

# REPORT ON BOILERS.

20 MAR 1935

Received at London Office

Date of writing Report **5.3 1935** When handed in at Local Office **16<sup>th</sup> MARCH 1935** Port of **Glasgow**

No. in Reg. Book **518** Survey held at **Glasgow** Date, First Survey **23<sup>rd</sup> April 1929** Last Survey **14<sup>th</sup> March 1934**

on the **S/S "DARCOLM"** (Number of Visits **4**) Tons { Gross **294.53**  
Net **263.34**

Master **W. Glasgow** Built at **Glasgow** By whom built **W. Hamilton & Co** Yard No. **409** When built **1935**

Engines made at **Glasgow** By whom made **John L. Macaulay & Co** Engine No. **660** When made **1935**

Boilers made at **ditto** By whom made **ditto** Boiler No. **660** When made **1925**

Nominal Horse Power **211** Owners **Hearco Shipping Co Ltd** Port belonging to **Glasgow**

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

Manufacturers of Steel **Steel Co of Scotland, W. & A. R. Inglis & Co Ltd** (Letter for Record **S**)

Total Heating Surface of Boilers **7335** Is forced draught fitted **No** Coal or Oil fired **Coal**

No. and Description of Boilers **3 Single Ended** Working Pressure **200**

Tested by hydraulic pressure to **350** Date of test **11.12.34** No. of Certificate **2035** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **61.84** No. and Description of safety valves to each boiler **2 High Lift (backbores)**

Area of each set of valves per boiler { per hole **9.44** as fitted **9.8** Pressure to which they are adjusted **205** Are they fitted with easing gear **Yes**

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **2.6** Is oil fuel carried in the double bottom under boilers **No**

Smallest distance between shell of boiler and tank top plating **2.0** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **15'-4 21/32"** Length **11'-6"** Shell plates: Material **S** Tensile strength **29.33**

Thickness **1 1/32"** Are the shell plates welded or flanged **No** Description of riveting: circ. seams { end **DR** inter. **—**

long. seams **TR + DBS** Diameter of rivet holes in { circ. seams **17/16"** Pitch of rivets { **4.057** long. seams **13/8"** **9 19/32"**

Percentage of strength of circ. end seams { plate **64.6** rivets **44.2** Percentage of strength of circ. intermediate seam { plate **85.4** rivets **85.4**

Percentage of strength of longitudinal joint { plate **85.4** rivets **85.4** combined **84.4** Working pressure of shell by Rules **200**

Thickness of butt straps { outer **1 1/32"** inner **1 5/32"** No. and Description of Furnaces in each Boiler **3 Draughts**

Material **S** Tensile strength **26-30** Smallest outside diameter **3.10 5/16"**

Length of plain part { top **—** bottom **—** Thickness of plates { crown **2 1/32"** bottom **—** Description of longitudinal joint **weld**

Dimensions of stiffening rings on furnace or c.c. bottom **—** Working pressure of furnace by Rules **204**

End plates in steam space: Material **S** Tensile strength **26.30** Thickness **1 1/32"** Pitch of stays **23 + 21"**

How are stays secured **DN + W** Working pressure by Rules **206**

Tube plates: Material { front **steel** back **—** Tensile strength { **26-30** Thickness { **15/16"** **13/16"**

Mean pitch of stay tubes in nests **10.265** Pitch across wide water spaces **14 1/4"** Working pressure { front **208** back **226**

Girders to combustion chamber tops: Material **S** Tensile strength **29.33** Depth and thickness of girder at centre **10 3/4 + 13/16 (2)**

Length as per Rule **37.031"** Distance apart **9 1/4"** No. and pitch of stays in each **3 at 8 7/8"** Working pressure by Rules **239** Combustion chamber plates: Material **S**

Tensile strength **26-30** Thickness: Sides **1 1/16"** Back **2 1/32"** Top **1 1/16"** Bottom **7/8"**

Pitch of stays to ditto: Sides **8 7/8 + 8 3/4"** Back **8 7/8 + 8 3/8"** Top **8 7/8 + 9 1/4"** Are stays fitted with nuts or riveted over **Nuts**

Working pressure by Rules **211** Front plate at bottom: Material **S** Tensile strength **26-30** Thickness **15/16"** Lower back plate: Material **S** Tensile strength **26-30** Thickness **2 1/32"**

Pitch of stays at wide water space **14"** Are stays fitted with nuts or riveted over **Nuts**

Working Pressure **211** Main stays: Material **S** Tensile strength **26-32**

Diameter { At body of stay, **3 1/2"** or **—** No. of threads per inch **6** Area supported by each stay **483"** Over threads **—**

Working pressure by Rules **210** Screw stays: Material **S** Tensile strength **26-2300**

Diameter { At turned off part, **1 5/8"** or **—** No. of threads per inch **9** Area supported by each stay **78"** Over threads **—**



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If not, state whether, and when, one will be sent

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Working pressure by Rules **204** Are the stays drilled at the outer ends **No** Margin stays: Diameter <sup>At turned off part,</sup> **1 7/8"**  
 No. of threads per inch **9** Area supported by each stay **84"** Working pressure by Rules **217**  
 Tubes: Material **Iron** External diameter <sup>Plain</sup> **3 1/4"** Thickness <sup>SWG.</sup> **7/16"-3/8"-5/16"** No. of threads per inch **9**  
 Pitch of tubes **4 7/16" x 4 7/16"** Working pressure by Rules **231** Manhole compensation: Size of opening in  
 shell plate **16 1/2" x 20 1/2"** Section of compensating ring **33" x 37" x 1 1/2"** No. of rivets and diameter of rivet holes **36 - 1 1/2"**  
 Outer row rivet pitch at ends **10 1/4"** 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> 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 Manufacturers of <sup>Tubes</sup> Steel castings  
 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 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,  
 For **JOHN G. KINCALD & CO. LIMITED.**  
*W. Carter* Director/Manufacturer.

Dates of Survey <sup>During progress of</sup> work in shops -- <sup>During erection on</sup> board vessel --  
 while building <sup>SEE MACHINERY REPORT.</sup> Are the approved plans of boiler and superheater forwarded herewith **yes**  
 (If not state date of approval.)  
 Total No. of visits

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 approved plans & the workmanship & material are of good quality, they have now been securely fitted on board.**

**This Report accompanies trial of the machinery.**

Survey Fee **charged on Maily Report.** : : When applied for, 19  
 Travelling Expenses (if any) £ : : When received, 19

*W. Gordon-Maclaine*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 19 MAR 1935**  
 Assigned **See accompanying Mach. Report.**