

## REPORT ON BOILERS.

No. 101240

Received at London Office

18 MAY 1943

Date of writing Report 15/5/43 to When handed in at Local Office 15/5/43 to Port of

NEWCASTLE-ON-TYNE.

No. in Survey held at Reg. Book.

Wallsend.

Date, First Survey 28-5-1942

Last Survey 24-3-

1943.

on the

S S "EMPIRE. FRIENDSHIP"

(Number of Visits)

Tons

Gross

Net

Built at Sunderland By whom built Short Bros Ltd.

Yard No. 475 When built 1943

Engines made at Wallsend.

By whom made C.B. Harvie Eng Co (1938) Ltd

Engine No. 3049 When made 1943

Boilers made at

By whom made

Boiler No. 3049

When made 1943

Nominal Horse Power

Owners Ministry of War Transport

Port belonging to Sunderland.

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

Manufacturers of Steel

Steel Coy of Scotland Ltd.

(Letter for Record

S

Total Heating Surface of Boilers

7248 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

3 SB.

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

15.2.43

No. of Certificate

1037

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

55 sq ft

No. and Description of safety valves to each boiler

1 Double improved high lift

Area of each set of valves per boiler

per Rule 6.42.

Pressure to which they are adjusted

225

Are they fitted with easing gear

yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

yes

Is oil fuel carried in the double bottom under boilers

no.

Smallest distance between shell of boiler and tank top plating

2'-0"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

15'-0 1/16"

Length

11'-8 1/32"

Shell plates: Material

S

Tensile strength

29-33

Thickness

1 1/32"

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

long. seams

1 1/2"

Pitch of rivets

4 1/8"

10 3/8"

Percentage of strength of circ. end seams

plate

68.6

rivets

46.2

Percentage of strength of circ. intermediate seam

plate

85.5

rivets

86.2

Percentage of strength of longitudinal joint

plate

85.5

rivets

86.2

combined

88.3

Thickness of butt straps

outer

1 1/8"

inner

1 1/4"

No. and Description of Furnaces in each Boiler

3 CF.

Material

S

Tensile strength

26-30

Smallest outside diameter

3'-9 1/4"

Length of plain part

top

bottom

Thickness of plates

crown

1 1/16"

Description of longitudinal joint

weld

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

End plates in steam space: Material

S.

Tensile strength

26-30

Thickness

1 1/32"

Pitch of stays 19 3/4" x 19 3/8"

How are stays secured

Double nuts.

Tube plates: Material

front

S.

Tensile strength

26-30

Thickness

1 7/16"

25 3/32"

Mean pitch of stay tubes in nests

9 7/16"

Pitch across wide water spaces

14" x 8 1/2"

Girders to combustion chamber tops: Material

S

Tensile strength

28-32

Depth and thickness of girder

at centre 10 1/2" x 1 1/16" DBL.

Length as per Rule

33 7/32"

Distance apart

9 1/4"

No. and pitch of stays

in each 32 8"

Combustion chamber plates: Material

S.

Tensile strength

26-30

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom 7/8"

Pitch of stays to ditto: Sides

9 1/4" x 8

Back

9 1/4" x 8

Top

9 1/4" x 8

Are stays fitted with nuts or riveted over

nuts

Front plate at bottom: Material

S

Tensile strength

26-30

Thickness

1 7/16"

Lower back plate: Material

S

Tensile strength

26-30

Thickness

27 1/32"

Pitch of stays at wide water space

14" x 8"

Are stays fitted with nuts or riveted over

nuts

Main stays: Material

S

Tensile strength

28-32

Diameter

At body of stay,

3 1/4"

No. of threads per inch

6

Screw stays: Material

S

Tensile strength

26-30

Diameter

At turned off part,

1 3/4"

No. of threads per inch

9

Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 1 1/8" or Over threads 1 1/8" ✓

No. of threads per inch 9 ✓

Tubes: Material L.W. Steel External diameter { Plain 3" Stay 3" Thickness { 8 W.G. 3/8" x 5/16" No. of threads per inch 9

Pitch of tubes 4 1/4 x 4 3/8 ✓ Manhole compensation: Size of opening in shell plate none. 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 \_\_\_\_\_

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 Smoke tube type Manufacturers of { Tubes Stewarts & Lloyds Steel forgings Appleby Frodingham Steel Co Steel castings \_\_\_\_\_

Number of elements 177 Material of tubes S.W. Steel Internal diameter and thickness of tubes 15 7/8" 2 1/2 W.G.

Material of headers Forged Steel Tensile strength 26-30 Thickness 1 1/8" Can the superheater be shut off and 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 3.14 Are the safety valves fitted with easing gear yes

Pressure to which the safety valves are adjusted 225 lbs Hydraulic test pressure: tubes 1500 lbs forgings and castings 660 lbs and after assembly in place 440 lbs 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 Nall Manufacturer.  
DIRECTOR

Dates of Survey { During progress of work in shops - - } See machy 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 \_\_\_\_\_

Is this Boiler a duplicate of a previous case yes. If so, state Vessel's name and Report No. Empire Envoy Nov. 100961

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers & Superheaters have been constructed under Special Survey in accordance with the approved Plans the Requirements of the Rules & the Specification

The materials & workmanship are good & the boilers proved sound & tight under hydraulic test & satisfactory under working conditions

Survey Fee ... .. £ See Machy Rpt. When applied for, \_\_\_\_\_ 19 \_\_\_\_\_

Travelling Expenses (if any) £ \_\_\_\_\_ When received, \_\_\_\_\_ 19 \_\_\_\_\_

Re Moffett  
Engineer Surveyor Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_ TUES. 25 MAY 1943

Assigned See fe. machy rpt.