

REPORT ON BOILERS.

No. 29514

Received at London Office

16 SEP 1927

Date of writing Report

192

When handed in at Local Office

13 SEP. 1927

Port of *Sunderland*No. in
Reg. Book.
Suppl.*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

Net 2538

Master

Built at *Sunderland*By whom built *Lieut. P. R. P. R.*

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

8009 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 sq ft

as fitted

14.12 sq ft

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.

Long. seams

T.R. J.B.S.

Diameter of rivet holes in

circ. seams

F 1 3/8 B 1 1/2

long. seams

1 1/4"

Pitch of rivets

*3 3/8" 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 flue tubes**3 CF*

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

3 1/2"

bottom

3 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 2 1/2"*

How are stays secured

*D.N. & 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"*

Mean 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 3/8"

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

1/2"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 1/2" x 8"

Back

8 1/2" x 8 1/2"

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 3/8"

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 3/8" & 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

Working pressure by Rules 216 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

No. of threads per inch 9 Area supported by each stay 960 Working pressure by Rules 228

Tubes: Material Steel External diameter { Plain 3 1/2 Stay 3 1/2 Thickness { 8/16 5/16 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 { Plate - Rivets -

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 { 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 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. Munn Manufa

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

while { During erection on board vessel - - - Total No. of visits

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

Survey Fee ... Please see Mch. Rpt. When applied for, 192

Travelling Expenses (if any) See Mch. Rpt. When received, 192

Committee's Minute TUES. 20 SEP 1927

Assigned See Mch. Rpt. attached

Harbottle
Engineer Surveyor to Lloyd's Register of Ships