

REPORT ON BOILERS.

Received at London Office 2 OCT 1947

Date of writing Report 10 When handed in at Local Office 1.10.1947 Port of Glasgow

No. in Survey held at Glasgow Reg. Book. 36497 on the SINGLE SCREW STEAMER "CRAFTSMAN." Date, First Survey 7 Feb 1946 Last Survey 18 Sept 1947 (Number of Visits 85)

Master Built at Glasgow By whom built Glasgow & Co. Ltd. Yard No. 1020 When built 1947. Engines made at Glasgow By whom made Reciprocating Eng. by David Rowan & Co. Ltd. No. 1198 Exhaust Turbine by Barclay Engine No. Turb. & Co. Ltd. B.W. 58. When made 1947. Boilers made at Glasgow By whom made David Rowan & Co. Ltd. Boiler No. 1198 When made 1947. Nominal Horse Power 1286 Owners T. & J. Harrison Ltd. Port belonging to Liverpool.

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY. TOTAL BOILER H.S. 13896 sq ft. SUPERNR. H.S. 5840 sq ft. COMBINED 19736 sq ft. (Letter for Record)

Manufacturers of Steel Colverson & Co. Ltd.

Total Heating Surface of Boilers 13,896 sq ft. Is forced draught fitted Yes. Coal or Oil fired Oil.

No. and Description of Boilers 4 S.E. Multitubular Return Tube. Working Pressure 220 lbs.

Tested by hydraulic pressure to 380 lbs. Date of test 15.1.47 No. of Certificate 22726. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler. No. and Description of safety valves to each boiler 1 double valve.

Area of each set of valves per boiler. Pressure to which they are adjusted 220. 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 Yes.

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 17'-0" Length 12'-0" Shell plates: Material S. Tensile strength 30/34T.

Thickness 1 3/64". Are the shell plates welded or flanged No. Description of riveting: circ. seams D.R. end inter.

long. seams T.R. D.B.S. Diameter of rivet holes in circ. seams B. 1 1/8 F 1 1/8 Pitch of rivets B. 4-548 F. 3-558.

Percentage of strength of circ. end seams. Percentage of strength of circ. intermediate seam.

Percentage of strength of longitudinal joint. Working pressure of shell by Rules 221 lbs.

Thickness of butt straps. No. and Description of Furnaces in each Boiler 4 Morrison Section.

Material S. Tensile strength 26/30T. Smallest outside diameter 3-7 5/16.

Length of plain part. Thickness of plates. Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom. Working pressure of furnace by Rules 221 lbs.

End plates in steam space: Material S. Tensile strength 26/30T. Thickness 1 3/8". Pitch of stays 24 3/4 x 23 MAX.

How are stays secured. Working pressure by Rules 220 lbs.

Tube plates: Material S. Tensile strength 26/30T. Thickness 15/16".

Mean pitch of stay tubes in nests 9.62". Pitch across wide water spaces 14". Working pressure front 230 lbs. back 238 lbs.

Girders to combustion chamber tops: Material S. Tensile strength 29/33T. Depth and thickness of girder at centre 2 @ 9 3/4 x 7 1/8. Length as per Rule 37.5". Distance apart 2 @ 7 1/2". No. and pitch of stays in each 3 @ 9". Working pressure by Rules 232 lbs. Combustion chamber plates: Material S.

Tensile strength 26/30T. Thickness: Sides 23/32". Back 23/32". Top 23/32". Bottom 23/32".

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

Working pressure by Rules 225 lbs. Front plate at bottom: Material S. Tensile strength 26/30T.

Thickness 15/16". Lower back plate: Material S. Tensile strength 26/30T. Thickness 29/32".

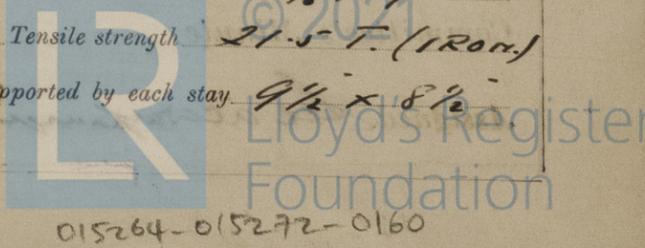
Pitch of stays at wide water space 15 1/2 x 8 1/2. Are stays fitted with nuts or riveted over Nuts.

Working Pressure 222 lbs. Main stays: Material S. Tensile strength 28/32T.

Diameter. No. of threads per inch 9. Area supported by each stay 18 x 27. 18 7/8 x 19.

Working pressure by Rules 220 lbs. Screw stays: Material S. Tensile strength 21.5 T. (IRON.)

Diameter. No. of threads per inch 9. Area supported by each stay 9 1/2 x 8 1/2.



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Working pressure by Rules 224 lbs. Are the stays drilled at the outer ends No Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \begin{array}{l} 1 7/8 \\ 1 7/8 \\ 2 \\ 2 1/4 \end{array}$

No. of threads per inch 9 Area supported by each stay 11.53×8.5 Working pressure by Rules 220 lbs.
239 lbs.

Tubes: Material S External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \begin{array}{l} 3 \\ 3 \end{array}$ Thickness $\left\{ \begin{array}{l} 7 \text{ L.S.G.} \\ 5/16 \text{ } 3/8 \text{ } 7/16 \end{array} \right.$ No. of threads per inch 9

Pitch of tubes 4 3/8 x 4 1/8 Working pressure by Rules 257 lbs. Manhole compensation: Size of opening in shell plate 20 x 16 Section of compensating ring 1-11/2 x 1 3/4 No. of rivets and diameter of rivet holes 36 @ 1 5/8

Outer row rivet pitch at ends 8 Depth of flange if manhole flanged 3 Steam Dome: Material None fitted.

Tensile strength Thickness of shell Description of longitudinal joint

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

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of 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 Smoke Tube Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right. \begin{array}{l} \text{Munn, Tubes & Co., Birmingham.} \\ \text{Munn, English Steel Corporation} \\ \text{Munn, Ranton & Fish, Ltd.} \end{array}$

Number of elements 311 Material of tubes S.O. H.S. Internal diameter and thickness of tubes 16 1/2 x 3/4

Material of headers F. I.S. Tensile strength 28/32 T. Thickness 1 1/16 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 1.76 F1 Are the safety valves fitted with casing gear Yes Working pressure as per Rules 220 lbs/F1 Pressure to which the safety valves are adjusted 225 lbs. Hydraulic test pressure: tubes 1000 lbs. forgings and castings 660 lbs. and after assembly in place 380 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,
For David Rowan & Co. Ltd. Manufacturer.
Archd. W. Grierson

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. \begin{array}{l} \text{See accompanying} \\ \text{Navy Report.} \end{array}$ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

$\left\{ \begin{array}{l} \text{while} \\ \text{building} \end{array} \right. \left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right.$ Total No. of visits

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

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

The four Boilers, with their Superheaters have been constructed under Special Survey in accordance with the Rules & the approved Plans & the materials & workmanship are good.

The Boilers have been satisfactorily installed in the vessel, examined under steam & the Boilers & Superheaters Safety valves adjusted under steam to the above stated pressures.

Survey Fee See accompanying Report. When applied for, 19

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

A. H. Seward
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 1 OCT 1947

Assigned See accompanying Navy Report.

