

## REPORT ON BOILERS.

No. 32855

Received at London Office

APR 25 1940

Date of writing Report

192

When handed in at Local Office

24 APR 1940

Port of

SUNDERLAND.

No. in Survey held at  
y. Book.

SUNDERLAND.

Date, First Survey

Last Survey

20<sup>th</sup> Apr 1940

on the

S.S.

HARPAGUS

(Number of Visits

Gross

5173

Tons

Net 2980

Master

Built at Sunderland

By whom built

Bartram &amp; Sons, Ltd

Yard No. 282

When built 1940

Engines made at

Sunderland

By whom made

N.E. Marine Eng. Co. (1938), Ltd

Engine No. 282

When made 1940

Boilers made at

do.

By whom made

do.

Boiler No.

do.

When made do.

Nominal Horse Power

470

Owners

J. &amp; E. Harrison, Ltd

Port belonging to

London

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

Manufacturers of Steel

The Steel Company of Scotland

(Letter for Record

Total Heating Surface of Boilers

5258 sq

Is forced draught fitted

yes

Coal or Oil fired

either

No. and Description of Boilers

2. Single Ended Cylindrical

Working Pressure

220 lbs.

Tested by hydraulic pressure to

380 lbs

Date of test

17.11.40.

No. of Certificate

4319

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

50 sq

No. and Description of safety valves to each boiler

2 Improved High Lift

Area of each set of valves per boiler

per Rule

14.2 sq

as fitted

7.95 sq

Pressure to which they are adjusted

220 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

2'-3"

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'-3 1/8"

Length

12'-4 1/2"

Shell plates: Material

steel

Tensile strength

29/33 tons/sq

Thickness

1 15/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end D.R.L.

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/2"

Pitch of rivets

4 3/8"

Percentage of strength of circ. end seams

plate

65.7

rivets

43.5

Percentage of strength of circ. intermediate seam

plate

—

rivets

—

Percentage of strength of longitudinal joint

plate

85.54

rivets

86.21

combined

88.44

Working pressure of shell by Rules

221 lbs.

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler

3. Single. Nephew furnace

Material

steel

Tensile strength

26/30 tons/sq

Smallest outside diameter

3'-8 23/32"

Length of plain part

top

—

bottom

Thickness of plates

crown

47/64"

bottom

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

241 lbs.

Plates in steam space: Material

steel

Tensile strength

26/30 tons/sq

Thickness

1 7/16"

Pitch of stays

21 1/2" x 20 1/2"

How are stays secured

double nuts

Working pressure by Rules

220.3 lbs.

Boiler plates: Material

front steel

back steel

Tensile strength

26/30 tons/sq

Thickness

7/8"

29/32"

Can pitch of stay tubes in nests

9.4"

8.66"

Pitch across wide water spaces

14 1/2"

14"

Working pressure

front 227 lbs.

back 225 lbs.

Orders to combustion chamber tops: Material

steel

Tensile strength

29/33 tons/sq

Depth and thickness of girder

centre

11" x 2 1/2"

Length as per Rule

46 1/2"

Distance apart

10"

No. and pitch of stays

each

3,

1 1/8"

Working pressure by Rules

226 lbs.

Combustion chamber plates: Material

steel

Tensile strength

26/30 tons/sq

Thickness: Sides

27/32"

Back

27/32"

Top

27/32"

Bottom

27/32"

Pitch of stays to ditto: Sides

11 7/8" x 10 1/4"

Back

10 1/4" x 10 1/4"

Top

11 7/8" x 10"

Are stays fitted with nuts or riveted over

nuts fitted

Working pressure by Rules

221 lbs.

Front plate at bottom: Material

steel

Tensile strength

Thickness

7/8"

Lower back plate: Material

steel

Tensile strength

26/30 tons/sq

Thickness

Pitch of stays at wide water space

14 3/4" x 12"

Are stays fitted with nuts or riveted over

nuts fitted.

Working Pressure

229 lbs.

Main stays: Material

steel

Tensile strength

Diameter

At body of stay,

3 3/8"

Over threads

3 3/4"

No. of threads per inch

6

Area supported by each stay

Working pressure by Rules

229 lbs.

Screw stays: Material

Tensile strength

Diameter

At turned off part,

2 5/8"

Over threads

2 1/8"

No. of threads per inch

9

Area supported by each stay

11 7/8" x 20 1/4"

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Foundation

W43-0015



Working pressure by Rules 250 lb. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 2 1/4" or Over threads }  
No. of threads per inch 9 Area supported by each stay 11 3/8" x 11 1/2" Working pressure by Rules 250 lb.  
Tubes: Material Steel External diameter { Plain } 2 1/2" Thickness { 8 W.G. } No. of threads per inch 9  
Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 222 lb. Manhole compensation: Size of opening 19 1/6"  
shell plate 20 1/2" x 16 1/4" Section of compensating ring 23 1/2" x 1 1/2" No. of rivets and diameter of rivet holes 22  
Outer row rivet pitch at ends 10 3/4" 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 of rivets in outer row in dome connection to shell —

Type of Superheater Combustion Chamber Manufacturers of { Tubes Talbot Steel, Ltd. Steel castings Stewart & Lloyds, Ltd. }  
Number of elements 32 Material of tubes S.D. Steel Internal diameter and thickness of tubes 1.023" 7 W.G.  
Material of headers S.D. Steel Tensile strength 26/28 tons/sq. in. Thickness 1" Can the superheater be shut off the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes  
Area of each safety valve 1.41 sq. in. Are the safety valves fitted with easing gear yes Working pressure as Rules 220 lb. Pressure to which the safety valves are adjusted 230 lb. Hydraulic test pressure tubes 1500 lb. castings 660 lb. and after assembly in place 475 lb. Are drain cocks or valves fitted to free the superheater from water where necessary yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.  
The foregoing is a correct description,  
*John Smith* Resident Manager

Dates of Survey { During progress of work in shops - - } Please see Rpt 4 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.)

*These boilers have been constructed under Special Survey in accordance with the approved plans, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. In recommendation plan in Rpt 4.*

Survey Fee ... £ Please see Rpt 4 When applied for, 192  
Travelling Expenses (if any) £ see Rpt 4 When received, 192

Committee's Minute

TUE. 30 APR 1940

Assigned

*See minute on mech. Rpt*

Engineer Surveyor to Lloyd's Register of Shipping



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