

(See Leit Report No. 20789)

Rpt. 5a.

REPORT ON BOILERS.

No. 66000

2-13-15

Received at London Office

SEP 1942

Date of writing Report

10

When handed in at Local Office

31: 8.

10

Port of **GLASGOW**

No. in Survey held at

GLASGOW

Date, First Survey

13: 2: 42

Last Survey

24th. Aug. 1942

Reg. Book.

on the

S.S. "CARLTON."

(Number of Visits **39**)

Tons { Gross
Net

Master Built at **BURNTISLAND** By whom built **BURNTISLAND S.B. Co.** Yard No. **263** When built **1942**

Engines made at **GLASGOW** By whom made **DAVID ROWAN & CO. LD.** Engine No. **1108** When made **1942**

Boilers made at **-DO-** By whom made **-DO-** Boiler No. **1108** When made **1942**

Nominal Horse Power **512** Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **STEEL COMPANY OF SCOTLAND LD.**

(Letter for Record **S**)

Total Heating Surface of Boilers **7248 sq ft** Is forced draught fitted **YES** Coal or Oil fired **COAL**

No. and Description of Boilers **3 SINGLE-ENDED** Working Pressure **220 LBS.**

Tested by hydraulic pressure to **380 LBS.** Date of test **C. 13-6-42** No. of Certificate **21079** Can each boiler be worked separately **YES**

Area of Firegrate in each Boiler **55 sq ft** No. and Description of safety valves to each boiler **1-3" DOUBLE**

Area of each set of valves per boiler { per Rule **12.950 sq ft** as fitted **14.140 sq ft** Pressure to which they are adjusted **220 lbs/sq in** 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 **front of boilers to bulkhead = 9'-0"** Is oil fuel carried in the double bottom under boilers **-**

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'-3"** Length **11'-6"** Shell plates: Material **S** Tensile strength **29/33 tons**

Thickness **1 7/16"** Are the shell plates welded or flanged **NO** Description of riveting: circ. seams { end **D.R.** inter. **-**

long. seams **D.B.S. T.R.** Diameter of rivet holes in { circ. seams **B 1 1/2" F 1 3/8"** Pitch of rivets { **B 4.13" F 3.435"** **10 1/4"**

Percentage of strength of circ. end seams { plate **B 63.68 F 60** rivets **47.2 47.8** Percentage of strength of circ. intermediate seam { plate **-** rivets **-**

Percentage of strength of longitudinal joint { plate **85.36** rivets **89** combined **88.5** Working pressure of shell by Rules

Thickness of butt straps { outer **1 3/32"** inner **1 7/32"** No. and Description of Furnaces in each Boiler **3 Dighton**

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 **-** Description of longitudinal joint **welded**

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

End plates in steam space: Material **S** Tensile strength **26/30 tons** Thickness **1 3/8"** Pitch of stays **19" x 22"**

How are stays secured **D.N.** Working pressure by Rules

Tube plates: Material { front **S** back **S** Tensile strength { **26/30 tons** Thickness { **15/16"** **25/32"**

Mean pitch of stay tubes in nests **9.6"** Pitch across wide water spaces **14"** Working pressure { front **-** back **-**

Girders to combustion chamber tops: Material **S** Tensile strength **28/32 tons** Depth and thickness of girder

at centre **2 @ 8 3/4" x 7/8"** Length as per Rule **2'-9 1/2"** Distance apart **8"** No. and pitch of stays

in each **3 @ 8 1/4"** Working pressure by Rules

Tensile strength **26/30 tons** Thickness: Sides **2 1/32"** Back **2 3/32"** Top **2 1/32"** Bottom **13/16"**

Pitch of stays to ditto: Sides **8" x 8 1/4"** Back **8" x 10"** Top **8" x 8 1/4"** Are stays fitted with nuts or riveted over **Nuts**

Working pressure by Rules Front plate at bottom: Material **S** Tensile strength **26/30 tons**

Thickness **15/16"** Lower back plate: Material **S** Tensile strength **26/30 tons** Thickness **13/16"**

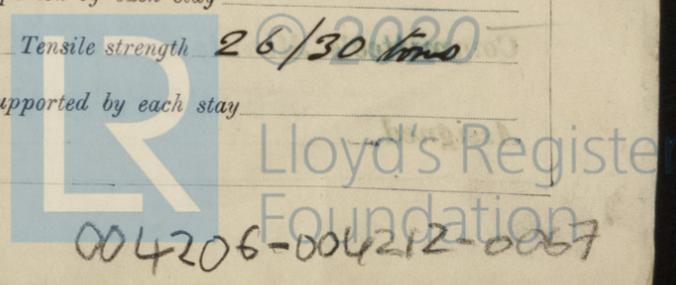
Pitch of stays at wide water space **13 7/16"** Are stays fitted with nuts or riveted over **Nuts**

Working Pressure Main stays: Material **S** Tensile strength **28/32 tons**

Diameter { At body of stay, **3" + 3 1/4"** No. of threads per inch **6** Area supported by each stay

Working pressure by Rules Screw stays: Material **S** Tensile strength **26/30 tons**

Diameter { At turned off part, **1 5/8" + 1 3/4"** No. of threads per inch **9** Area supported by each stay



Working pressure by Rules *Are the stays drilled at the outer ends* *no* Margin stays: Diameter *At turned off part, or Over threads* *1 7/8"*
 No. of threads per inch *9* Area supported by each stay Working pressure by Rules
 Tubes: Material *S* External diameter *Plain 3" Stay 3"* Thickness *7 W 9 1/4", 5/16" + 3/8"* No. of threads per inch *9*
 Pitch of tubes *4 1/8" x 4 3/16"* Working pressure by Rules Manhole compensation: Size of opening in shell 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 *4"* Steam Dome: Material *none*
 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

Manufacturers of *Tubes Steel forgings 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 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,
 For *David Rowan & Co. Ltd.* Manufacturer.
Arch. W. Grierson

Dates of Survey *During progress of work in shops - - -* Are the approved plans of boiler and superheater forwarded herewith *10/11/41*
while building *During erection on board vessel - - -* (If not state date of approval.)
SEE ACCOMPANYING MACHINERY REPORT,
 Total No. of visits

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *"INGLETON" G.L.S.R. 65418*

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 approved plans, and the materials and workmanship are good. They have been sent to Burntisland for installation in the vessel.*

These boilers have been efficiently fitted on board and the safety valves adjusted to 220 lbs/sq. in.
J. F. Campbell.

26
31/8/42

Survey Fee ... £ *See mach. report* When applied for, 19
 Travelling Expenses (if any) £ *See mach. report* When received, 19

A. J. Brown
 Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 16 OCT 1942

Committee's Minute **GLASGOW 1 - SEP 1942**
SEE ACCOMPANYING MACHINERY REPORT
 Assigned