

## REPORT ON BOILERS.

No. 51542.

Date of writing Report

19

When handed in at Local Office

19

Port of HULL.

Received at London Office 19 MAR 1942

24 JAN 1942

No. in  
Book.

Survey held at

HULL.

Date First Survey

12. 8. 41.

Last Survey

15. 2. 42.

19

on the S. Tug.

EMPIRE LINDEN

(Number of visits 48.)

Gross 280.

Net 240.

Built at HESSLE.

By whom built Richard Dunston &amp; Co.

Yard No. 419. When built 1942-2

Engines made at HULL.

By whom made Char. D. Holmes. Ltd

Engine No. 1578. When made 1942-2

Boilers made at HULL.

By whom made Char. D. Holmes. Ltd

Boiler No. 1578. When made 1942-2.

Nominal Horse Power 177.

Owners The Ministry of War Transport.

Port belonging to

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

Manufacturers of Steel Steel Company of Scotland.

(Letter for Record 8)

Total Heating Surface of Boilers 2778 sq. ft.

Is forced draught fitted Yes.

Coal or Oil fired Coal

No. and Description of Boilers One S.B.

Working Pressure 210 lb./sq. in.

Tested by hydraulic pressure to 365 lb./sq. in. Date of test 30/1/41. No. of Certificate 4127. 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 18.6 sq. ft. 15.6 sq. ft. as fitted 19.24 sq. ft. Pressure to which they are adjusted 210 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 16 1/2".

Is oil fuel carried in the double bottom under boilers -

Smallest distance between shell of boiler and tank top plating None

Is the bottom of the boiler insulated No.

Largest internal dia. of boilers 15'-9 1/4" Length 11'-6".

Shell plates: Material Steel.

Tensile strength 31 to 35 tons/sq. in.

Thickness 1 3/8" Are the shell plates welded or flanged No.

Description of riveting: circ. seams { end D.R. Lap. inter. -

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

Diameter of rivet holes in { circ. seams 1 3/32" long. seams 1 3/32"

Pitch of rivets { 3 3/8" 9 1/8"

Percentage of strength of circ. end seams { plate 63.71% rivets 43.33%

Percentage of strength of circ. intermediate seam { plate 84.6% rivets 85.5% combined 86.3%

Percentage of strength of longitudinal joint { plate 84.6% rivets 85.5% combined 86.3%

Thickness of butt straps { outer 1 1/16" inner 1 3/16"

No. and Description of Furnaces in each Boiler 3. c.f. Deighra Section

Material Steel

Tensile strength 26/30 tons/sq. in.

Smallest outside diameter 3'-10".

Length of plain part { top 3' 11/16" bottom 3' 11/16"

Thickness of plates { crown 3' 11/16" bottom 3' 11/16"

Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom None

End plates in steam space: Material Steel.

Tensile strength 26/30 tons/sq. in.

Thickness 1 3/32"

Pitch of stays 18 5/8" x 19 1/4"

How are stays secured Double nuts on washers.

Tube plates: Material { front Steel back Steel

Tensile strength { 26/30 tons/sq. in. do.

Thickness { 1 5/16" 7/8"

Mean pitch of stay tubes in nests 9 3/16"

Pitch across wide water spaces 13 1/2" x 8 1/2".

Girders to combustion chamber tops: Material Steel.

Tensile strength 29/33 tons/sq. in.

Depth and thickness of girder

at centre 9 1/4" x 7 3/8" x 2

Length as per Rule 32 29/32"

Distance apart 9 1/2"

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 2 3/32"

Back 2 3/32"

Top 1 1/16"

Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/4" x 9 1/2"

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

Top 7 1/2" x 9 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 1 5/16"

Lower back plate: Material Steel

Tensile strength 26/30 tons/sq. in.

Thickness 7/8"

Pitch of stays at wide water space 13 3/4" x 9 3/8"

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, or Over threads 3 1/4"

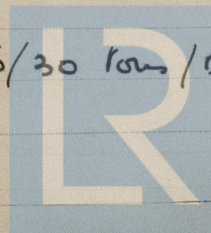
No. of threads per inch 8.

Screw stays: Material Steel

Tensile strength 26/30 tons/sq. in.

Diameter { At turned off part, or Over threads 1 3/4"

No. of threads per inch 10.



© 2021

Lloyd's Register  
Foundation

008003-008019-0062



Are the stays drilled at the outer ends ☒ No

Margin stays : Diameter { At turned off part, ☒ or ☒ Over threads ☒ 2", 2 1/8".

No. of threads per inch 10.

Tubes : Material L/W. Iron External diameter { Plain 3" Stay 3" Thickness { 5/16", 3/8", 7/16" No. of threads per inch 9.

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

Outer row rivet pitch at ends 9 1/8" Depth of flange if manhole flanged 3 3/8" Steam Dome : Material None

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 ☒ 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.  
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 If so, state Vessel's name and Report No.

### 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 a hydraulic test of 365 lbs /sq in it was found satisfactory in every respect.

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 27 MAR 1942

Assigned See Hul 7.6 51542