

# REPORT ON BOILERS.

No. 29514

Received at London Office 16 SEP 1927

Date of writing Report 1927 When handed in at Local Office 13 SEP 1927

Port of *Sunderland.*

No. in *Surrey* held at *Sunderland* Date, First Survey 11th Feb'y 24 Last Survey 6th Sept 1924

0815 on the *S.S. "FRANCES MASSEY"* (Number of Visits 59) Gross 4211 Tons Net 2538

Master Built at *Sunderland* By whom built *Lieut. John Priceman* Yard No. 277 When built 1927

Engines made at *Sunderland* By whom made *George Rank Ltd* Engine No. 1149 When made 1927

Boilers made at *do* By whom made *do* Boiler No. 1149 When made 1927

Nominal Horse Power 375. Owners *W. A. Massey & Sons Ltd.* Port belonging to *Hull.*

## MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *David Colville & Sons Ltd.* (Letter for Record *S*)

Total Heating Surface of Boilers *5009 sq ft* Is forced draught fitted *No* Coal or Oil fired *coal*

No. and Description of Boilers *Three cyl. muth.* Working Pressure 180 lbs.

Tested by hydraulic pressure to *320 lbs* Date of test *16/5/27* No. of Certificate *3942* Can each boiler be worked separately *yes*

Area of Firegrate in each Boiler *58 sq ft* No. and Description of safety valves to each boiler *Two spring loaded.*

Area of each set of valves per boiler { per Rule *12.8"* as fitted *14.12"* Pressure to which they are adjusted *180 lbs* 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 *6'-0"* Is oil fuel carried in the double bottom under boilers *No*

Smallest distance between shell of boiler and tank top plating *3'-0"* Is the bottom of the boiler insulated *yes*

Largest internal dia. of boilers *14'-3 3/4"* Length *11'-0"* Shell plates: Material *Steel* Tensile strength *28 to 32 tons*

Thickness *1 1/4"* Are the shell plates welded or flanged *No* Description of riveting: circ. seams { end *D.R.L* inter *yes*

Long. seams *T.R. JBS* Diameter of rivet holes in { circ. seams *F 1 3/8 B 1 1/2* long. seams *1 1/4"* Pitch of rivets { *3 7/8"* *3 5/8"* *8 3/4"*

Percentage of strength of circ. end seams { plate *65.6%* rivets *45%* Percentage of strength of circ. intermediate seam { plate *85%* rivets *92%*

Percentage of strength of longitudinal joint { plate *85%* rivets *92%* combined *92.8%* Working pressure of shell by Rules *180*

Thickness of butt straps { outer *2 1/2"* inner *1 1/2"* No. and Description of Furnaces in each Boiler *3 firetubes 3CF*

Material *Steel* Tensile strength *26 to 30 tons* Smallest outside diameter *3'-5 5/8"*

Length of plain part { top *-* bottom *-* Thickness of plates { crown *7 1/2"* bottom *7 1/2"* Description of longitudinal joint *Welded.*

Dimensions of stiffening rings on furnace or c.c. bottom *-* Working pressure of furnace by Rules *186 lbs.*

End plates in steam space: Material *Steel* Tensile strength *26-30* Thickness *1 5/8"* Pitch of stays *20" x 21 3/4"*

How are stays secured *DN & W.* Working pressure by Rules *184*

Tube plates: Material { front *Steel* back *Steel* Tensile strength { *26 to 30* *26 to 30* Thickness { *1 3/8"* *3/4"*

Lean pitch of stay tubes in nests *10 1/4"* Pitch across wide water spaces *14 1/4"* Working pressure { front *183* back *191*

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

at centre *6 1/2" x 1 3/4"* Length as per Rule *28 7/8"* Distance apart *8"* No. and pitch of stays

in each *2 @ 8"* Working pressure by Rules *181 lbs.* Combustion chamber plates: Material *Steel*

Tensile strength *26 to 30 tons* Thickness: Sides *3/4"* Back *5/8"* Top *4/8"* Bottom *3/4"*

Pitch of stays to ditto: Sides *8 1/4" x 8"* Back *8 1/2" x 8 1/4"* Top *8" x 8"* Are stays fitted with nuts or riveted over *Nuts*

Working pressure by Rules *192* Front plate at bottom: Material *Steel* Tensile strength *26 to 30 tons*

Thickness *1 3/8"* Lower back plate: Material *Steel* Tensile strength *26 to 30 tons* Thickness *1 1/8"*

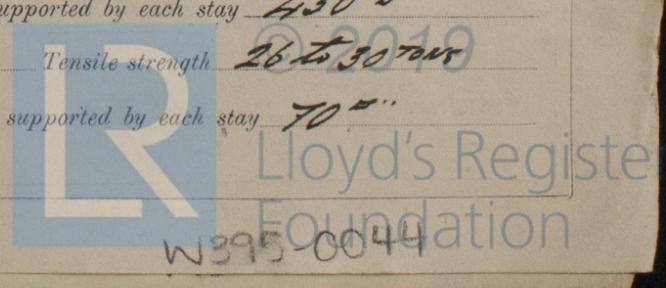
Pitch of stays at wide water space *14 3/4" & 17 1/4" x 8"* Are stays fitted with nuts or riveted over *Nuts*

Working Pressure *198 lbs.* Main stays: Material *Steel* Tensile strength *28 to 32 tons*

Diameter { At body of stay, *3 1/8" & 2 7/8"* or Over threads No. of threads per inch *6* Area supported by each stay *430 sq in*

Working pressure by Rules *196* Screw stays: Material *Steel* Tensile strength *26 to 30 tons*

Diameter { At turned off part, *1 5/8"* or Over threads No. of threads per inch *9* Area supported by each stay *70 sq in*



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Working pressure by Rules 216 Are the stays drilled at the outer ends NO Margin stays: Diameter <sup>At turned off part</sup> 1 3/4" or <sup>Over threads</sup> 1 3/4"

No. of threads per inch 9 Area supported by each stay 96" Working pressure by Rules 228

Tubes: Material Steel External diameter <sup>Plain</sup> 3 1/2" <sup>Stay</sup> 3 1/2" Thickness <sup>8WC</sup> 1/2" 5/8" 3/8" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 210 Manhole compensation: Size of open shell plate 12" x 16" Section of compensating ring Flanged No. of rivets and diameter of rivet holes -

Outer row rivet pitch at ends - Depth of flange if manhole flanged 3 1/8" 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 <sup>Plate</sup> - <sup>Rivets</sup> -

Internal diameter - Working pressure by Rules - Thickness of crown - No. and diam stays - Inner radius of crown - Working pressure by Rules -

How connected to shell - Size of doubling plate under dome - Diameter of rivet holes and of rivets in outer row in dome connection to shell -

Type of Superheater NONE Manufacturers of <sup>Tubes</sup> - <sup>Steel castings</sup> -

Number of elements - Material of tubes - Internal diameter and thickness of tubes -

Material of headers - Tensile strength - Thickness - Can the superheater be shut off 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 -

Rules - Pressure to which the safety valves are adjusted - Hydraulic test pressure -

tubes - castings - and after assembly in place - Are drain cocks or valves to free the superheater from water where necessary -

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes

The foregoing is a correct description,  
 FOR GEORGE CLARK LIMITED  
W. S. MULL Manuf

Dates of Survey <sup>During progress of work in shops - -</sup> Please see Mech. Rpt. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) -

<sup>while building</sup> <sup>During erection on board vessel - - -</sup> - Total No. of visits -

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been satisfactorily fitted in the vessel & the safety valves adjusted under steam. For notation see inspection report.

Survey Fee ... .. £ Please see Mech. Rpt. When applied for, 192

Travelling Expenses (if any) £ Mech. Rpt. When received, 192

Harbottle  
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUES. 20 SEP 1927

Assigned See Mech. Rpt. attached

