

Rpt. 5a.

REPORT ON BOILERS.

No. 33668

15 APR 1943

Received at London Office

Date of writing Report

19

When handed in at Local Office

6th Apr 1943

Port of

SUNDERLAND.

No. in Survey held at
Reg. Book.

SUNDERLAND.

Date, First Survey

Last Survey 5th Apr 1943

on the

"EMPIRE COMMERCE"

(Number of Visits)

Gross 3722

Tons Net 1993

Built at Sunderland By whom built W. James & Son Ltd. Yard No. 448 When built 1943.
Engines made at Sunderland By whom made W. James & Son Ltd. Engine No. 226 When made 1943.
Boilers made at Sunderland By whom made H. S. Mar. Eng. Co. (1938) Ltd. Boiler No. 4042 When made 1943.
Nominal Horse Power 516 Owners Ministry of War Transport Port belonging to Sunderland.

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

Manufacturers of Steel Appleby Fawcett & Co. Ltd. (Letter for Record 8.)
Total Heating Surface of Boilers 900 sq + 1858 sq = 2758 Is forced draught fitted YES. Coal or Oil fired oil & gas
No. and Description of Boilers No. 5 E. Multitubular cylindrical Working Pressure 150
Tested by hydraulic pressure to 275 Date of test 16.2.43 No. of Certificate 4483 Can each boiler be worked separately -
Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 2. Improved high lift. 3 1/4"
Area of each set of valves per boiler { per Rule 20.9 sq" for ordinary valves
as fitted 16.59 sq" Pressure to which they are adjusted 150 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 (Boiler in upper room).
Smallest distance between shell of boiler and tank top plating - Is the bottom of the boiler insulated Yes.
Largest internal dia. of boilers 13'-10 1/8" Length 11'-6" Shell plates: Material Steel Tensile strength 29/33
Thickness 15/16" 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 1/16" Pitch of rivets { 3.43"
long. seams 1 1/16" { 7 1/4"
Percentage of strength of circ. end seams { plate 69.10 Percentage of strength of circ. intermediate seam { plate -
rivets 43.8. rivets -
Percentage of strength of longitudinal joint { plate 85.35
rivets 97.25
combined 90.1
Thickness of butt straps { outer 3/4" No. and Description of Furnaces in each Boiler 3 Saighton. Stephan. four way necks.
inner 7/8" Material Steel Tensile strength 26/30 Smallest outside diameter 3'-0 1/4"
Length of plain part { top - Thickness of plates { crown 13/32" Description of longitudinal joint Weld
bottom - { bottom -
Dimensions of stiffening rings on furnace or c.c. bottom -
End plates in steam space: Material Steel Tensile strength 26/30 Thickness 31/32" Pitch of stays 20"x17"
How are stays secured Loose Washers & double nuts
Tube plates: Material { front Steel Tensile strength { 26/30 Thickness { 7/8"
back Steel { 11/16"
Mean pitch of stay tubes in nests 10 5/32" 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 1 1/4" Length as per Rule 2'-3 21/32" Distance apart 10" No. and pitch of stays
in each 2, 9" Combustion chamber plates: Material Steel
Tensile strength 26/30 Thickness: Sides 21/32" Back 21/32" Top 21/32" Bottom 21/32"
Pitch of stays to ditto: Sides 10"x10" Back 10"x9 1/2" Top 10"x9" Are stays fitted with nuts or riveted over nuts fitted
Front plate at bottom: Material Steel Tensile strength 26/30
Thickness 7/8" Lower back plate: Material Steel Tensile strength 26/30 Thickness 13/16"
Pitch of stays at wide water space 13 1/2" x 9 1/2" Are stays fitted with nuts or riveted over nuts fitted
Main stays: Material Steel Tensile strength 28/32
Diameter { At body of stay, 2 3/4" No. of threads per inch 6
or Over threads
Screw stays: Material Steel Tensile strength 26/30
Diameter { At turned off part, 1 5/8" No. of threads per inch 9
or Over threads

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Are the stays drilled at the outer ends no

Margin stays: Diameter { At turned off part, 1 3/4" + 1 7/8"
or
Over threads

No. of threads per inch 9

Tubes: Material L.W.I.

External diameter { Plain 2 1/2"
Stay

Thickness { 9 H.G.
5/16"

No. of threads per inch 9

Pitch of tubes 3 3/4" x 3 5/8"

Manhole compensation: Size of opening in

shell plate 17" x 21"

Section of compensating ring 10 1/2" x 1 1/8"

No. of rivets and diameter of rivet holes 48, 1 1/8"

Outer row rivet pitch at ends 7 1/4"

Depth of flange if manhole flanged 3"

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. (1933) LTD.

The foregoing is a correct description,

J. H. Smith

RESIDENT MANUFACTURER

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

23/11/19, 19, Dec. 30, 23/Jan. 15, 19, 20
Feb. 4, 9, 11, 16, 18, 22
See Rpt + b

Are the approved plans of boiler and superheater forwarded herewith
(If not state date of approval.)

Total No. of visits 11

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.)

This boiler has been constructed under special survey
in accordance with the approved plan and the requirement
of the Rules. Workmanship and materials are good.
The boiler has been despatched to Messrs J. Dickinson &
Sons, (Manchester) for installation.

This boiler has been securely fixed on board the vessel & Safety valves
adjusted to working pressure in accordance with rule requirements.
In recommendation please see Machy. Rpt.

W. T. Fraser

L. J. Horne

Survey Fee

Specification

Travelling Expenses (if any)

£ 13 : 16 :
4 : 9 :

When applied for, 8 APR 1943

When received, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

WED. 28 APR 1943

Assigned

See Ftz machy rpt.



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