

# REPORT ON BOILERS.

No. 61924

Received at London Office 17 JAN 1940

Date of writing Report 11<sup>th</sup> Jan 1940 When handed in at Local Office 15.1.40 Port of Glasgow

No. in Survey held at Paisley Date, First Survey 1939 June 30<sup>th</sup> Last Survey 5<sup>th</sup> Jan 1940  
 Reg. Book. 878 (Number of Visits 28) Tons }  
 on the "BACCALIEU" Gross }  
 Net }

Master 841 Built at Paisley By whom built Yellmy & Ferguson Yard No. 557 When built

Engines made at \_\_\_\_\_ By whom made \_\_\_\_\_ Engine No. \_\_\_\_\_ When made \_\_\_\_\_

Boilers made at Paisley By whom made A. F. Craig & Co Ltd Boilers No. 724 When made 1935

Nominal Horse Power 300 (Bh only) Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

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

Manufacturers of Steel Columbels Ltd (Letter for Record S)

Total Heating Surface of Boilers 4508 sq ft Is forced draught fitted \_\_\_\_\_ Coal or Oil fired \_\_\_\_\_

No. and Description of Boilers Two - Single ended Working Pressure 210 lb

Tested by hydraulic pressure to 365 lb Date of test 5-12-39 No. of Certificate 20492 Can each boiler be worked separately \_\_\_\_\_

Area of Firegrate in each Boiler \_\_\_\_\_ No. and Description of safety valves to each boiler One - 2 1/4" Double Spring Improved Lift High

Area of each set of valves per boiler { per Rule 12.5 sq as fitted 4.94 sq Pressure to which they are adjusted \_\_\_\_\_ Are they fitted with easing gear \_\_\_\_\_

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 \_\_\_\_\_ Is oil fuel carried in the double bottom under boilers \_\_\_\_\_

Smallest distance between shell of boiler and tank top plating \_\_\_\_\_ Is the bottom of the boiler insulated \_\_\_\_\_

Largest internal dia. of boilers 13'-9" Length 11'-0" inside Shell plates Material Steel Tensile strength 30-34 ton

Thickness 1 5/16" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R. Lap inter. \_\_\_\_\_ }  
 long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 5/16" long. seams 1 5/16" Pitch of rivets { 3 3/4" }  
 Percentage of strength of circ. end seams { plate 65.0 rivets 46.4 } Percentage of strength of circ. intermediate seam { plate \_\_\_\_\_ rivets \_\_\_\_\_ }  
 Percentage of strength of longitudinal joint { plate 85.4 rivets 87.9 } Working pressure of shell by Rules 212 lb  
 combined 88.38

Thickness of butt straps { outer 3 1/2" inner 1 3/2" } No. and Description of Furnaces in each Boiler 3 - Doughton

Material Steel Tensile strength 26-30 ton Smallest outside diameter 3'-3 5/32"

Length of plain part { top \_\_\_\_\_ bottom \_\_\_\_\_ } Thickness of plates { crown 3 7/8" bottom 6 1/4" } Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom \_\_\_\_\_ Working pressure of furnace by Rules 214 lb

End plates in steam space: Material Steel Tensile strength 26-30 ton Thickness 1 1/2" Pitch of stays 18 1/2" x 16 3/4"

How are stays secured Double nuts and washers Working pressure by Rules 231 lb

Tube plates: Material { front Steel back \_\_\_\_\_ } Tensile strength { 26-30 ton } Thickness { 2 7/32" }

Mean pitch of stay tubes in nests 8.7" Pitch across wide water spaces 12 1/4" Working pressure { front 218 lb w.w.s. back 245 lb }

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 ton Depth and thickness of girder \_\_\_\_\_

at centre 2 @ 9 1/2" x 4 5/8" long Length as per Rule 33" Distance apart 9" long 4 1/4" centre No. and pitch of stays \_\_\_\_\_

in each 3 @ 8" Working pressure by Rules 210 lb (wings) Combustion chamber plates: Material Steel

Tensile strength 26-30 ton Thickness: Sides 4 3/8" Back 4 3/8" Top 4 3/8" Bottom 7/8"

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

Working pressure by Rules 214 lb Front plate at bottom: Material Steel Tensile strength 26-30 ton

Thickness 2 7/32" Lower back plate: Material Steel Tensile strength 26-30 ton Thickness 2 7/32"

Pitch of stays at wide water space 12 3/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure 256 lb Main stays: Material Steel Tensile strength 28-32 ton

Diameter { At body of stay, or Over threads. 3 1/8" } No. of threads per inch 6 Area supported by each stay 336 sq

Working pressure by Rules 218 lb Screw stays: Material Steel Tensile strength 26-30 ton

Diameter { At turned off part, or Over threads. 1 5/8" } No. of threads per inch 9 Area supported by each stay 72 sq

[2m, 7, 37 - Copyable Ink.]

Working pressure by Rules 211-11 c Are the stays drilled at the outer ends *no* Margin stays: Diameter <sup>At turned off part,</sup> <sub>or</sub> <sup>Over threads</sup> *1 7/8"*  
 No. of threads per inch *9* Area supported by each stay *84 sq* Working pressure by Rules *245-11 c*  
 Tubes: Material *Lab welded iron* External diameter <sup>Plain</sup> *2 3/4"* <sup>Stay</sup> *2 3/4"* Thickness <sup>9.6.9.</sup> *5/16" x 3/8"* No. of threads per inch *9*  
 Pitch of tubes *3 1/8" x 3 1/8"* Working pressure by Rules *215-11 c* Manhole compensation: Size of opening in shell plate *16 5/8" x 20 3/4"* Section of compensating ring *2 x 9 1/4" x 1 1/2"* No. of rivets and diameter of rivet holes *38 @ 1 7/16"*  
 Outer row rivet pitch at ends *9 1/8"* Depth of flange if manhole flanged *3 1/2"* Steam Dome: Material  
 Tensile strength Thickness of shell Description of longitudinal joint  
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint <sup>Plate</sup> <sub>Rivets</sub>  
 Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays  
 How connected to shell Inner radius of crown Working pressure by Rules  
 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 <sup>Tubes</sup> <sub>Steel forgings</sub> <sub>Steel castings</sub>  
 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 Working pressure as per Rules  
 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

The foregoing is a correct description,  
*Thos. Cairns* Manufacturer.  
 Managing Director.

Dates of Survey <sup>During progress of work in shops - -</sup> *1939 June 30 July 13. 18. 26.* <sup>while building</sup> <sup>During erection on board vessel - - -</sup> *Aug. 15, 21 Sept. 1. 6. 8. 15*  
 Are the approved plans of boiler and superheater forwarded herewith *yes*  
 (If not state date of approval.)  
 Total No. of visits *28*  
*19 Nov. 2, 8, 16, 23, 24, 27*  
*Dec. 4, 5, 8, 19 1940 Jan. 5.*

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.) *The boiler has been built under special survey in accordance with the Society's Rules and approved plans. The materials and workmanship are good. The boiler has been built to the order of Messrs Fleming & Ferguson & will be installed in their yard No 557.*

*GB*  
*15/1/40*

Survey Fee ... .. £ *27 : 10* : - } When applied for, *15 JAN 1940*  
 Travelling Expenses (if any) £ : : } When received, *157/31 1940*

*George Anderson*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 16 JAN 1940**

Assigned **TRANSMIT TO LONDON**

