

## REPORT ON BOILERS.

No. 57024

29 JUN 1936

20 MAY 1936

Date of writing Report

19

When handed in at Local Office

16.5.36

Received at London Office

Port of Glasgow

No. in Reg. Book.

Survey held at

Glasgow

Date, First Survey

17.12.35

Last Survey

15.5.

1936

on the new steel S/S "BRYNYMOR".

(Number of Visits 47)

(Gross

Tons

Net

Master

Built at

Buntisland

By whom built

Buntisland SBCo

Yard No. 197

When built 1936

Engines made at

Glasgow

By whom made

Davie Rowan &amp; Co. Ltd.

Engine No. 991

When made 1936

Boilers made at

Glasgow

By whom made

Davie Rowan &amp; Co. Ltd.

Boiler No. 991

When made 1936

Nominal Horse Power

377

Owners

Port belonging to

Swansea

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

Manufacturers of Steel *Vereinigte Stahlwerke AG, Thyssen Hütte, Muhlheim-Ruhr. & Kaiser-Stahl Company of Scotland Ltd.* *Barro - Schiller Ltd.* (Letter for Record (S) ✓)

Total Heating Surface of Boilers

4372 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

Two single ended

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

24.4.36

No. of Certificate

19711

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

53.6 sq ft

No. and Description of safety valves to each boiler

Two direct spring

Area of each set of valves per boiler

{per Rule 11.6270"

{as fitted 11.870"

Pressure to which they are adjusted

220 lb

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

15"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

yes

Largest <sup>EXT.</sup> internal dia. of boilers

14'-6"

Length

11'-0"

Shell plates: Material

Steel

Tensile strength

28.32 tons

Thickness

1 1/2"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

long. seams

DBS. TR

Diameter of rivet holes in

circ. seams

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

long. seams

1 1/2"

Pitch of rivets

F 3.888"

B 3.986"

Percentage of strength of circ. end seams

{plate

F 61.2 B 62.3

{rivets

F 45.8 B 50.6

Percentage of strength of circ. intermediate seam

{plate

{rivets

Percentage of strength of longitudinal joint

{plate

85

{rivets

93.5

{combined

88.9

Working pressure of shell by Rules

222

Thickness of butt straps

{outer

1 3/32"

{inner

1 7/32"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

40.218"

Length of plain part

{top

{bottom

Thickness of plates

{crown

{bottom

3 9/16"

6 1/4"

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 1/2"

Pitch of stays

22 x 20

How are stays secured

DN

Working pressure by Rules

220

Tube plates: Material

{front

Steel

{back

"

Tensile strength

26-30 tons

Thickness

{front

{back

7/8"

Wings 3/4" bolts 3/2"

Mean pitch of stay tubes in nests

9.672"

Pitch across wide water spaces

13 3/4"

Working pressure

{front

{back

222

W 287. C 233.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

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

Length as per Rule

31.594

Distance apart

8 1/4"

No. and pitch of stays

in each

2 @ 10"

Working pressure by Rules

283

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

4 1/4"

Back

3 1/2"

Top

4 1/4"

Bottom

4 1/4"

Pitch of stays to ditto: Sides

8 1/4" x 10"

Back

8" x 8 1/2"

Top

8 1/4" x 10"

Working pressure by Rules

221

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

5 3/4"

Pitch of stays at wide water space

13 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

220

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

{At body of stay,

{Over threads

3 1/2" &amp; 3"

No. of threads per inch

6

Area supported by each stay

400 x 355 sq"

Working pressure by Rules

231 &amp; 222

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

{At turned off part,

{Over threads

1 5/8" &amp; 1 3/4"

No. of threads per inch

9"

Area supported by each stay

68 &amp; 82.5 sq"



Working pressure by Rules 224 & 220 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 17/8"  
No. of threads per inch 9 Area supported by each stay 9.150" Working pressure by Rules 233  
Tubes: Material Iron External diameter { Plain 3" Thickness { 8 W.S. No. of threads per inch 9  
Pitch of tubes 4 1/8" x 4 1/4" & 4 1/8" x 4 3/16" Working pressure by Rules 250 Manhole compensation: Size of opening in  
shell plate 10 3/4" x 15 1/2" Section of compensating ring 10 3/4" x 1 1/2" 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 Iron  
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 For particulars see Nwe No. C 3689  
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 1.770" Are the safety valves fitted with easing gear yes Working pressure as per  
Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure: \_\_\_\_\_  
tubes \_\_\_\_\_, castings \_\_\_\_\_ and after assembly in place 440 lbs 26/5/36 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 \_\_\_\_\_

The foregoing is a correct description,  
For David Rowan & Co. Ltd.  
Arch. W. Grierson Manufacturer  
Dates { During progress of work in shops - - -  
of Survey while building { During erection on board vessel - - -  
Are the approved plans of boiler and superheater forwarded herewith yes  
(If not state date of approval.)  
SEE ACCOMPANYING MACHINERY REPORT

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 materials and workmanship are good.  
The boilers have been constructed under special survey.  
They are being sent to Burntisland to be fitted in the vessel.

16/5/36

These boilers have been efficiently fitted on board, examined under steam  
& safety valves adjust test 220 lbs

Chk.

Survey Fee £ \_\_\_\_\_ When applied for, \_\_\_\_\_  
Travelling Expenses (if any) £ \_\_\_\_\_ When received, \_\_\_\_\_

S. Dano

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 19 MAY 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT

FRI. 9 JUL 1936

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Lloyd's Register  
Foundation