

REPORT ON BOILERS.

Std. No. 33545

Mach. No. 14364

-6 NOV 1942

1- DEC 1942

Date of writing Report

19

When handed in at Local Office

3/11

1942

Port of

Middlesbrough

No. in Survey held at
Reg. Book.

Stockton a Tees

Date, First Survey 23rd June, 1942 Last Survey 29th October, 1942.

(Number of Visits 12.)

Gross 7271
Tons Net 5044

on the

HARPAGUS.

Built at

Sunderland

By whom built

Wm. Leyland & Son Ltd.

Yard No.

695

When built

1942

Engines made at

Sunderland

By whom made

Wm. Dorman & Son Ltd.

Engine No.

695

When made

1942

Boilers made at

Stockton a Tees

By whom made

Stockton Chem. Eng. & Ship Bldg. Co. Ltd.

Boiler No.

6623

When made

1942

Nominal Horse Power

Owners

National Steamship Co. Ltd.

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Appley. Frodingham Steel Co. Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

2130 sq. ft.

Is forced draught fitted

Yes.

Coal or Oil fired

Oil fired

No. and Description of Boilers

1. S.E. Marine

Working Pressure 120 lb. sq. in.

Tested by hydraulic pressure to

230 lb. sq. in.

Date of test

29/10/42

No. of Certificate

7061.

Can each boiler be worked separately

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Two Imp. High Lift.

Area of each set of valves per boiler

per Rule 9.8 sq. ft.

as fitted 14.1 sq. ft.

Pressure to which they are adjusted

120

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

Smallest distance between shell of boiler and tank top plating

2' 3"

Is the bottom of the boiler insulated

Largest internal dia. of boilers

12' 10 9/16"

Length

11' 6"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

2 3/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end DR

long. seams

TR DBS

Diameter of rivet holes in

circ. seams 1 1/16"

long. seams 1 3/16"

Pitch of rivets

3' 2 3/8"

Percentage of strength of circ. end seams

plate 67.19 %

rivets 60.4 %

Percentage of strength of circ. intermediate seam

plate 86.31 %

rivets 93.53 %

Percentage of strength of longitudinal joint

plate 87.84 %

rivets 87.84 %

Thickness of butt straps

outer 9/16"

inner 7/16"

No. and Description of Furnaces in each Boiler

3 - Corrugated Deighton

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3' 0 1/2"

Length of plain part

top 1' 6"

bottom 1' 6"

Thickness of plates

crown 3/8"

bottom 3/8"

Description of longitudinal joint

Welded

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

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

29/32"

Pitch of stays

18" x 16"

How are stays secured

D Nuts & washers

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30

Thickness

1 1/16"

1 1/16"

Mean pitch of stay tubes in nests

9 3/8"

Pitch across wide water spaces

13 1/2"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder

at centre

7 1/2" x 2 @ 7/8"

Length as per Rule

2' 5 3/4"

Distance apart

10'

No. and pitch of stays

in each

2 - 9 1/4"

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

19/32"

Back

9/16"

Top

19/32"

Bottom 7/8"

Pitch of stays to ditto: Sides

10" x 9"

Back

10" x 8 1/4"

Top

10" x 9 1/4"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

1 1/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

1 1/16"

Pitch of stays at wide water space

Steel 13 1/2"

Are stays fitted with nuts or riveted over

Nuts

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay, 2 3/8"

Over threads

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part, 1 3/8"

Over threads

1 1/2" x 1 7/8"

No. of threads per inch

9

Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 1/2" or Over threads 1 1/2" }
No. of threads per inch 9
Tubes: Material from Lap welded External diameter { Plain 2 3/4" Stay 2 3/4" } Thickness { 8/16" 7/16" } No. of threads per inch 9
Pitch of tubes 3 3/4" x 3 3/4" Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 7" x 1" No. of rivets and diameter of rivet holes 44 - 15/16"
Outer row rivet pitch at ends 6" 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 _____ 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 _____ 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 _____

For and on behalf of
STOCKTON CHEMICAL ENGINEERS & RILEY BOILERS Ltd.
The foregoing is a correct description,
[Signature] Manufacturer.
DIRECTOR

Dates of Survey { During progress of work in shops - June 23, July 13, 20, Aug. 14, Sept. 1, 10. Are the approved plans of boiler and superheater forwarded herewith 23-1-42 (If not state date of approval.)
while building { During erection on board vessel - - - 23. 28. Oct. 6, 15, 22, 29. }
Total No. of visits 12

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. NDB 17345

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Boiler has been constructed under Special Survey & in accordance with the Rule Requirements & approved plans. The Materials & workmanship are good & on completion the boiler was hydraulically tested to 230 lb. sq. in. & found satisfactory. This Boiler has been forwarded to Messrs W. Dorman & Son L. Sunderland for their Contract No. 695

This boiler has been securely fixed on board the vessel & safety valves adjusted to working pressure.
In recommendation please see machy. Rpt.

[Signature]
D. Fraser

Survey Fee £ 14 : 4 : 0 When applied for, 4/11/ 1942
Travelling Expenses (if any) £ : : When received, _____ 19 _____

[Signature]
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 15 DEC 1942
Assigned See Illd. 76 33545