

REPORT ON BOILERS.

No. 13590

Received at London Office 27 SEP 1943

Date of writing Report

19

When handed in at Local Office

19

Port of

Belfast.

No. in Survey held at
Reg. Book.

Belfast.

Date, First Survey

Visits included in F.E. duty.

Last Survey

10

on the

MV. EMPIRE INDUSTRY

(Number of Vistas)

8203

Tons

+774.9.

Built at

Belfast.

By whom built

Harland & Wolff Ltd

Yard No. 1159

When built 1943

Engines made at

Belfast.

By whom made

Harland & Wolff Ltd.

Engine No. 1159

When made 1943.

Boilers made at

Belfast.

By whom made

Harland & Wolff Ltd.

Boiler No. 1159

When made 1943.

Nominal Horse Power

502

Owners

Ministry of War Transport

Port belonging to

Belfast.

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel

Colville Ltd.

(Letter for Record

S

Total Heating Surface of Boilers

3836

Is forced draught fitted

Yes

Fuel Oil fired EXH GAS.

No. and Description of Boilers

Two single ended cylindrical multitubular.

Working Pressure

150/lbs

Tested by hydraulic pressure to

275/lbs

Date of test 16.3.43

No. of Certificate 1230.

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

One double improved high lift type

Area of each set of valves per boiler

per Rule 7.26 sq in

as fitted 7.46 sq in

Pressure to which they are adjusted 150/lbs

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

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Boiler house

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

12'-6"

Length

11'-0"

Shell plates: Material

Steel

Tensile strength

29/33 tons

Thickness

7/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

DR.

long. seams

TR. DBS.

Diameter of rivet holes in

circ. seams 13/32"

long. seams 1 1/32"

Pitch of rivets

3.038"

6 1/16"

Percentage of strength of circ. end seams

plate 64

rivets 56.1

Percentage of strength of circ. intermediate seams

plate

rivets

Percentage of strength of longitudinal joint

plate 84.6

rivets 106.7

combined 90.5

Working pressure of shell by rules 154.6/lbs

Thickness of butt straps

outer 1 1/16"

inner 13/16"

No. and Description of Furnaces in each Boiler

Two corrugated "Brighton" Section.

Material

Steel

Tensile strength

26/30 tons

Smallest outside diameter

4'2"

Length of plain part

top

Thickness of plates

crown 1/2"

bottom 1/2"

Description of longitudinal joint

Fine weld.

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

End plates in steam space: Material

Steel

Tensile strength

26/30 tons

Thickness

15/16"

Pitch of stays

various

How are stays secured

nuts and washers inside and outside

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30 tons

26/30 tons

Thickness

7/8"

13/16"

Mean pitch of stay tubes in nests

8.54"

Pitch across wide water spaces

13 1/2"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

8 1/4 x 2 x 3/4"

Length as per Rule

29.94"

Distance apart

11"

No. and pitch of stays

in each

3 @ 7 1/4"

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 1/4 x 9 3/4"

Back

9 1/4 x 8"

Top

11 x 7 1/4"

Are stays fitted with nuts or riveted over all other riveted.

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

15/16"

Pitch of stays at wide water space

13"

Are stays fitted with nuts or riveted over

Riveted over.

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

At body of stay, or Over threads 2 1/2"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/30 tons

Diameter

At turned off part, or Over threads 1 1/2, 1 5/8, 2"

No. of threads per inch

9

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Foundation

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Are the stays drilled at the outer ends ho. ✓ Margin stays: Diameter { At turned off part, 1 5/8 or Over threads. 1 5/8 ✓
No. of threads per inch 9
Tubes: Material holders steel External diameter { Plain 2 1/2 Stay 2 1/2 Thickness { 10 LSG. 1/4. 5/16. 3/8 No. of threads per inch 9.
Pitch of tubes 3 3/4 x 3 7/8 ✓ Manhole compensation: Size of opening in shell plate 16 1/2 x 12 1/2 Section of compensating ring 2 [10 x 3/4 + (1 x 1)] No. of rivets and diameter of rivet holes 28 @ 1 7/8 dia
Outer row rivet pitch at ends 9 ✓ Depth of flange if manhole flanged 3 3/8 in end plate 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

Manufacturers of

Tubes
Steel forgings
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
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

FOR HARLAND AND WOLFF, LIMITED

The foregoing is a correct description,

Secretary Manufacturer.

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

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

Total No. of visits

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. EMPIRE BOMBARDIER. (Rpt No 13456)

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boilers have been constructed under special Survey in accordance with the Society's rules and the approved plans. The materials and workmanship are good. The boilers have been efficiently installed on board the vessel, all safety valves adjusted under steam and accumulation test carried out with satisfactory results.

Survey Fee ... £ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

R. Shaw.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES 5 OCT 1943

Assigned

see minute on I.B. Rpt.



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