

## REPORT ON BOILERS.

No. 72138.

Received at London Office 2 OCT 1947

Date of writing Report

19

When handed in at Local Office

1.10.1947

Port of

Glasgow.

No. in Survey held at  
Reg. Book.

Glasgow

Date, First Survey

7 Feb 1946

Last Survey

18 Sept 1947

1947

(Number of Visits 85)

Gross  
Tons  
Net

36497 on the SINGLE SCREW STEAMER "CRAFTSMAN."

Master

Built at

Glasgow

By whom built

Littgus &amp; Co.

Yard No.

1020

When built

1947.

Engines made at

Glasgow.

By whom made

Reciprocating Eng. by David Rowan &amp; Co. Ltd. 11198.

Engine No.

Turbo etc. Ltd. B.W. 88.

When made

1947.

Boilers made at

Glasgow.

By whom made

David Rowan &amp; Co. Ltd.

Boiler No.

1198

When made

1947

Nominal Horse Power

1286

Owners

T. &amp; J. Harrison Ltd.

Port belonging to

Liverpool.

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

TOTAL BOILER H.S. 13896 sq ft

" SUPERHEATER H.S. 5840 sq ft

COMBINED 19736 sq ft

(Letter for Record)

Manufacturers of Steel

Littgus &amp; Co.

Total Heating Surface of Boilers

13,896 sq ft.

Is forced draught fitted

Yes.

Coal or Oil fired

Oil.

No. and Description of Boilers

4 S.E. Multitubular Return Tube.

Working Pressure

220 lbs.

Tested by hydraulic pressure to

380 lbs.

Date of test

15.1.47

No. of Certificate

22326

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

9.24 sq ft

No. and Description of safety valves to each boiler

1 double valve.

Area of each set of valves per boiler

per Rule

9.62 sq ft

Pressure to which they are adjusted

220

Are they fitted with easing gear

Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork

24"

Is oil fuel carried in the double bottom under boilers

Yes.

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

17'-0"

Length

12'-0"

Shell plates: Material

S.

Tensile strength

30/34T.

Thickness

1 3/4"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R.

long. seams

T.R. D.B.S.

Diameter of rivet holes in

circ. seams

B. 1 1/2" F 1 1/2"

Pitch of rivets

B. 4-5/8" F 3-5/8"

Percentage of strength of circ. end seams

plate

B. 64.2 F 59.98

rivets

B. 44.8 F 45.4

Percentage of strength of circ. intermediate seam

plate

B. 44.8 F 45.4

Percentage of strength of longitudinal joint

plate

85.35

rivets

84.99

Working pressure of shell by Rules

221 lbs.

Thickness of butt straps

outer

1 1/4"

No. and Description of Furnaces in each Boiler

4 Morrison Section

Material

S.

Tensile strength

26/30T.

Smallest outside diameter

3-7 1/16"

Length of plain part

top

bottom

Thickness of plates

crown

2 1/32"

Description of longitudinal joint

Welded.

Dimensions of stiffening rings on furnace or c.c. bottom

Yes.

Working pressure of furnace by Rules

221 lbs.

End plates in steam space: Material

S.

Tensile strength

26/30T.

Thickness

1 3/8"

Pitch of stays 24 3/4" x 23 MAX.

How are stays secured

nuts both sides

Working pressure by Rules

220 lbs.

Tube plates: Material

front

back

S.

Tensile strength

26/30T.

Thickness

15/16"

Mean pitch of stay tubes in nests

9.62"

Pitch across wide water spaces

14"

Working pressure

front 230 lbs.

back 238 lbs.

Girders to combustion chamber tops: Material

S.

Tensile strength

29/33T.

Depth and thickness of girder

at centre

2 @ 9 3/4" x 7 1/8"

Length as per Rule

37.5"

Distance apart

W. 8 1/4"

C. 7 1/2"

No. and pitch of stays

in each

3 @ 9"

Working pressure by Rules

232 lbs.

Combustion chamber plates: Material

S.

Tensile strength

26/30T.

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Bottom

23/32"

Pitch of stays to ditto: Sides

8 1/4" x 9"

Back

C. 8 1/2" x 7 1/8"

Top

7 1/2" x 9"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

225 lbs.

Front plate at bottom: Material

S.

Tensile strength

26/30T.

Thickness

15/16"

Lower back plate: Material

S.

Tensile strength

26/30T.

Thickness

29/32"

Pitch of stays at wide water space

15 1/2" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

222 lbs.

Main stays: Material

S.

Tensile strength

28/32T.

Diameter

At body of stay,

or

Over threads

3 1/2" or 3"

No. of threads per inch

9.

Area supported by each stay

18 x 27"

18 3/8 x 19"

Working pressure by Rules

220 lbs.

Screw stays: Material

S.

Tensile strength

21.5 T. (IRON)

Diameter

At turned off part,

or

Over threads

1 3/4", 1 1/2", 2", 2 1/4"

No. of threads per inch

9.

Area supported by each stay

9 1/2" x 8 1/2"

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Working pressure by Rules 224 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 1/4" or 1 3/4" Over threads 1 1/4" 1 3/4" 2" 2 1/4" 220 lbs. 239 lbs.

No. of threads per inch 9 Area supported by each stay 11.53 x 8.5" Working pressure by Rules 220 lbs. 239 lbs.

Tubes: Material L External diameter { Plain 3" Thickness { 7 L.S.G. No. of threads per inch 9 Stay 3" 5 1/4" 3 1/2" 7 1/2"

Pitch of tubes 4 3/8" x 4 1/8" Working pressure by Rules 257 lbs. Manhole compensation: Size of opening in shell plate 20 x 16 Section of compensating ring 1-11 1/2" x 1 3/4" No. of rivets and diameter of rivet holes 36 @ 1 1/8"

Outer row rivet pitch at ends 8" Depth of flange if manhole flanged 3" Steam Dome: Material none fitted

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 Smoke Tube Manufacturers of { Tubes Munn, Tubes Ld., Birmingham Steel forgings Munn, English Steel Corporation Steel castings Munn, Ranton & Fife Ld.

Number of elements 341 Material of tubes S.D. M.S. Internal diameter and thickness of tubes 16 1/2" x 3 1/2"

Material of headers F. I.S. Tensile strength 28/32 T. Thickness 11/16 Can the superheater be shut off and the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes

Area of each safety valve 1.76 E' Are the safety valves fitted with easing gear yes Working pressure as per Rules 220 lbs/E' Pressure to which the safety valves are adjusted 225 lbs. Hydraulic test pressure: tubes 1000 lbs. forgings and castings 660 lbs. and after assembly in place 380 lbs. Are drain cocks or valves fitted to free the superheater from water where necessary yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description,  
For David Rowan T.C. & Co. Manufacturer.  
Archd. W. Grierson

Dates of Survey { During progress of work in shops - - - See accompanying Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
while building { During erection on board vessel - - - Nachy Report Total No. of visits

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

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

The four Boilers, with their Superheaters have been constructed under Special Survey in accordance with the Rules & the approved Plans & the materials & workmanship are good.

The Boilers have been satisfactorily witnessed in the vessel, examined under steam & the Boilers & Superheaters Safety valves adjusted under steam to the above stated pressures.

Survey Fee See accompanying Report When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

P. R. L. L. L.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 1 OCT 1947

Assigned See accompanying Nachy Report



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