

REPORT ON BOILERS.

No. 32798

Received at London Office

FEB -8 1940

Date of writing Report

192

When handed in at Local Office

18 Jan 1940 Port of

Sunderland

No. in Survey held at

Sunderland

Date, First Survey

Last Survey 12 Jan 1940

on the

Screw Steamer "DAY DAWN"

(Number of Visits

Gross 4768
Net 2772

Master

Built at Sunderland

By whom built

W. Pickering & Sons Ltd. Yard No. 241

When built 1940

Engines made at

Manchester

By whom made

Richardsons Leighton Ltd.

Engine No.

H 2694 When made 1939 1940

Boilers made at

Sunderland

By whom made

G. Clark (1938) Ltd.

Boiler No.

H 2694 When made 1940.

and nominal Horse Power

423.

Owners

Claymore Shipping Co. Ltd.

Port belonging to

Cardiff.

RETAIN

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Appleby Dinningham Steel Co. Ltd.

(Letter for Record S.)

Total Heating Surface of Boilers

1555 sq ft

Is forced draught fitted

Yes.

Coal or Oil fired

Coal

No. and Description of Boilers

One cylindrical multitubular marine

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

4/12/39

No. of Certificate

H 313.

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

39 sq ft

No. and Description of safety valves to each boiler

Two Lockport Imp. High Lift.

Area of each set of valves per boiler

per Rule 4.14 sq ft

as fitted 4.81 sq ft

Pressure to which they are adjusted

220

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

6'-0"

Is oil fuel carried in the double bottom under boilers

no.

Smallest distance between shell of boiler and tank top plating

3'-0"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

12'-3 9/16"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 1/32"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

and

D.R. Lap.

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams 1 1/4"

long. seams

Pitch of rivets

3 1/2"

inter.

8 1/2"

Percentage of strength of circ. end seams

plate 64.3

rivets 45.4

Percentage of strength of circ. intermediate seam

plate

85.3

Percentage of strength of longitudinal joint

plate 85.3

rivets 88.0

combined 88.3

Working pressure of shell by Rules

225.

Thickness of butt straps

outer 15/16"

inner 1 1/16"

No. and Description of Furnaces in each Boiler

3 Corrugated (Leighton).

Material

Steel

Tensile strength

26/30.

Smallest outside diameter

2'-8 1/4"

Length of plain part

top

bottom

Thickness of plates

crown 1/2"

bottom

Description of longitudinal joint

welded.

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

Working pressure of furnace by Rules

223

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

15/16"

Pitch of stays 22" x 15"

How are stays secured

Double nuts.

Working pressure by Rules

228

Tube plates: Material

front Steel

back

Tensile strength

26/30

Thickness

29/32

3/4"

Mean pitch of stay tubes in nests

8 1/16"

Pitch across wide water spaces

13 1/2"

Working pressure

front 236

back 282.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder

at centre

8" 2 @ 3/4"

Length as per Rule

2'-5 1/16"

Distance apart

8" + 1/2"

No. and pitch of stays

in each

2 @ 9/4"

Working pressure by Rules

240

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

23/32"

Back

2 1/32"

Top

23/32"

Bottom

15/16"

Pitch of stays to ditto:

Sides 9 1/4" x 8 1/2"

Back

8" x 8"

Top

9 1/4" x 8"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

Sides 230

Backs 234

Front plate at bottom: Material

Steel

Tensile strength

26/30.

Thickness

29/32"

Lower back plate: Material

Steel

Tensile strength

26/30.

Thickness

7/8"

Pitch of stays at wide water space

14 3/4" x 8"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

222

Main stays: Material

Steel

Tensile strength

28/32.

Diameter

At body of stay, 3/8"

or

Over threads

No. of threads per inch

6.

Area supported by each stay

330 sq in.

Working pressure by Rules

223.

Ch. Dept. Side 13/4"

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At body of part, 1 1/8"

or

Over threads

No. of threads per inch

9.

Area supported by each stay

440 sq in.

Diameter

At body of part, 1 1/8"

or

Over threads

No. of threads per inch

9.

Area supported by each stay

486 sq in.

Back 64 sq in.

W382-0218

Registered Foundation

Seps 245
 Sides 230
 Backs 237

Working pressure by Rules *300* Are the stays drilled at the outer ends *no.* Margin stays: Diameter *1 1/8"* At turned off part, or Over threads
 No. of threads per inch *9.* Area supported by each stay *91 sq.* Working pressure by Rules *234.*
 Tubes: Material *Iron.* External diameter Plain *2 1/2"* Stay *2 1/2"* Thickness *8 WG. 7/16 3/8 5/16* No. of threads per inch *9.*
 Pitch of tubes *3 3/4" x 3 3/4"* Working pressure by Rules *300.* Manhole compensation: Size of opening
 shell plate *(Boiler End)* Section of compensating ring *✓* No. of rivets and diameter of rivet holes *✓*
 Outer row rivet pitch at ends *✓* Depth of flange if manhole flanged *✓* 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
 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 at
 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 *Yes.*
 The foregoing is a correct description,
A. J. Berry Manufacturer

Dates of Survey During progress of work in shops - - - *Please see Mech. Rpt.* 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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This boiler has been constructed under Special Survey in accordance with the approved plan & the Rules of the Society.
The materials & workmanship are good.
On completion the boiler has been tested by hydraulic pressure of 320 lbs/sq. & found tight & sound. It has been securely fitted on board the vessel, & rammed under steam & safety valves adjusted to working pressure in accordance with the Rules.
In recommendation please see Mech. Rpt.

Survey Fee £ *See Mech. Rpt.* When applied for, 192
 Travelling Expenses (if any) £ : : : When received, 192

J. H. Raw.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 20 FEB 1940*
 Assigned *See Old. J.E. 32798*

