

## REPORT ON BOILERS.

No. 67498

Received at London Office

Date of writing Report

19

When handed in at Local Office

30.8.43

Port of

Glasgow

No. in Survey held at

Reg. Book.

Glasgow

Date, First Survey

6th Nov 1942

Last Survey

17th Aug. 1943

on the

S/S

"EMPIRE DARING"

(Number of Visits

20)

Tons

Gross

7059

Net

4801

Built at

Pt. Glasgow

By whom built

Wm. Hamilton &amp; Co. Ltd.

Yard No.

459

When built

1943

Engines made at

Glasgow

By whom made

David Brown &amp; Co. Ltd.

Engine No.

1127

When made

1943

Boilers made at

-do-

By whom made

-do-

Boiler No.

1124

When made

1943

Nominal Horse Power

509

Owners

The Admiralty

Port belonging to

Grunn

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

Manufacturers of Steel

Colvilles Ltd.

(Letter for Record

S

Total Heating Surface of Boilers

7248 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

3 Single-ended

Working Pressure

220 lb.

Tested by hydraulic pressure to

380 lb.

Date of test

5.2.43

No. of Certificate

21352

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

55 sq ft

No. and Description of safety valves to each boiler

1-3" direct

Area of each set of valves per boiler

per Rule 12.950"

as fitted 14.140"

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

well clear

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-3"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-3"

Length

11'-6"

Shell plates: Material

S

Tensile strength

29/32 tons

Thickness

1 7/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end double

long. seams

DBS TR

Diameter of rivet holes in

circ. seams B 1 1/2" F 1 3/8"

Pitch of rivets

B 4.13" F 3.435"

Percentage of strength of circ. end seams

plate 86.3-68 F 60

rivets 47.2 47.8

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 85.36

rivets 89

Thickness of butt straps

outer 1 3/32"

No. and Description of Furnaces in each Boiler

3 Dighton

Material

S

Tensile strength

26/30 tons

Smallest outside diameter

3'-9 3/8"

Length of plain part

top

Thickness of plates

crown 11/16"

Description of longitudinal joint

welded

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

End plates in steam space: Material

S

Tensile strength

26/30 tons

Thickness

1 3/8"

Pitch of stays

19" x 22"

How are stays secured

D.H.

Tube plates: Material

front S

Tensile strength

26/30 tons

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9.66"

Pitch across wide water spaces

14"

Girders to combustion chamber tops: Material

S

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

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

Length as per Rule

33 1/2"

Distance apart

8"

No. and pitch of stays

in each

3 @ 8 1/4"

Combustion chamber plates: Material

S

Tensile strength

26/30 tons

Thickness: Sides

2 1/32"

Back

2 3/32"

Top

2 1/32"

Bottom

1 3/16"

Pitch of stays to ditto: Sides

8 1/4" x 8"

Back

10" x 8"

Top

8 1/4" x 8"

Are stays fitted with nuts or riveted over

nuts

Front plate at bottom: Material

S

Tensile strength

26/30 tons

Thickness

15/16"

Lower back plate: Material

S

Tensile strength

26/30 tons

Thickness

1 3/16"

Pitch of stays at wide water space

13 7/16"

Are stays fitted with nuts or riveted over

nuts

Main stays: Material

S

Tensile strength

28/32 tons

Diameter

At body of stay, or Over threads 3" x 3 1/4"

No. of threads per inch

6

Screw stays: Material

S

Tensile strength

26/30 tons

Diameter

At turned off part, or Over threads 1 5/8" x 1 3/4"

No. of threads per inch

9

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Lloyd's Register

Foundation



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

Tubes: Material 5 External diameter { Plain 3"  
Stay 3" Thickness { 8 WG  
1/4", 5/16", 3/8" No. of threads per inch 9

Pitch of tubes 4 1/8" x 4 3/16" Manhole compensation: Size of opening in  
End plate 16" x 12" Section of compensating ring - No. of rivets and diameter of rivet holes -

Outer row rivet pitch at ends - Depth of flange if manhole flanged 4" Steam Dome: Material -

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 - Thickness of crown - No. and diameter of  
stays - Inner radius of crown -

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 Smokestack Manufacturers of { Tubes Copies of Mch. Cert. No. 1678 & 1679  
Steel forgings Lenth.  
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 No 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 - Are the safety valves fitted with easing gear Yes

Pressure to which the safety valves are adjusted 220 lb. Hydraulic test pressure: -

tubes - forgings and castings - and after assembly in place 440 lb. 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 Brown & Co. Ltd. Walter Warkentin. Manufacturer.

Dates of Survey { During progress of 1942 Nov 6, 13, 19, 20 Dec 8, 11, 15, 29.  
work in shops - - 1943 Jan 19 Feb 22, 26 Mar 4, 5, 9, 17, 23. Are the approved plans of boiler and superheater forwarded herewith Yes  
while building { During erection on Apr 6, 14, 22, Aug 19  
board vessel - - -  
Total No. of visits 20.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. Empire Trumpet No. 670.

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

These boilers have been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. They have been satisfactorily installed in the vessel and the safety valves have been adjusted to the working pressure.

The Specification requirements have been carried out satisfactorily.

Survey Fee ... £ See memo : 40/- When applied for, 19  
Travelling Expenses (if any) £ 5/- : - When received, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 31 AUG 1943

Assigned