

REPORT ON BOILERS.

No. 20403.

MAR -1 1939

Received at London Office

Date of writing Report 21st Feb. 1939 When handed in at Local Office 23rd Feb. 1939 Port of GlasgowNo. in Survey held at Glasgow Date, First Survey 18th MARCH 1938 Last Survey 21st Feb. 1939Reg. Book. 72462 on the T/S "Clare Fraser" (Number of Visits ☒) Tons { Gross 7529 Net 3524

Master Glasgow Built at Glasgow By whom built Glasgow Dockyard Co. Ltd Yard No. 4315 When built 1939

Engines made at Glasgow By whom made John & Macaulay & Co. Ltd Engine No. 694 When made 1939

Boilers made at ditto By whom made ditto Boiler No. 694 When made 1939

Nominal Horse Power 1000 Owners The Glasgow Steamers Ltd Port belonging to Glasgow
(Glasgow Dockyard Co. Ltd)

MULTITUBULAR BOILERS—MAIN, CLARE FRASER.Manufacturers of Steel Steel Co of Scotland, Glasgow (Letter for Record S)Total Heating Surface of Boilers 17780 # Is forced draught fitted Yes Coal - Oil fired BothNo. and Description of Boilers 5 Single Ended Working Pressure 220Tested by hydraulic pressure to 380 Date of test 4.11.38 No. of Certificate PA 2168 Can each boiler be worked separately YesArea of Firegrate in each Boiler 80.5 # No. and Description of safety valves to each boiler 2 Cochran in forward high LeftArea of each set of valves per boiler { per Rule 9.45 as fitted 9.82 Pressure to which they are adjusted 225 Are they fitted with easing gear YesIn case of donkey boilers, state whether steam from main boilers can enter the donkey boiler YesSmallest distance between boilers or uptakes and bunkers or woodwork 1-6 Is oil fuel carried in the double bottom under boilers NoSmallest distance between shell of boiler and tank top plating 1-10" Is the bottom of the boiler insulated YesLargest internal dia. of boilers 16' 8 3/4" Length 12-0 Shell plates: Material S Tensile strength 29.33Thickness 1 5/8" Are the shell plates welded or flanged Yes Description of riveting: circ. seams { end DR inter. DRlong. seams TRDBS Diameter of rivet holes in { circ. seams 1 21/32" Pitch of rivets 4-6 7/8"Percentage of strength of circ. end seams { plate 64.5 rivets 45.7 Percentage of strength of circ. intermediate seam { plate 84.88 rivets 88.1Percentage of strength of longitudinal joint { plate 88.1 rivets 84.88 combined 87.38 Working pressure of shell by Rules 224Thickness of butt straps { outer 1 1/4" inner 1 3/8" No. and Description of Furnaces in each Boiler 4 DeightonMaterial S Tensile strength 26.30 Smallest outside diameter 3' 7 5/16"Length of plain part { top 12 1/32" bottom 12 1/32" Description of longitudinal joint weldDimensions of stiffening rings on furnace or c.c. bottom Yes Working pressure of furnace by Rules 228End plates in steam space: Material S Tensile strength 26.30 Thickness 1 1/4" Pitch of stays 20"-16"How are stays secured DN - Washdown Working pressure by Rules 222Tube plates: Material { front S back S Tensile strength { 26.30 Thickness { 25/32Mean pitch of stay tubes in nests 9.656 Pitch across wide water spaces 14 Working pressure { front 227 back 234Girders to combustion chamber tops: Material S Tensile strength 29.33 Depth and thickness of girderat centre 10 1/4" x 3 1/4" (2) Length as per Rule 34 17/32" Distance apart 8 1/2" No. and pitch of staysin each 3 at 8 1/4" Working pressure by Rules 251 Combustion chamber plates: Material STensile strength 26.30 Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 3/16"Pitch of stays to ditto: Sides 8 1/4" x 8 1/2" Back 8 1/4" x 8 1/2" Top 8 1/4" x 8 1/2" Are stays fitted with nuts or riveted over NutsWorking pressure by Rules 229 Front plate at bottom: Material S Tensile strength 26.30Thickness 1 5/16" Lower back plate: Material S Tensile strength 26.30 Thickness 7/8"Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over NutsWorking Pressure 223 Main stays: Material S Tensile strength 28.32Diameter { At body of stay, 3" No. of threads per inch 6 Area supported by each stay 320"Working pressure by Rules 245 Screw stays: Material S Tensile strength 26.30Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 42.2520

Lloyd's Register
 374-0055
 Foundation

Working pressure by Rules **250** Are the stays drilled at the outer ends **No** Margin stays: Diameter { At turned off part, or Over threads **17/8"**

No. of threads per inch **9** Area supported by each stay **9.5"** Working pressure by Rules **231**

Tubes: Material **S** External diameter { Plain **3"** Stay **3"** Thickness { **9/32** **11/32** No. of threads per inch **9**

Pitch of tubes **4 1/8" x 4 1/4"** Working pressure by Rules **231** Manhole compensation: Size of opening in shell plate **16 1/2" x 20 1/2"** Section of compensating ring **3.3 x 3.5 x 1 5/8"** No. of rivets and diameter of rivet holes **26 at 1 2 1/32"**

Outer row rivet pitch at ends **11 1/4"** Depth of flange if manhole flanged **3 3/4"** 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 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 **North Eastern Marine** Manufacturers of { Tubes Steel forgings Steel castings

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

Material of headers **For particulars see Newcastle Carl. No. 4434** Can 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 **3.1416** Are the safety valves fitted with easing gear **Yes** Working pressure as per Rules **220** Pressure to which the safety valves are adjusted **220** Hydraulic test pressure: tubes **440 lb.** forgings and castings **440 lb.** and after assembly in place **Yes** 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 JOHN G. KINCAID & CO. LIMITED.
W. C. Carter Director, Manufacturer.

Dates of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith **2-12-36** (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 **Yes** If so, state Vessel's name and Report No. **T/S 'S' Blair Forbes Ltd. No. 20662**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **These Boilers have been built under special survey in accordance with the approved plans & the workmanship & material are of good quality. They have now been securely fitted on board.**

Plus Report accompanying that of the Machinery

Survey Fee **Charged on Mailing Bill** : : When applied for, 19

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

W. Gordon-Mitchell & Co.
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 28 FEB 1939**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**