

REPORT ON BOILERS.

No. 29302

Received at London Office

10 AUG 1926

Date of writing Report

192

When handed in at Local Office

14th Aug 1926

Port of Sunderland

No. in Surrey held at Reg. Book.

Sunderland

Date, First Survey

Last Survey

13th Aug. 1926

on the

S.S. "MERNOO"

(Number of Visits)

Gross 2230
Tons Net 1250

Master

Built at

Newcastle

By whom built Swan Hunter & Co. Ltd.

Yard No. 1220

When built 1925

Engines made at

Sunderland

By whom made

G. Hark Ltd.

Engine No. 1146

When made 1925

Boilers made at

Sunderland

By whom made

G. Hark Ltd.

Boiler No. 1145

When made 1925

Nominal Horse Power

251

Owners

Melbourne Steamship Co. Ltd.

Port belonging to

Melbourne

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

David Colville & Co.

(Letter for Record S)

Total Heating Surface of Boilers

4188

Is forced draught fitted

Coal or Oil fired Coal

No. and Description of Boilers

Two 2nd Muth. J.S.B.

Working Pressure 180 lbs.

Tested by hydraulic pressure to

320

Date of test

17/6/26

No. of Certificate

3936

Can each boiler be worked separately Yes

Area of Firegrate in each Boiler

65 sq. ft.

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

per Rule 13.7 sq. in.

Pressure to which they are adjusted

185 lbs.

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

Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers

15'-0"

Length

10'-6"

Shell plates: Material Steel

Tensile strength 28 to 32 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

DR.L.

long. seams

T.R. J.B.S.

Diameter of rivet holes in

circ. seams

1 3/16" & 1 1/2"

Pitch of rivets

3 7/8" & 5 1/2"

Percentage of strength of circ. end seams

plate 65.5

rivets 42.5

Percentage of strength of circ. intermediate seam

plate —

rivets —

Percentage of strength of longitudinal joint

plate 84.82

rivets 91.8

combined 88.02

Working pressure of shell by Rules 182

Thickness of butt straps

outer 1"

inner 1 1/8"

No. and Description of Furnaces in each Boiler

Three Fujitons, 3 Cf.

Material

Steel

Tensile strength 26 to 30 tons

Smallest outside diameter 3'-10 1/2"

Length of plain part

top —

bottom —

Thickness of plates

crown 3 3/4"

bottom 3 3/4"

Description of longitudinal joint Welded

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

Working pressure of furnace by Rules 182 lbs.

End plates in steam space: Material

Steel

Tensile strength 26 to 30 tons

Thickness

1 3/8"

Pitch of stays 20" x 23"

How are stays secured

DN & W.

Working pressure by Rules 192 lbs.

Tube plates: Material

front STEEL

back STEEL

Tensile strength 26 to 30 tons

Thickness

4 1/8"

3 1/4"

Mean pitch of stay tubes in nests

10 1/4"

Pitch across wide water spaces 14 1/4" x 8 3/4"

Working pressure

front 226 lbs. / 185

back 192

Girders to combustion chamber tops: Material

STEEL

Tensile strength 28 to 32 tons

Depth and thickness of girder

at centre

8" x 13 1/4"

Length as per Rule 2'-6 1/4"

Distance apart 10 1/4"

No. and pitch of stays

in each

2 @ 9 1/2"

Working pressure by Rules 206 lbs.

Combustion chamber plates: Material STEEL

Tensile strength

26 to 30 tons

Thickness: Sides

23"

Back

4 1/8"

Top

23"

Bottom

23"

Pitch of stays to ditto: Sides

10" x 9 1/2"

Back

10 1/2" x 9 1/2"

Top

10 1/4" x 9 1/2"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

Back 183

Front plate at bottom: Material STEEL

Tensile strength 26 to 30 tons

Thickness

1 3/8"

Lower back plate: Material STEEL

Tensile strength 26 to 30 tons

Thickness

3 1/2"

Pitch of stays at wide water space

16" x 9 1/2"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

226 lbs.

Main stays: Material STEEL

Tensile strength 28 to 32 tons

Diameter

At body of stay, or

3 1/2"

Over threads

3"

No. of threads per inch

6

Area supported by each stay

460 sq. in.

Working pressure by Rules

185 lbs.

Screw stays: Material STEEL

Tensile strength 26 to 30 tons

Diameter

At turned off part, or

1 3/4"

Over threads

1 3/4"

No. of threads per inch

9

Area supported by each stay

95 sq. in.

Working pressure by Rules 191 Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part. - or Over threads 1 1/8 ✓

No. of threads per inch 9 Area supported by each stay 12 x 9 5/8 Working pressure by Rules 184 lbs.

Tubes: Material Iron External diameter { Plain 3 1/2 Thickness 8 SWG. No. of threads per inch 9 Stay 3 1/2 Working pressure by Rules 230 lbs. Manhole compensation: Size of opening in shell plate 16 x 12 Section of compensating ring - No. of rivets and diameter of rivet holes -

Pitch of tubes 4 1/2 x 4 3/8 Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4 ✓ Steam Dome: Material -

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 ✓ 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 23 inclusive for boilers been complied with Yes

The foregoing is a correct description,
GEORGE CLARK LIMITED LOSBOWVILLE Manufacturer.

Dates of Survey { During progress of work in shops - - - } Please see Machinery Report Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

{ During erection on board vessel - - - }

Total No. of visits -

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boilers have been built under special survey & the workmanship & materials are good. On completion they were tested by hydraulic pressure to 320 lbs. & found sound & tight. The boilers were afterwards satisfactorily fitted in the vessel. For recommendation for class see Machinery Report

Survey Fee £ Charged in Machinery Report When applied for, 192

Travelling Expenses (if any) £ When received, 192

Garbottle
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 14 SEP 1926

Assigned see Proc. S.E. to 80611

