

# REPORT ON BOILERS.

No. 33531

Date of writing Report

19

When handed in at Local Office

10 NOV 1942

Received at London Office

18 NOV 1942

Port of

Sunderland

No. in Survey held at

Sunderland

Date, First Survey

Last Survey

9 Nov 1942

on the

MIDDLESEX TRADER

(Number of Visits

Gross 7241

Net 4291

Built at

Sunderland

By whom built

J. P. Thompson & Sons Ltd

Yard No.

621

When built

1942

Engines made at

Sunderland

By whom made

C. Clark (1938) Ltd

Engine No.

1269

When made

1942

Boilers made at

Sunderland

By whom made

C. Clark (1938) Ltd

Boiler No.

1269

When made

1942

Nominal Horse Power

513

Owners

Traders Navigation Co Ltd

Port belonging to

Sunderland

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

Manufacturers of Steel

Belvella Ltd

(Letter for Record

S.

Total Heating Surface of Boilers

5554 sq

Is forced draught fitted

Yes.

Coal or Oil fired

Coal

No. and Description of Boilers

Two Single Ended multitubular return tube marine

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

25/8/42

No. of Certificate

4441

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

67.5

No. and Description of safety valves to each boiler

Two direct-acting

Area of each set of valves per boiler

per Rule

14.4 sq

as fitted

16.58 sq

Pressure to which they are adjusted

16/10/42

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' 4"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

2' 4"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

15' 11 1/16"

Length

12' 4 1/2"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 1/4"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R. Lap

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

19/16"

long. seams

19/16"

Pitch of rivets

4' 8"

10' 13/16"

Percentage of strength of circ. end seams

plate

62.1

rivets

48.4

Percentage of strength of circ. intermediate seam

plate

-

rivets

Percentage of strength of longitudinal joint

plate

85.8

rivets

86.0

combined

88.2

Thickness of butt straps

outer

13/16"

inner

15/16"

No. and Description of Furnaces in each Boiler

Three Corrugated (heighten)

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3' 11 1/2"

Length of plain part

top

bottom

Thickness of plates

top

bottom

4 1/4"

Description of longitudinal joint

butt.

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

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 1/2"

Pitch of stays

23" x 20' 13/16"

How are stays secured

Double nuts.

Tube plates: Material

front

Steel

back

Tensile strength

26/30

Thickness

15/16"

4/8"

Mean pitch of stay tubes in nests

8.85"

Pitch across wide water spaces

14" x 8 1/4"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

at centre

11 1/2" x 1" (2)

Length as per Rule

3' 10 1/2"

Distance apart

8 1/2"

No. and pitch of stays

in each

3 @ 11/8"

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

5 1/4"

Back

25/32"

Top

5 1/4"

Bottom

25/32"

29/32"

Pitch of stays to ditto: Sides

11/8" x 8 1/8"

Back

11/8" x 8 1/2"

Top

11/8" x 8 1/2"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

3/32"

Pitch of stays at wide water space

15/8" x 10 1/2"

Are stays fitted with nuts or riveted over

Nuts.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay,

or

Over threads

3 1/2"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part,

or

Over threads

1 3/4"

No. of threads per inch

9.



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Are the stays drilled at the outer ends

no.

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

No. of threads per inch 9.

Tubes: Material S.D. Steel

External diameter { Plain 8" Stay 3"

Thickness { 8 lbs. 3/8" - 5/16"

No. of threads per inch 9.

Pitch of tubes 4 5/8" x 4 1/8"

shell plate 1/2" S.D. plate.

Section of compensating ring -

No. of rivets and diameter of rivet holes

Manhole compensation: Size of opening in

Outer row rivet pitch at ends

Depth of flange if manhole flanged 4 5/16"

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 none

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

The foregoing is a correct description,

Archd. J. Perry

Manufacturer.

Dates of Survey { During progress of work in shops - - - } while building { During erection on board vessel - - - }

See S.D. Rpt. 4

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.)

These boilers have been constructed under Special Survey in accordance with the approved plan & the rules of the Society. The materials & workmanship are good.

On completion the boilers were tested by hydraulic pressure of 320 lbs. & found tight & sound at that pressure.

They have been securely fixed on board the vessel & the Safety Valves adjusted to working pressure in accordance with rule requirements.

In recommendation please see Machinery Rpt.

Survey Fee

See Machinery Rpt.

When applied for,

19

Travelling Expenses (if any)

When received,

19

J. H. L. L. L.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 27 NOV 1942

Assigned

See S.D. J.C. 33531



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