - High Lift. Area of each set of valves per boiler {per Rule 7.80" 6.57" as fitted 9.80" Pressure to which they are adjusted 220 lbs 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 4'-0" 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'-6" Shell plates: Material S Tensile strength 29/33 tons

Thickness 1 15/32" Are the shell plates welded or flanged no. Description of riveting: circ. seams {end 4-073" inter. 10 7/16" long. seams T.R.O.B.S. Diameter of rivet holes in {circ. seams 1/2" long. seams Pitch of rivets {plate 63 rivets 46.9. Percentage of strength of circ. intermediate seam {plate 85.6 rivets 85.6 combined 88.3

Percentage of strength of circ. end seams {plate 63 rivets 46.9. Percentage of strength of circ. intermediate seam {plate 85.6 rivets 85.6 combined 88.3

Percentage of strength of longitudinal joint {plate 85.6 rivets 85.6 combined 88.3

Thickness of butt straps {outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler 3. Corrugated Reighton Section.

Material S. Tensile strength 26/30 tons. Smallest outside diameter 3'-9 3/8"

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 S. Tensile strength 26/30 tons. Thickness 1 1/32" Pitch of stays 19 1/2" x 19 1/2"

How are stays secured Double nuts and washers.

Tube plates: Material {front S back S. Tensile strength 26/30 tons. Thickness {1" 27/32"

Mean pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14"

Girders to combustion chamber tops: Material S. Tensile strength 24/33 tons. Depth and thickness of girder

at centre 10 1/4" x 1 5/8" Length as per Rule 2'-9 13/32" Distance apart 10 1/2" No. and pitch of stays

in each 3 - 8 1/2" Combustion chamber plates: Material S

Tensile strength 26/30 tons. Thickness: Sides 2 5/32" Back 3/4" Top 2 5/32" Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/2" x 10 1/2" Back 9 7/8" x 9" Top 8 1/2" x 10 1/2" Are stays fitted with nuts or riveted over Nuts.

Front plate at bottom: Material S. Tensile strength 26/30 tons

Thickness 1" Lower back plate: Material S. Tensile strength 26/30 tons. Thickness 1 5/16"

Pitch of stays at wide water space 14 1/4" x 9" Are stays fitted with nuts or riveted over Nuts.

Main stays: Material S. Tensile strength 28/32 tons.

Diameter {At body of stay, or Over threads} 3 3/8" No. of threads per inch 6.

Screw stays: Material S. Tensile strength 26/30 tons

Diameter {At turned off part, or Over threads} 1 7/8" 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 W.I. External diameter ^{Plain} 3" ^{Stay} Thickness ^{8.W.G.} 5/16" 3/8" 7/16" No. of threads per inch 9.

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

Outer row rivet pitch at ends — 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 — 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 N.E.M. Smokestack Manufacturers of ^{Tubes} Talbot. Steel ^{Headers} Apply & Judingham Steel Co. ^{Steel castings}

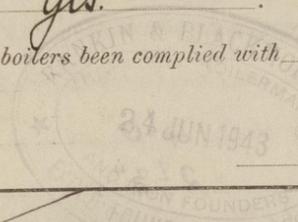
Number of elements 177 Material of tubes S.O. steel Internal diameter and thickness of tubes 1 5/8" x 2 1/2"

Material of headers Forged steel Tensile strength 26/30 tons 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 3.140" Are the safety valves fitted with easing gear Yes

Pressure to which the safety valves are adjusted 220 lbs. Hydraulic test pressure: tubes 1500 lbs/sq. in. forgings and castings 660 lbs. and after assembly in place 550 lbs. 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,
James Lewis Manufacturer.

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.) —

^{while building} ^{During erection on board vessel - - -} — Total No. of visits —

SEE MACHINERY REPORT.

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.) These boilers have been built under Special Survey in accordance with the rules and the approved plans. The materials and workmanship are good. For recommendation please see machinery report.

Survey Fee ... Changed as When applied for, 19

Travelling Expenses (if any) Machy Report When received, 19

M. Caldwell
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6 JUL 1943

Assigned

