

# REPORT ON BOILERS.

No. 70023

Received at London Office 11 OCT 1945

Date of writing Report

10

When handed in at Local Office

6. 10. 1945

Port of Glasgow

No. in Survey held at

Glasgow & Grangemouth

Date, First Survey

2. 6. 44

Last Survey

21-9-

1945

on the

S.S. "EMPIRE JEWEL"

(Number of Visits

59

Tons

Gross 2370

Net 1281

Master

Built at

Grangemouth

By whom built

The Grangemouth Dockyard Co. Ltd.

Standard No. 462

When built 1945

Engines made at

Glasgow

By whom made

David Rowan & Co. Ltd.

Engine No. 1173

When made 1945

Boilers made at

- do -

By whom made

- do -

Boiler No. 1173

When made 1945

Nominal Horse Power

242

Owners

The Ministry of War Transport

Port belonging to

Grangemouth

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Bolvelles, Ltd.

(Letter for Record (S)

Total Heating Surface of Boilers

3360 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

One single ended boiler

Working Pressure 220 lb/sq in

Tested by hydraulic pressure to

380 lb/sq in

Date of test

17-5-45

No. of Certificate

21926

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

Yes

No. and Description of safety valves to each boiler

2 1/2" Improved high lift double

Area of each set of valves per boiler

per Rule

8.950"

as fitted

9.80"

Pressure to which they are adjusted

220 lb/sq in

Are they fitted with easing gear

Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

2'-5"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

Open floors

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

16'-0"

Length

12'-0"

Shell plates: Material

S

Tensile strength 29/33 Tons

Thickness

1 1/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

D.R

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

BACK 1 1/8" FRONT 1 7/16"

long. seams

1 1/8"

Pitch of rivets

BACK 4-16" FRONT 3-64"

Percentage of strength of circ. end seams

plate

BACK 62.4 FRONT 60.5

rivets

BACK 47.8 FRONT 46.3

Percentage of strength of circ. intermediate seam

plate

Yes

rivets

Yes

Percentage of strength of longitudinal joint

plate

85.5

rivets

85.8

combined

88.2

Working pressure of shell by Rules

Yes

Thickness of butt straps

outer

1 5/32"

inner

1 3/32"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

S

Tensile strength

26/30 Tons

Smallest outside diameter

3'-10 13/32"

Length of plain part

top

Yes

bottom

Yes

Thickness of plates

crowd

45"

bottom

64"

Description of longitudinal joint

Welded

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

Yes

Working pressure of furnace by Rules

Yes

End plates in steam space: Material

S

Tensile strength 26/30 Tons

Thickness

1 7/16"

Pitch of stays 20" x 2'-0 1/2"

How are stays secured

D.N.

Working pressure by Rules

Yes

End plates: Material

front

S

back

S

Tensile strength

26/30 Tons

Thickness

3/8"

35/32"

Can pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

13 1/2"

Working pressure

front

Yes

back

Yes

Access to combustion chamber tops: Material

S

Tensile strength 28/32 Tons

Depth and thickness of girder

Centre 2 @ 9 3/4" x 7/8"

Length as per Rule

2'-10 9/16"

Distance apart

9 3/4"

No. and pitch of stays

Each 3 @ 8 1/4"

Working pressure by Rules

Yes

Combustion chamber plates: Material

S

Tensile strength

26/30 Tons

Thickness: Sides

2 3/32"

Back

2 1/32"

Top

2 3/32"

Bottom

2 7/32"

Pitch of stays to ditto: Sides

9 3/4" x 8 1/4"

Back

8 1/2" x 8"

Top

8 1/4" x 9 3/4"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

Yes

Front plate at bottom: Material

S

Tensile strength 26/30 Tons

Thickness

3/8"

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

Working Pressure

220 lb/sq in

Main stays: Material

S

Tensile strength 28/32 Tons

At body of stay,

3 1/2" x 3 1/4"

No. of threads per inch

6

Area supported by each stay

Over threads

Yes

Working pressure by Rules

Yes

Screw stays: Material

S

Tensile strength

26/30 Tons

At turned off part,

1 5/8" x 1 3/4"

No. of threads per inch

9

Area supported by each stay

Over threads

Yes



Working pressure by Rules ☒ Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, ☒ or Over threads 1 7/8" x 2 1/4"  
No. of threads per inch 9 Area supported by each stay ☒ Working pressure by Rules ☒  
Tubes: Material Steel External diameter { Plain 2 1/2" Thickness { 9 W.G. No. of threads per inch 9  
Stay 2 1/2" 5/16" 3/8" 7/16"  
Pitch of tubes 3 5/8" x 3 3/4" Working pressure by Rules ☒ Manhole compensation: Size of opening in  
end shell 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 1/8" 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 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

Manufacturers of

Tubes

Steel forgings

Steel castings

Internal diameter and thickness of tubes

Number of elements

Material 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

forgings and 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 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,

For David Rowan & Co. Ltd.  
Arch. H. Grierson

Manufacturer.

Dates of Survey { During progress of work in shops - -  
while building { During erection on board vessel - - -

See attached sketch

Are the approved plans of boiler and superheater forwarded herewith Yes  
(If not state date of approval.)

Total No. of visits 1

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "Empire Junna" Glas. Rept. No. 69254

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under special survey in accordance with the Society's Rules and approved plans. The materials and workmanship are good. It has 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 Machy Rept.  
Travelling Expenses (if any) £

When applied for, 19  
When received, 19

Jas. Stevenson & M. Dal

Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 9 OCT 1945

Assigned SEE ACCOMPANYING MACHINERY REPORT



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Foundation