

## REPORT ON BOILERS.

No. 33398

22 MAY 1942

Received at London Office

Date of writing Report

19

When handed in at Local Office

18 May 1942

Port of

SUNDERLAND.

No. in Survey held at  
Reg. Book.

SUNDERLAND.

Date, First Survey

Last Survey

14 May 1942

(Number of Visits

Gross 7035

Tons Net 4949

on the

1/2" EMPIRE KEATS

Built at Sunderland

By whom built

Short Bros. Ltd.

Yard No. 470

When built 1942

Engines made at

do.

By whom made

H.E. Marine Eng. Co. (1938) Ltd Engine No. 4015 When made 1942

Boilers made at

do.

By whom made

do.

Boiler No. do.

When made do.

Nominal Horse Power

510

Owners

M.O.W.T

(Charlton, Breallum Co.)

Port belonging to

Sunderland

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

Manufacturers of Steel

Steel Co. of Scotland

(Letter for Record 3

Total Heating Surface of Boilers

7248 ft<sup>2</sup>

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

3 S.E. cylindrical

Working Pressure 220 lbs.

Tested by hydraulic pressure to

380 lbs.

Date of test

21.1.42.

No. of Certificate

4403

4404

4405

Can each boiler be worked separately

yes.

Area of Firegrate in each Boiler

55 ft<sup>2</sup>

No. and Description of safety valves to each boiler

2. Improved High Lift

Area of each set of valves per boiler

{ per Rule 6.5 ft<sup>2</sup>{ as fitted 7.94 ft<sup>2</sup>

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

5'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

25"

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

steel

Tensile strength 29/33

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"

{ long. seams 1 1/2"

Pitch of rivets

{ 4 1/8"

{ 10 3/8"

Percentage of strength of circ. end seams

{ plate 63.6

{ rivets 46.1

Percentage of strength of circ. intermediate seam

{ plate —

{ rivets —

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 Slighton. Stephen-Gunlay necks.

Material

steel

Tensile strength

26/30

Smallest outside diameter

3'-9 3/4"

Length of plain part

{ top —

{ bottom —

Thickness of plates

{ crown 11/16"

{ bottom 11/16"

Description of longitudinal joint

weld

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

End plates in steam space: Material

steel

Tensile strength

26/30

Thickness

1 13/32"

Pitch of stays 19 3/4" x 19 7/8"

How are stays secured

double nuts

Tube plates: Material

{ front steel

{ back steel

Tensile strength

{ 26/30

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9 7/8"

Pitch across wide water spaces

14" x 8 1/4"

Girders to combustion chamber tops: Material

steel

Tensile strength

28/32

Depth and thickness of girder

at centre

10 1/2" x 1 3/8"

Length as per Rule

31 1/2"

33 1/2"

Distance apart

9 1/4"

No. and pitch of stays

in each

3 x 8"

Combustion chamber plates: Material

steel

Tensile strength

26/30

Thickness: Sides

11/16"

Back 11/16"

Top 11/16"

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 fitted

Front plate at bottom: Material

steel

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

steel

Tensile strength

26/30

Thickness

27/32"

Pitch of stays at wide water space

14" x 8"

Are stays fitted with nuts or riveted over

nuts fitted

Main stays: Material

steel

Tensile strength

28/32

Diameter

{ At body of stay, 3 1/8"

{ Over threads 3 1/2"

No. of threads per inch

6

Screw stays: Material

steel

Tensile strength

26/30

Diameter

{ At turned off part, 1 3/4"

{ Over threads —

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, 1 7/8" or Over threads

No. of threads per inch 9

Tubes: Material Steel External diameter { Plain 3 3/4" Stay 3 3/4" Thickness { 8. W. 6. 3/8" & 5/16" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in End shell plate 16" x 12" Section of compensating ring — No. of rivets and diameter of rivet holes —

Outer row rivet pitch at ends — Depth of flange if manhole flanged 4 1/4" 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 — 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 yes

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.  
The foregoing is a correct description,  
J. H. Smith Manufacturer.  
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 —

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 plans, Secretary's letters & the requirements of the Rules. Workmanship & materials are good.

In recommendation please see Rpt 4.

L. R. Home

Survey Fee ... .. £ Rpt 4 When applied for, 19

Travelling Expenses (if any) £ : When received, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See Std. JE 33398

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