

REPORT ON BOILERS.

No. 7750

Received at London Office 21 MAR 1928

Date of writing Report

192

When handed in at Local Office

19. 3. 1928

Port of

Glasgow

No. in Reg. Book.

Survey held at

Glasgow

Date, First Survey

16. 9. 27

Last Survey

14-3-1928

on the new steel

S/S "CAPE ST ANDREW."

(Number of Visits 33)

Tons

Gross 5094

Net 3163

Master

Built at

Port Glasgow

By whom built

R. Duncan & Co.

Yard No. 381

When built 1928

Engines made at

Glasgow

By whom made

David Rowan & Co. Ltd

Engine No. 868

When made 1928

Boilers made at

Glasgow

By whom made

David Rowan & Co. Ltd

Boiler No. 868

When made 1928

Nominal Horse Power

545

Owners

Sun Shipping Co. Ltd

Port belonging to

London

(Cotts (Mitchell) 16:)

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel James Dunlop & Co. Ltd. Scottish Iron and Steel Co. Ltd. David Beattie & Sons Ltd. United Ship and Bar Mills Ltd. (Letter for Record (S) ✓)

Total Heating Surface of Boilers

8001 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal ✓

No. and Description of Boilers

Three single ended marine 358

Working Pressure 200 ✓

Tested by hydraulic pressure to

350

Date of test

19-12-27

No. of Certificate

17712

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

57.5 sq ft

No. and Description of safety valves to each boiler

Improved high lift. ✓

Area of each set of valves per boiler

per Rule 2.22 sq in

as fitted 2 1/2"

Pressure to which they are adjusted

205

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 boiler uptakes and bunkers or woodwork (corner)

6"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-10"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

16'-0"

Length

11'-0"

Shell plates: Material

Steel ✓

Tensile strength 28-32 tons

Thickness

1 29/64"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end DR

long. seams

DBS. TR. ✓

Diameter of rivet holes in

circ. seams F 1 5/16" B 1 1/2"

Pitch of rivets

F 3.388" B 4.131"

Percentage of strength of circ. end seams

plate F 61.3 B 63.4

rivets F 45.15 B 48.3

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 85.18

rivets 92.4

combined 88.86

Working pressure of shell by Rules

202 lbs

Thickness of butt straps

outer 1 7/8"

inner 1 5/8"

No. and Description of Furnaces in each Boiler

Three Deighton 3 cf

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

24 5/16"

Length of plain part

top ✓

Thickness of plates

crown 1 21/32"

bottom 1 3/32"

Description of longitudinal joint

welded ✓

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

Working pressure of furnace by Rules

203

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 7/16"

Pitch of stays

23 1/4" x 22 1/2" 19 1/2"

How are stays secured

D.N. ✓

Working pressure by Rules

200

Tube plates: Material

front Steel

back "

Tensile strength

26-30 tons

Thickness

27/32"

23/32"

app. 27/32

Mean pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

13 1/2" ✓

Working pressure

front 207

back 215

Girders to combustion chamber tops: Material

Steel ✓

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 8 7/8" x 1 1/8"

Length as per Rule

33 9/16"

Distance apart

9 1/4" ✓

No. and pitch of stays

in each

3 @ 8"

Working pressure by Rules

201

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

2 1/32"

Back

2 1/32"

Top

2 1/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

8" x 9 1/4"

Back

8 7/16" x 8 7/8"

Top

8" x 9 1/4"

Are stays fitted with nuts or riveted over

nuts ✓

Working pressure by Rules

200

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

27/32"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

13/16"

Pitch of stays at wide water space

13 1/2" ✓

Are stays fitted with nuts or riveted over

nuts ✓

Working Pressure

201

Main stays: Material

Steel

Tensile strength

28-32 tons ✓

Diameter

At body of stay, 2 3/4" & 3 1/4"

No. of threads per inch

6

Area supported by each stay

455.6" and 279.2"

Over threads

Working pressure by Rules

203

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 5/8" & 1 7/8" (back)

No. of threads per inch

9

Area supported by each stay

74.8" and 97.6"

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Working pressure by Rules **204 and 218** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turned off part, **1 7/8"** or Over threads }
 No. of threads per inch **9** Area supported by each stay **103"** Working pressure by Rules **206**
 Tubes: Material **Iron** External diameter { Plain **2 1/2"** Stay **2 1/2"** Thickness { **9 w.g.** **5/16"** **3/8"** **1/2"** } No. of threads per inch **9**
 Pitch of tubes **3 3/4" x 3 7/8"** Working pressure by Rules **230** Manhole compensation: Size of opening in shell plate **15 1/2" x 19 1/2"** Section of compensating ring **10 1/2" x 1 29/64"** No. of rivets and diameter of rivet holes **34 @ 1 1/2"**
 Outer row rivet pitch at ends **10 1/4"** Depth of flange if manhole flanged **3"** 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 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 **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 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 **yes**

The foregoing is a correct description,
 For David Rowan & Co. Ltd. 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 - - - } **Machinery report** Total No. of visits **33**

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

The materials and workmanship are good.
 The boilers have been constructed under special Survey in accordance with the Rules. Satisfactorily fitted in the vessel and their safety valves adjusted.

Survey Fee ... £ **Survey Fee** When applied for, 192
 Travelling Expenses (if any) £ : : When received, 192

S. C. Davis.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 20 MAR 1928**

Assigned **See accompanying Mach. Report.**



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