

REPORT ON BOILERS.

No. 18954.

Received at London Office 12 SEP 1928

Date of writing Report 24.7.28 1928 When handed in at Sept. 1928 Office Sept. Part of Grenock

No. in Reg. Book. Grenock Survey held at Grenock Date, First Survey 6th September 1928 Last Survey 5th September 1928

on the S/S "Colorado" (Number of Visits) Tons { Gross Net

Master Grenock Built at Glasgow By whom built Lithgow & Co Yard No. 805 When built 1928

Engines made at Grenock By whom made John & McCaid & Co Engine No. 643 When made 1928

Boilers made at ditto By whom made ditto Boiler No. 613 When made 1928

Nominal Horse Power _____ Owners Ball Bros Port belonging to Glasgow

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

Manufacturers of Steel Switzerland & Co Vrenugle Stahlwerke (Letter for Record S)

Total Heating Surface of Boilers 6786 Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers 3 Single ended 3SB. Working Pressure 200

Tested by hydraulic pressure to 350 Date of test 9-2-28 No. of Certificate 1804 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 5374 No. and Description of safety valves to each boiler Double Spring

Area of each set of valves per boiler 649 as fitted 404 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 no

Smallest distance between boilers or uptakes and bunkers or woodwork 4.0 Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2.8 Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 14.4684 Length 11-6 Shell plates: Material S Tensile strength 28.32

Thickness 15/16 Are the shell plates welded or flanged yes Description of riveting: circ. seams { end DR inter. — }
long. seams TR.D.B.S Diameter of rivet holes in { circ. seams 3/8 long. seams — } Pitch of rivets { 4.019 9 1/2 }

Percentage of strength of circ. end seams { plate 65.4 rivets 46.6 } Percentage of strength of circ. intermediate seam { plate — rivets — }

Percentage of strength of longitudinal joint { plate 85.52 rivets 91.75 combined 89.37 } Working pressure of shell by Rules 201.8

Thickness of butt straps { outer 1 inner 1 1/8 } No. and Description of Furnaces in each Boiler 3 Sights 3CF.

Material S Tensile strength 26-30 Smallest outside diameter 3.6188

Length of plain part { top — bottom — } Thickness of plates { crown 19/32 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 19/32 Pitch of stays 19 3/4 x 21

How are stays secured DN. & W. Working pressure by Rules 209

Tube plates: Material { front S back S } Tensile strength { 26-30 } Thickness { 15/16 3/4 }

Mean pitch of stay tubes in nests 9 3/32 Pitch across wide water spaces 13 3/4 Working pressure { front 204 back 204 }

Girders to combustion chamber tops: Material S Tensile strength 28-32 Depth and thickness of girder at centre 9 3/4 x 3/4 (2) Length as per Rule 2.9063 Distance apart 9 No. and pitch of stays in each 3 at 8 1/8 Working pressure by Rules 204 Combustion chamber plates: Material S

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

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

Working pressure by Rules 200 Front plate at bottom: Material S Tensile strength 26-30

Thickness 15/16 Lower back plate: Material S Tensile strength 26-30 Thickness 27/32

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

Working Pressure 204 Main stays: Material S Tensile strength 28-32

Diameter { At body of stay, 3 3/8 or — } No. of threads per inch 6 Area supported by each stay 414.75

Working pressure by Rules 215 Screw stays: Material S Tensile strength 26-30

Diameter { At turned off part, 1 3/4 x 1 5/8 or — } No. of threads per inch 9 Area supported by each stay 81.2

Working pressure by Rules 206. Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 17/8 \\ \text{or} \\ \text{Over threads } \checkmark \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 102" Working pressure by Rules 206

Tubes: Material *Iron* External diameter $\left\{ \begin{array}{l} \text{Plain } 23/4 \\ \text{Stay } \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 9 \text{ WG} \\ 5/16 \text{ } 3/8 \text{ } 7/16 \end{array} \right.$ No. of threads per inch 9

Pitch of tubes $4 \times 3 \frac{15}{16}$ Working pressure by Rules 203 Manhole compensation: Size of opening in shell plate $16 \frac{1}{2} \times 20 \frac{1}{2}$ Section of compensating ring $32 \times 36 \times 1 \frac{1}{32}$ No. of rivets and diameter of rivet holes 36 at $1 \frac{3}{32}$

Outer row rivet pitch at ends $9 \frac{13}{16}$ Depth of flange if manhole flanged 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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays

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 $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

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 23 inclusive for boilers been complied with

FOR JOHN G. KINCAID & COY. LIMITED

The foregoing is a correct description,
W. Gordon-Mitchell DIRECTOR
 Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right.$

See Machinery Report.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) YES.

Total No. of visits \checkmark

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 are now securely fitted on board and ready to run. Found satisfactory. This Report accompanies that of the Machinery*

Survey Fee \pounds *Charged on Machinery Report*

When applied for, 192

When received, 192

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

Committee's Minute **GLASGOW 11 SEP 1928**

Assigned *See accompanying mach. report.*

