

REPORT ON BOILERS.

No. 51966.

56 APR 1943

Received at London Office

19 APR 1943

Date of writing Report 3-2-

1943.

When handed in at Local Office

19

Port of HULL

No. in Survey held at HULL.

Date, First Survey 9. 10. 42.

Last Survey 26. 3. 19 43.

Reg. Book.

(Number of Visits 65.)

580.

on the H.M.T.

SAPPER.

Tons

Gross

182.

Net

Built at BEVERLEY.

By whom built

Cook, Welton & Gemmell & Co

Yard No. 705.

When built 1943

Engines made at HULL.

By whom made

Chas. D. Holmes & Co

Engine No. 1638

When made

Boilers made at HULL.

By whom made

Chas. D. Holmes & Co

Boiler No. 1638

When made

Nominal Horse Power 165.

Owners

THE ADMIRALTY.

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Company of Scotland.

(Letter for Record 5)

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 lb/sq. in.

Tested by hydraulic pressure to

388 lb/sq. in.

Date of test

21-1-43.

No. of Certificate

4177.

Can each boiler be worked separately

—

Area of Firegrate in each Boiler

64

sq. ft.

No. and Description of safety valves to each boiler

Two Spring loaded

Area of each set of valves per boiler

17.5

per boiler

Pressure to which they are adjusted

225.

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 tons/sq. in.

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"

Pitch of rivets

3 3/8"

Percentage of strength of circ. end seams

plate 62.1%

rivets 44.0%

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 84.3%

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. Leighton Section

Material

Steel

Tensile strength

26-30 tons/sq. in.

Smallest outside diameter

3'-10".

Length of plain part

top 23"

bottom 23"

Thickness of plates

circ. seams

23/32"

Description of longitudinal joint

Welded

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

End plates in steam space: Material

Steel

Tensile strength

26-30 tons/sq. in.

Thickness

1 1/4".

Pitch of stays

19 1/4" x 19 1/8"

How are stays secured

Nuts & washers inside Nuts & large washers outside

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons/sq. in.

Thickness

29/32"

Mean pitch of stay tubes in nests

10.675.

Pitch across wide water spaces

14 1/2" x 9 1/2"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33 tons/sq. in.

Depth and thickness of girder

at centre

9" x 7/8" 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 tons/sq. in.

Thickness: Sides

23/32"

Back

23/32"

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 tons/sq. in.

Thickness

3 1/32".

Lower back plate: Material

Steel

Tensile strength

26-30 tons/sq. in.

Thickness

29/32"

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 tons/sq. in.

Diameter

At body of stay, 3 3/8"

or Over threads

No. of threads per inch

8 thread.

Screw stays: Material

Steel

Tensile strength

26-30 tons/sq. in.

Diameter

At turned off part, 1 3/4"

or Over threads

No. of threads per inch

10 thread.

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Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, 1 7/8", 2", 2 1/8" or Over threads

No. of threads per inch 10.

Tubes: Material L.W. Iron. External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { 7/16", 7/8", 7/16" No. of threads per inch 9.

Pitch of tubes 4 3/4" x 4 3/4" Manhole compensation: Size of opening in shell plate (16" x 12") Section of compensating ring 3'-8 1/4" x 1 1/32" No. of rivets and diameter of rivet holes 62 @ 1 1/2" Di.

Outer row rivet pitch at ends 10.74" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material NONE

Tensile strength Thickness of shell Description of longitudinal joint Can penetrate plate fitted to suit done for future alteration.

Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets

Internal diameter Thickness of crown Steam dome fitted 247 No. and diameter of stays See HWC rpt 104315

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 (Safety Valves fitted to allow of change over to Superheat). 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

tubes forgings and castings and after assembly in place

valves fitted to free the superheater from water where necessary

Hydraulic test pressure: Are drain cocks or

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.
W.R. Evans Manufacturer.

Dates of Survey { During progress of work in shops - - See machinery report attached. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building { During erection on board vessel - - Total No. of visits

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. H.M.T. GRENADIER

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

This Boiler has been constructed under Special Survey in accordance with the approved plans and the Rules.

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

[Boiler examined under steam, safety valves adjusted as above, accumulation test held afterwards examined from back end on completion of all trials]

Survey Fee ... £ : : When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

W.R. Evans
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See F.E. machy rpt