

REPORT ON BOILERS.

No. 54392

25 APR 1934

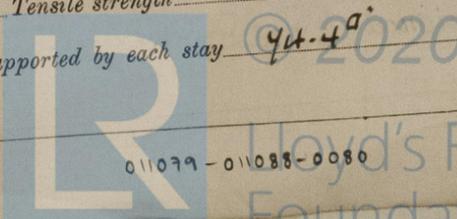
Received at London Office

5a.

Writing Report *10* When handed in at Local Office *21. 4. 1934* Port of *Glasgow*
 Date, First Survey *11 Sept 1933* Last Survey *12 April 1934*
 in Survey held at *Glasgow* (Number of Visits *63*) Tons { Gross *2212*
 Net *1098*
 on the *S. I. Waitaki*
 Built at *Glasgow* By whom built *A. Stephen & Sons Ltd.* Yard No. *538* When built *1934. 4.*
 By whom made *A. Stephen & Sons Ltd.* Engine No. *538* When made *1934.*
 By whom made *do* Boiler No. *538* When made *1934.*
 Owners *Union S. Co. of New Zealand* Port belonging to *Dunedin.*
 Indicated Horse Power *353.*

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Watt Company Scotland* (Letter for Record *5*)
 Total Heating Surface of Boilers *5406 sq ft* Is forced draught fitted *Y/N* Coal or Oil fired *Coal & oil* Working Pressure *200 lb*
 and Description of Boilers *2 Simple Ended Return Tube* Can each boiler be worked separately *Y/N*
 tested by hydraulic pressure to *350 lb* Date of test *15/11/34* No. of Certificate *1930*
 Area of Firegrate in each Boiler *62 sq ft* No. and Description of safety valves to each boiler *2 unimpaired high lift*
 Area of each set of valves per boiler { per Rule *9.98* Pressure to which they are adjusted *200 lb* Are they fitted with easing gear *Y/N*
 as fitted *9.82* case of donkey boilers, state whether steam from main boilers can enter the donkey boiler *Y/N*
 Smallest distance between boilers or uptakes and bunkers or woodwork *Will blow* Is oil fuel carried in the double bottom under boilers *Y/N*
 Smallest distance between shell of boiler and tank top plating *21"* Is the bottom of the boiler insulated *Y/N*
 Largest internal dia. of boilers *15'-6"* Length *12'-4"* Shell plates: Material *S* Tensile strength *29.33 Tons*
 Thickness *1 3/16"* Are the shell plates welded or flanged *No.* Description of riveting: circ. seams { end *DR. overlap*
 long. seams *DR. 3R. 5 wide in pitch* Diameter of rivet holes in { circ. seams *1 1/16"* Pitch of rivets { *4 1/2"*
 long. seams *1 1/16"* Percentage of strength of circ. intermediate seam { plate *✓*
 rivets *✓* Percentage of strength of circ. end seams { plate *65.0* Working pressure of shell by Rules *201.*
 rivets *42.2* rivets *85.5* rivets *90.0* combined *85.8*
 Thickness of butt straps { outer *1 1/16"* No. and Description of Furnaces in each Boiler *3 Duplex. 3 Cf.*
 inner *1 3/16"* Tensile strength *26.30 Tons* Smallest outside diameter *46.15"*
 Material *S* Description of longitudinal joint *Will*
 Length of plain part { top *✓* Thickness of plates { bottom *4 1/16"* Working pressure of furnace by Rules *203*
 bottom *✓* Dimensions of stiffening rings on furnace or c.c. bottom *✓* Working pressure by Rules *207.*
 End plates in steam space: Material *S* Tensile strength *26.30 Tons* Thickness *1 5/16"* Pitch of stays *25.5"*
 How are stays secured *Nuts inside & outside* Working pressure by Rules *207.*
 Tube plates: Material { front *S* Tensile strength { *26.30 Tons* Thickness { *2 1/16"*
 back *S* Working pressure { front *204.*
 Mean pitch of stay tubes in nests *9 3/8"* Pitch across wide water spaces *13 1/2"* Working pressure { back *292.*
 Girders to combustion chamber tops: Material *S* Tensile strength *29.33 Tons* Depth and thickness of girder
 at centre *10" x 1.75"* Length as per Rule *36 9/32"* Distance apart *10 1/2"* No. and pitch of stays
 in each *3 D 8 3/4"* Working pressure by Rules *205.* Combustion chamber plates: Material *S*
 Tensile strength *26.30 Tons* Thickness: Sides *4 1/16"* Back *1 1/16"* Top *4 1/16"* Bottom *1 3/16"*
 Pitch of stays to ditto: Sides *8 3/4" x 8 1/2"* Back *10" x 8"* Top *10 1/2" x 8 3/4"* Are stays fitted with nuts or riveted over *Nuts*
 Working pressure by Rules *201.* Front plate at bottom: Material *S* Tensile strength *26.30 Tons* Thickness *1 1/8"*
 Thickness *2 1/16"* Lower back plate: Material *S* Tensile strength *26.30 Tons* Thickness *1 1/8"*
 Pitch of stays at wide water space *13 1/2"* Are stays fitted with nuts or riveted over *Nuts*
 Working Pressure *223* Main stays: Material *S* Tensile strength *28 1/2 Tons*
 Diameter { At body of stay, *2 1/8"* No. of threads per inch *6.* Area supported by each stay *276 sq in*
 Over threads *2 1/8"* Screw stays: Material *S* Tensile strength *26.30 Tons*
 Working pressure by Rules *219.* No. of threads per inch *9* Area supported by each stay *44.4 sq in*
 Diameter { At turned off part, *1 5/8"* Over threads *1 3/4"*



Working pressure by Rules 205. Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, 1 1/8 or Over threads 1 1/8 }

No. of threads per inch 9. Area supported by each stay 940. Working pressure by Rules 227

Tubes: Material SD. steel External diameter { Plain 2 1/2 Stay 2 1/2 } Thickness { 9/16 } No. of threads per inch 9

Pitch of tubes 3 3/4 x 3 3/4 Working pressure by Rules 230. Manhole compensation: Size of opening in shell plate 20 1/2 x 16 1/2 Section of compensating ring 26 1/2 x 1 3/4 No. of rivets and diameter of rivet holes 32 @ 1 9/16

Outer row rivet pitch at ends 9 7/8 Depth of flange if manhole flanged / Steam Dome: Material 36

Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____

Diameter of rivet holes _____ Pitch of rivets _____ Percentage of strength of joint { Plates _____ 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 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 _____

FOR ALEXANDER STEPHEN & SONS LIMITED

The foregoing is a correct description,

Alex Macellan Director Manufacturer

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - }

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

SEE ACCOMPANYING MACHINERY REPORT.

Total No. of visits

Is this Boiler a duplicate of a previous case _____ If so, state Vessel's name and Report No. _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These tubes have been built under special survey and in accordance with the Rules. The materials and workmanship are good. They have been tested by hydraulic pressure and found tight. On completion they have been placed in boxes and efficiently secured in position.

24/4/34.

Survey Fee ... £ _____ When applied for, 19 _____
 Travelling Expenses (if any) £ see Machinery report. When received, 19 _____

John Munro
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 24 APR 1934

TUE 8 MAY 1934

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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