

REPORT ON BOILERS.

No. 15223.

11 JUN 1928

Received at London Office

Date of writing Report 9-6-28 When handed in at Local Office 9-6-28 Port of Aberdeen

No. in Surrey held at Aberdeen Date, First Survey 21-12-27 Last Survey 4-6-1928

Reg. Book. on the S.S. "ST CLEMENT." (Number of Visits 18) Gross 449.73 Tons Net 178.65

Master Built at Aberdeen By whom built Hall Russell & Co. Ltd. Ward No. 695 When built 1928.

Engines made at Aberdeen By whom made Hall, Russell & Co. Ltd. Engine No. 695 When made 1928.

Boilers made at Aberdeen By whom made Hall Russell & Co. Ltd. Boiler No. 695 When made 1928.

Nominal Horse Power 81 Owners North of Scotland, Orkney & Shetland Steam Nav. Co. Ltd. Port belonging to Aberdeen.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Co. of Scotland, Ltd. (Letter for Record T.)

Total Heating Surface of Boilers 1510 sq. ft. Is forced draught fitted no Coal or Oil fired Coal

No. and Description of Boilers One Single ended Main. Working Pressure 180 lb.

Tested by hydraulic pressure to 320 lb. Date of test 23-4-28 No. of Certificate 1064 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 50 sq. ft. No. and Description of safety valves to each boiler 2 spring loaded,

Area of each set of valves per boiler { per Rule 9.670 as fitted 9.80 Pressure to which they are adjusted 180 lb. 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 4-6 Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating no Is the bottom of the boiler insulated no

Largest internal dia. of boilers 13'-0" Length 10'-6" Shell plates: Material Steel. Tensile strength 28/32 tons.

Thickness 5/16" Are the shell plates welded or flanged no Description of riveting: circ. seams { end D.R. inter. 3/8"

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 1/8" long. seams 1 1/8" Pitch of rivets { 8"

Percentage of strength of circ. end seams { plate 66.75 rivets 44.8 Percentage of strength of circ. intermediate seam { plate 85.9 rivets 88.7

Percentage of strength of longitudinal joint { plate 85.9 rivets 88.7 combined 89.5 Working pressure of shell by Rules 182 lb.

Thickness of butt straps { outer 13/16" inner 15/16" No. and Description of Furnaces in each Boiler 3 Deighton.

Material Steel Tensile strength 26/30 Smallest outside diameter 37.25"

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 15/32" bottom 15/32" Description of longitudinal joint welded.

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 180.5.

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 1 1/8" Pitch of stays 26" dia.

How are stays secured Double nuts Working pressure by Rules 182.5 lb.

Tube plates: Material { front Steel back Steel Tensile strength { 26/30 tons Thickness { 29/32" 25/32"

Mean pitch of stay tubes in nests 11.0" Pitch across wide water spaces 14.5" Working pressure { front 187.5 back 180.9

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

at centre 8" x 13/4" Length as per Rule 30.5625" Distance apart 9 1/2" No. and pitch of stays

in each 3 @ 7 1/8" Working pressure by Rules 181 lb. Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 23/32" Back 21/32" Top 23/32" Bottom 23/32"

Pitch of stays to ditto: Sides 8 7/8" x 9 1/2" Back 9" x 9 1/2" x 10" x 8" Top 9 1/2" x 7 1/8" Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 182.8 lb. Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 29/32" Lower back plate: Material Steel Tensile strength 26/30 Thickness 27/32"

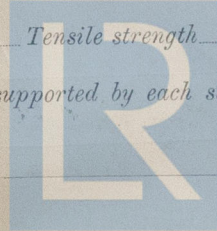
Pitch of stays at wide water space 14 3/8" Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 187 lb. Main stays: Material Steel Tensile strength 28/32

Diameter { At body of stay, 3" No. of threads per inch 6 Area supported by each stay 368 sq. in.

Working pressure by Rules 182 lb. Screw stays: Material W.I. Tensile strength 21 1/2 tons

Diameter { At turned off part, 1 5/8" No. of threads per inch 9 Area supported by each stay 84.3 sq. in.



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Working pressure by Rules 181 Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, 1 3/4" or Over threads 1 3/4" Working pressure by Rules 180.3

No. of threads per inch 9 Area supported by each stay 100.70 Thickness { 8 S.W.G. 1/4, 5/16 + 3/8 No. of threads per inch 9

Tubes: Material W.I. External diameter { Plain 3 1/2 Stay 3 1/2 Working pressure by Rules 215 lb. Manhole compensation: Size of opening in

Pitch of tubes 4 3/4 x 4 3/4 + 4 7/8 Section of compensating ring End plate flange 3 7/8 of rivets and diameter of rivet holes

End shell plate 16 x 12 Depth of flange if manhole flanged 3 7/8 Steam Dome: Material

Outer row rivet pitch at ends 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 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 23 inclusive for boilers been complied with

The foregoing is a correct description,
 J. HALL, RUSSELL & CO., LTD. Manufacturer
James H. Russell DIRECTOR

Dates of Survey { During progress of work in shops - - Dec. 21, Jan. 12, 25, 31, Feb. 16, May 1927 1928
 while building { During erection on board vessel - - 11, 21, 24, June 4, 1928
 Total No. of visits 18

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under Special Survey in accordance with the approved plan & the Rules of this Society. The materials & workmanship are good. The boiler has been satisfactorily fitted on board the vessel, the safety valves adjusted under steam & tried for accumulation, and the boiler examined under working conditions & found satisfactory.

Survey Fee ... See Report When applied for, 192
 Travelling Expenses (if any) £ on Machinery When received, 192

P. Fitzgerald.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute JUL 15 JUN 1928
 Assigned See minute on Abn RH
 15223 attached