

REPORT ON BOILERS.

No. 51932.

Received at London Office

Date of writing Report

4-12-42 S.

19

When handed in at Local Office

19

Port of HULL.

No. in
Reg. Book.

Survey held at HULL.

Date, First Survey

31. 7. 42.

Last Survey

17. 2.

19 43.

on the H.M.T. GRENADIER.

(Number of Visits 63.)

Gross 580

Net 182

Built at BEVERLEY.

By whom built Cook Welton & Gemmell Ltd

Yard No. 703. When built 1943

Engines made at HULL.

By whom made Chas. J. Holmes Ltd

Engine No. 1634 When made

Boilers made at HULL.

By whom made Chas. J. Holmes Ltd

Boiler No. 1634 When made

Nominal Horse Power 165.

Owners THE ADMIRALTY.

Port belonging to

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Company of Glasgow Ltd.

(Letter for Record S)

Total Heating Surface of Boilers 2551 sq. ft.

Is forced draught fitted Yes.

Coal or Oil fired Coal

No. and Description of Boilers One S.B.

Working Pressure 225.

Tested by hydraulic pressure to 388 lb./sq. in.

Date of test 7/12/42

No. of Certificate 4172

Can each boiler be worked separately

Area of Firegrate in each Boiler 64 sq. ft.

No. and Description of safety valves to each boiler 2. Spring loaded

Area of each set of valves per boiler

per Rule 17.5 (for Superheated).

as fitted 19.24.

Pressure to which they are adjusted 225 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

Smallest distance between boilers or uptakes and bunkers or woodwork 12".

Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated No.

Largest internal dia. of boilers 15'-9 1/16".

Length 11'-0".

Shell plates: Material Steel.

Tensile strength 31-35 ton/14"

Thickness 1 1/32".

Are the shell plates welded or flanged No.

Description of riveting: circ. seams

end D.R. Lap

long. seams T.R. - D.B.S.

Diameter of rivet holes in

circ. seams 1 1/32"

long. seams 1 1/2".

Pitch of rivets 3 7/8"

9 1/16".

Percentage of strength of circ. end seams

plate 62. %.

rivets 44. %.

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 84.31 %.

rivets 86.9 %.

combined 85.98 %.

Thickness of butt straps

outer 1 5/32"

inner 1 9/32"

No. and Description of Furnaces in each Boiler 3. C.F. Deighton Type.

Material Steel

Tensile strength 26-30 ton/14"

Smallest outside diameter 3'-10".

Length of plain part

Thickness of plates

crown 2 3/32"

bottom 2 3/32"

Description of longitudinal joint Weld

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

End plates in steam space: Material Steel

Tensile strength 26-30 ton/14"

Thickness 1 1/4".

Pitch of stays 19 1/4" x 19 1/8"

How are stays secured Nut and washers, large outside, small inside.

Tube plates: Material

front Steel

back Steel

Tensile strength 26-30 ton/14"

Tensile strength 26-30 ton/14"

Thickness 3 1/32"

29 3/32"

Mean pitch of stay tubes in nests 10-675.

Pitch across wide water spaces 14 1/4" x 9 1/2".

Girders to combustion chamber tops: Material Steel

Tensile strength 29-33 ton/14"

Depth and thickness of girder

at centre 9" x 7 1/8" Double

Length as per Rule 32 1/4"

Distance apart 9 1/4".

No. and pitch of stays

in each 3 @ 7 1/2".

Combustion chamber plates: Material Steel

Tensile strength 26-30 ton/14"

Thickness: Sides 2 3/32"

Back 2 3/32"

Top 1 1/16"

Bottom 1 5/16".

Pitch of stays to ditto: Sides 9 3/8" x 8.

Back 9 1/2" x 8 1/4".

Top 9 1/4" x 7 1/2".

Are stays fitted with nuts or riveted over Nuts.

Front plate at bottom: Material Steel

Tensile strength 26-30 ton/14"

Thickness 3 1/32"

Lower back plate: Material Steel

Tensile strength 26-30 ton/14"

Thickness 2 9/32"

Pitch of stays at wide water space 14 1/2" x 9 1/2".

Are stays fitted with nuts or riveted over Nuts

Main stays: Material Steel

Tensile strength 28-32 ton/14"

Diameter

At body of stay, 3 3/8"

or Over threads

No. of threads per inch 8.

Screw stays: Material Steel

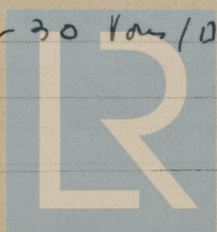
Tensile strength 26-30 ton/14"

Diameter

At turned off part, 1 3/4"

or Over threads

No. of threads per inch 10.

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004684-004692-0301

Are the stays drilled at the outer ends No.

Margin stays: Diameter { At turned off part, $1\frac{7}{8}$; 2", 2 $\frac{1}{8}$ "
or
Over threads

No. of threads per inch 10. ✓

Tubes: Material L.W. Iron. External diameter { Plain 3 $\frac{1}{2}$ "
Stay 3 $\frac{1}{2}$ " ✓

Thickness { 7/16" ✓ 3/8" ✓ 7/16" ✓ No. of threads per inch 9. ✓

Pitch of tubes 4 $\frac{3}{4}$ " x 4 $\frac{3}{4}$ " ✓

Manhole compensation: Size of opening in

shell plate 12" (x 16") ✓ Section of compensating ring 3'-8 $\frac{1}{4}$ " x 1 $\frac{5}{32}$ " No. of rivets and diameter of rivet holes 62 @ 1 $\frac{1}{2}$ "

Outer row rivet pitch at ends 10.74" Depth of flange if ^{Bottom} manhole flanged 3 $\frac{1}{2}$ "

Steam Dome: Material None

Tensile strength _____ Thickness of shell _____

Description of longitudinal joint Compensator plate fitted to
_____ same plate used in
_____ due

Diameter of rivet holes _____

Pitch of rivets _____

Percentage of strength of joint {

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 None. (S.V.s. supplied
with view to future conversion).

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 Yes.

The foregoing is a correct description,
FOR CHARLES D. HOLMES & CO., LTD.

Manufacturer.

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

See machinery
report attached.

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 No.

If so, state Vessel's name and Report No. Design based on "LADY MADELEINE"

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

This boiler has been constructed under special survey in accordance with the approved Admiralty plans and the Rules.

The Workmanship and material are good and, when subjected to an hydraulic test of 388 lbs. sq. in. it was found satisfactory in every respect.

Boiler examined under steam, safety valves adjusted as above, accumulation test held and combustion chambers of furnaces afterwards examined after all trials and found satisfactory in every respect. W.H.

Survey Fee ... £ : : _____

When applied for, _____ 19

Travelling Expenses (if any) £ : : _____

When received, _____ 19

J. Philson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute _____

MAR 19 1943

Assigned _____

See Incl. J.E. 51932



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