

Rept. No. 24

REPORT ON BOILERS.

GLASGOW REPORT No. 46872

No. 46650

Received at London Office

18 MAY 1927

Date of writing Report

192

When handed in at Local Office

12.5.1927

Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey

8.3.27

Last Survey

11.5.1927

(Number of Visits 13)

Gross

Net

on the

S.S. The Duke

Master

Built at Troon

By whom built

Ailsa SBC Co

Yard No. 400

When built 1927

Engines made at

Troon

By whom made

Ailsa S.B. Co Ltd

Engine No. 135

When made 1927

Boilers made at

Glasgow

By whom made

D. Rowan & Co Ltd

Boiler No. 345

When made 1927

Nominal Horse Power

127

Owners

J. Hay Sons

Port belonging to

Glasgow

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

James Dunlop & Co Ltd, Calderbank & Wm Beaudmont & Co Ltd

(Letter for Record B)

Total Heating Surface of Boilers

2160 sq ft

Is forced draught fitted

no

Coal or Oil fired

coal

No. and Description of Boilers

one single ended marine

Working Pressure 200

Tested by hydraulic pressure to

380

Date of test

11.5.27

No. of Certificate

17417

Can each boiler be worked separately

Area of Firegrate in each Boiler

60 sq ft

No. and Description of safety valves to each boiler

Area of each set of valves per boiler

per Rule

Pressure to which they are adjusted

Are they fitted with easing gear

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'-3"

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

No tank

Is the bottom of the boiler insulated

Largest internal dia. of boilers

15'-6"

Length

10'-9"

Shell plates: Material

Steel

Tensile strength 28-32 tons

Thickness

1 13/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

Percentage of strength of circ. end seams

plate 61.7 86.4

rivets 46.3 47.3

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 85.4

rivets 89.7

Working pressure of shell by Rules

201

Thickness of butt straps

outer 1 1/16"

inner 1 3/16"

No. and Description of Furnaces in each Boiler

three Weighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

47 5/16"

Length of plain part

top

bottom

Thickness of plates

crown 2 1/32"

bottom 2 1/32"

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 13/32"

Pitch of stays

21 7/8" x 21 3/4"

How are stays secured

WN

Working pressure by Rules

200

Tube plates

Material

front Steel

back

Tensile strength

26-30 tons

Thickness

29/32"

49/64"

Lean pitch of stay tubes in nests

10 1/4"

Pitch across wide water spaces

14 1/4"

Working pressure

front 202

back 200

Girders to combustion chamber tops

Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

Centre

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

Length as per Rule

34.6"

Distance apart

8 3/4" & 9 3/8"

No. and pitch of stays

Each

3 @ 8 1/4"

Working pressure by Rules

202

Combustion chamber plates

Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

43/64"

Back

21/32"

Top

43/64"

Bottom

13/16"

Pitch of stays to ditto

Sides 8 1/4" x 9 1/4"

Back 8" x 9 1/4"

Top 8 1/4" x 9 3/8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

202

Front plate at bottom

Material

Steel

Tensile strength

26-30 tons

Thickness

29/32"

Lower back plate

Material

Steel

Tensile strength

26-30 tons

Thickness

25/32"

Pitch of stays at wide water space

13 1/2" x 8"

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

3 1/2" - 3 3/4"

No. of threads per inch

6

Area supported by each stay

465.398 sq in

Working pressure by Rules

215 - 203

Screw stays

Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part

1 9/8"

No. of threads per inch

9

Area supported by each stay

74 sq in

Working pressure by Rules **200** Are the stays drilled at the outer ends **no** Margin stays: Diameter ^(At turned off part, or Over threads) **1 3/4"**
 No. of threads per inch **9** Area supported by each stay **90.82"** Working pressure by Rules **200**
 Tubes: Material **Iron** External diameter ^{Plain 3 1/4" Stay 3 1/4"} Thickness ^{8 W.G. 1/4", 5/16", 3/8"} No. of threads per inch **9**
 Pitch of tubes **4 1/2 x 4 3/8"** Working pressure by Rules **230** Manhole compensation: Size of opening in shell plate **15 1/2" x 19 1/2"** Section of compensating ring **8 1/2" x 1 7/16"** No. of rivets and diameter of rivet holes **32 @ 1 7/16"**
 Outer row rivet pitch at ends **10 1/2"** 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
 How connected to shell Inner radius of crown Working pressure by Rules
 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

The foregoing is a correct description,
 For David Rowan & Co. Ltd. Manufacturer.
 Arch. W. Grierson

Dates of Survey ^{During progress of work in shops - - -} **1927 Mar 9-16-23-25 Apr 11-12-20-28** Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
^{while building} ^{During erection on board vessel - - -} **May 6-9-10-11** Total No. of visits **13**

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

The materials and workmanship are good.
 The boiler has been constructed under Special Survey in accordance with the Rules
 The boiler has been securely fitted on board the vessel and tried under steam with satisfactory results. DCB.

A.L.
 12/5/27

Survey Fee £ 14 : 8 :
 Travelling Expenses (if any) £ : :
 When applied for, **17 MAY 1927**
 When received, **21.5.1927**

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

Committee's Minute **GLASGOW 17 MAY 1927**

GLASGOW 26 JUL 1927

Assigned **TRANSMIT TO LONDON**

See G.S. Rpt. No. 46872

