

Rpt. 5a.

REPORT ON BOILERS.

No. 46855

Received at London Office

27 JUL 1927

Date of writing Report

192

When handed in at Local Office

13. 7. 1927

Port of

Glasgow

No. in Survey held at
Reg. Book.

Glasgow

Date, First Survey

20. 8. 26

Last Survey

11-7-

1927

on the

new steel S/S "BENVENUE".

(Number of Visits 108)

Gross 5920

Tons
Net

Master

Built at

Glasgow

By whom built

Charles Bonnell & Co

Yard No. 407

When built 1927

Engines made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No. 848

When made 1927

Boiler made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No. 848

When made 1927

Nominal Horse Power

675

Owners

Ben Line Steamers Ltd

Port belonging to

Leith.

(W. Thomson. Mgr.)

MULTITUBULAR BOILERS ~~MAIN~~, AUXILIARY, OR ~~DONKEY~~.Manufacturers of Steel *Gutehoffnungshütte Akt. Walsleben - Oberhausen, Germany* (Letter for Record (S) ✓)

Total Heating Surface of Boilers

1400 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

one single ended marine

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

26.4.27

No. of Certificate

17393

Can each boiler be worked separately ✓

Area of Firegrate in each Boiler

53.6 sq ft

No. and Description of safety valves to each boiler

2 - high lift.

Area of each set of valves per boiler

per Rule

3.025 sq ft

as fitted

3.14

Pressure to which they are adjusted

225

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

2' - 3"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2' - 4"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

13' - 6"

Length

11' - 0"

Shell plates: Material

Steel

Tensile strength

28-35 tons

Thickness

1 1/2"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

NR

long. seams

NR S. TR

Diameter of rivet holes in

circ. seams

F 1 5/16"

B 1 3/8"

Pitch of rivets

F 3.42"

B 3.83"

Percentage of strength of circ. end seams

plate

F 61.6

B 64.1

rivets

F 48.4

B 47.5

Percentage of strength of circ. intermediate seam

plate

✓

Percentage of strength of longitudinal joint

plate

85.8

rivets

87.4

combined

89

Working pressure of shell by Rules

221

Thickness of butt straps

outer

1"

inner

1 1/8"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

40 3/16"

Length of plain part

top

bottom

Thickness of plates

crown

39"

bottom

64"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

221

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/4"

Pitch of stays

19" x 17 3/8"

How are stays secured

D.N.

Working pressure by Rules

220

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26-30 tons

Thickness

15"

13"

Mean pitch of stay tubes in nests

10 1/2"

Pitch across wide water spaces

14"

Working pressure

front

222

back

226

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

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

Length as per Rule

31 1/2"

Distance apart

8 3/8"

No. and pitch of stays

in each

2 @ 10"

Working pressure by Rules

220

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

4 1/4"

Back

11/16"

Top

4 1/4"

Bottom

2 1/2"

Pitch of stays to ditto: Sides

10" x 8 3/8"

Back

8 1/4" x 8 1/4"

Top

8 3/8" x 10"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

223

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

15"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

13"

Pitch of stays at wide water space

13 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

223

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay,

or

3" & 2 3/4"

No. of threads per inch

6

Area supported by each stay

339 & 295 sq in

Working pressure by Rules

231 & 222 lb

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part,

or

1 3/4" & 1 5/8"

No. of threads per inch

9

Area supported by each stay

83.7 & 68 sq in

Working pressure by Rules **222 & 224 lb** Are the stays drilled at the outer ends **no** ✓ Margin stays: Diameter { At turned off part, or Over threads **1 7/8"** ✓

No. of threads per inch **9** ✓ Area supported by each stay **154 sq"** Working pressure by Rules **264**

Tubes: Material **Iron** ✓ External diameter { Plain **3 1/2"** ✓ Stay **3 1/2"** ✓ Thickness { **7 W.S.** ✓ **5 1/16 & 3/8"** ✓ No. of threads per inch **9** ✓

Pitch of tubes **4 1/2" x 4 3/8"** ✓ Working pressure by Rules **280** Manhole compensation: Size of opening in shell plate **16 1/2" x 15 1/2"** ✓ Section of compensating ring **9 1/4" x 1 1/2"** No. of rivets and diameter of rivet holes **16 @ 1 3/8"** ✓

Outer row rivet pitch at ends **9 11/16"** ✓ 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 fitted to aux'y blr** 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 Robt
Asst. H. Grierson Manufacturer.

Dates of Survey { During progress of work in shops - - - } **See Accompanying** Are the approved plans of boiler and superheater forwarded herewith **yes**
while building { During erection on board vessel - - - } **Machinery report** (If not state date of approval.)

Total No. of visits **108**

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.
It has been satisfactorily fitted in the vessel and its safety valves adjusted.

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

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

Committee's Minute **GLASGOW 26 JUL 1927**

Assigned **See attached report**

