

REPORT ON BOILERS.

No. 90900

Received at London Office

-9 JAN 1934

Date of writing Report

7th Decr 1934

When handed in at Local Office

8th Decr 1934

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Newcastle-on-Tyne

Date, First Survey

19 June 1933

Last Survey

5-1-

1934

on the

S.S. "ARCWEAR"

(Number of Visits)

Tons

Gross 4157

Net 2603

Built at

Sunderland

By whom built

Short Bros.

Yard No. 443

When built 1934.

Engines made at

Newcastle-on-Tyne

By whom made

North Eastern Marine Eng. Co. Ltd.

Engine No. 2797

When made 1934.

Boilers made at

Newcastle-on-Tyne

By whom made

North Eastern Marine Eng. Co. Ltd.

Boiler No. 2797

When made 1934.

Nominal Horse Power

357.

Owners

Arcwear Shipping Co.

Port belonging to

London

(Essexwood Arc Form Ship Ltd.)

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

Manufacturers of Steel

Steel Company of Scotland.

Total Heating Surface of Boilers

1305 sq ft

(Letter for Record S.)

Pressure and Description of Boilers

One Single Ended

Is forced draught fitted

No

Coal or Oil fired coal

Boilers fitted by hydraulic pressure to

280 lbs/sq in

Date of test 18.8.33

No. of Certificate

600

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

34 sq ft

No. and Description of safety valves to each boiler

6-6-0"

Two direct spring loaded

Area of each set of valves per boiler

per Rule

7.96 sq ft

as fitted

Pressure to which they are adjusted

225 lbs/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

Minimum distance between boilers or uptakes and bunkers or woodwork

8'-0"

Is oil fuel carried in the double bottom under boilers

No

Minimum distance between shell of boiler and tank top plating

2'-3"

Is the bottom of the boiler insulated

yes

Greatest internal dia. of boilers

11'-9 1/16"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength

29/33 tons/sq in

Thickness

1 5/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D.R.

Riv. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

long. seams

1 1/4"

Pitch of rivets

3 3/4"

8 9/16"

Percentage of strength of circ. end seams

plate

66.6

rivets

44.8

Percentage of strength of circ. intermediate seam

plate

85.4

rivets

Percentage of strength of longitudinal joint

plate

92.1

rivets

89.2

Working pressure of shell by Rules

222 lbs/sq in

Thickness of butt straps

outer 7/8"

inner 1"

No. and Description of Furnaces in each Boiler

2 Corrugated (Deighton).

Material

Steel

Tensile strength

26/30 tons/sq in

Smallest outside diameter

3'-5 9/16"

Thickness of plain part

top

bottom

Thickness of plates

crown

bottom

2 1/2"

Description of longitudinal joint

weld

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

None

Working pressure of furnace by Rules

231 lbs/sq in

Plates in steam space: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

1 5/16"

Pitch of stays 15" x 22"

Are stays secured

D. Nuts

Working pressure by Rules

237 lbs/sq in

Plates: Material

front Steel

back Steel

Tensile strength

26/30 tons/sq in

Thickness

3 1/2"

23 3/32"

Pitch of stay tubes in nests

8 7/8"

Pitch across wide water spaces

14 1/2" x 8 3/4"

Working pressure

front

226 lbs/sq in

back

232 lbs/sq in

Access to combustion chamber tops: Material

Steel

Tensile strength

29/33 tons/sq in

Depth and thickness of girder

No. and pitch of stays

Centre

8 1/2" x 20 3/4"

Length as per Rule

2'-4"

Distance apart

10 1/2"

Thickness

20 8 1/4"

Working pressure by Rules

229 lbs/sq in

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness: Sides

3/4"

Back

23 3/32"

Top

3/4"

Bottom

3/4"

Pitch of stays to ditto: Sides

10 1/2" x 8 1/4"

Back

9 1/4" x 8 1/8"

Top

10 1/2" x 8 1/4"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

222 lbs/sq in

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

3 1/2"

Lower back plate: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

3 1/2"

31 1/32"

Pitch of stays at wide water space

14 1/2" x 8 1/8"

Are stays fitted with nuts or riveted over

Nuts

Shipping Pressure

280 lbs/sq in

Main stays: Material

Steel

Tensile strength

28/32 tons/sq in

Pitch of stays

At body of stay, 3"

Over threads, 3 1/4"

No. of threads per inch

6

Area supported by each stay

330 sq in

Working pressure by Rules

237 lbs/sq in

Screw stays: Material

Steel

Tensile strength

26/30 tons/sq in

Pitch of stays

At turned off part, 1 3/4"

Over threads, 1 7/8"

No. of threads per inch

9

Area supported by each stay

75.25 sq in

96.5 sq in

Working pressure by Rules 241 1/2 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8 or Over threads 1 7/8 }
 No. of threads per inch 9 Area supported by each stay 96.5 Working pressure by Rules 221 lbs./sq
 Tubes: Material S/S Steel External diameter { Plain } 3 1/4 Thickness { 8 L.S.G. } No. of threads per inch 9
 Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 230 lbs./sq Manhole compensation: Size of opening in
 shell plate 16" x 12" Section of compensating ring none - plate flange No. of rivets and diameter of rivet holes ✓
 Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4 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 ✓ 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 none Manufacturers of { Tubes ✓ 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 ✓ Working pressure as per
 Rules ✓ Pressure to which the safety valves are adjusted ✓ Hydraulic test pressure:
 tubes ✓, 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 ✓

The foregoing is a correct description ✓
 Manufacturer ✓

Dates of Survey { During progress of work in shops - - } See Machinery Report Are the approved plans of boiler and superheater forwarded herewith yes
 while building { During erection on board vessel - - } Total No. of visits ✓

Is this Boiler a duplicate of a previous case no 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 Rules and approved plan; the materials and workmanships are good. The Boiler has been satisfactorily installed in the vessel, examined under steam and found satisfactory.

Survey Fee See Report on Machinery When applied for, 10
 Travelling Expenses (if any) £ ✓ When received, 10

For Wm Butler & Self,
 A.B. Forster
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 9 JAN 1934
 Assigned ✓

See No 90900