

REPORT ON BOILERS.

No. 19381.

10 SEP 1952

Date of writing Report... 19... When handed in at Local Office... 9th Sept 1952 Port of... West Hartlepool

No. in Reg. Book... Survey held at... West Hartlepool Date, First Survey... 23rd June Last Survey... 16th July 1952

on the... M.V. "LUCERNA" (Number of Visits... 3) Tons { Gross... Net...

Master... Built at... Southbank By whom built... Smith's Dock Co. Yard No. 1215 When built... 1952

Engines made at... NEWCASTLE ON TYNE By whom made... R. & W. HAWTHORN LESLIE & CO. LTD. Engine No. 4084 When made... 1952

Boilers made at... West Hartlepool By whom made... Central Marine Eng Works. Boiler No. R418 When made... 1952

Nominal Horse Power... Owners... H. E. Moss & Co's Tankers (Holdings) LTD. Port belonging to... LIVERPOOL

MULTITUBULAR BOILERS ~~MAN~~, ~~ARMORY~~, ~~AND~~ DONKEY.

Manufacturers of Steel... Colvilles.

Total Heating Surface of Boilers... 5814 sq ft

No. and Description of Boilers... Two Single ended multitubular Is forced draught fitted... Yes (Letter for Record...)

Tested by hydraulic pressure to... 320 lbs Date of test... 23.7.52 No. of Certificate... 4168 Coal or Oil fired... oil or gas Working Pressure... 180 lbs

Area of Firegrate in each Boiler... No. and Description of safety valves to each boiler... 2 COCKBURNS I.H.L. Can each boiler be worked separately...

Area of each set of valves per boiler... 14 sq ins Pressure to which they are adjusted... 180 lbs Are they fitted with easing gear... YES

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler... Is oil fuel carried in the double bottom under boilers... No

Smallest distance between boilers or uptakes and bunkers or woodwork... Approx 4'-5" Is the bottom of the boiler insulated... YES

Smallest distance between shell of boiler and tank top plating... Boiler flat 4 ft 4 in

Largest internal dia. of boilers... 15'-0" Length... 12'-6" Shell plates: Material... S.M. Steel Tensile strength... 29-33 T.T.

Thickness... 1 1/2" Are the shell plates welded or flanged... No. Description of riveting: circ. seams { end... DR Lap inter... 4'-0" Pitch of rivets... 8 1/2"

Ing. seams... T.R.D.B.S. Diameter of rivet holes in { circ. seams... 1 1/2" long. seams... 1 1/2" Percentage of strength of circ. intermediate seam { plate... rivets...

Percentage of strength of circ. end seams { plate... 64.3 rivets... 43.9 Percentage of strength of longitudinal joint { plate... 92.4 rivets... 89.4

Percentage of strength of longitudinal joint { plate... 92.4 rivets... 89.4 Working pressure of shell by Rules... 184.9

Material... S.M. Steel No. and Description of Furnaces in each Boiler... 3 Brighton Section

Length of plain part... 9' 6" Tensile strength... 26-30 T.T. Smallest outside diameter... 3'-8 1/2"

Dimensions of stiffening rings on furnace or c.c. bottom... Thickness... 1 1/2" Description of longitudinal joint... welded

Plates in steam space: Material... S.M. Steel Tensile strength... 26-30 T.T. Working pressure of furnace by Rules... 184.9

Are stays secured... Double-nuts Thickness... 1 1/2" Pitch of stays... 19 1/2" x 20"

Re plates: Material... S.M. Steel Tensile strength... 26-30 T.T. Working pressure by Rules... 22.1

In pitch of stay tubes in nests... 9 3/8" Thickness... 3/32" Working pressure { front... back...

Stays to combustion chamber tops: Material... S.M. Steel Tensile strength... 28-32 T.T. Depth and thickness of girder

Centre... 9 1/2" x 1 3/4" (2 3/8" plate) Length as per Rule... 2'-11 1/2" Distance apart... 9 1/8"

Working pressure by Rules... 26-30 T.T. No. and pitch of stays

Thickness: Sides... 21/32" Back... 21/32" Top... 21/32" Bottom... 21/32"

Working pressure by Rules... 24.3 Are stays fitted with nuts or riveted over... nuts

Lower back plate: Material... S.M. Steel Tensile strength... 26-30 T.T. Thickness... 1 1/2"

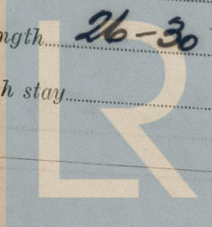
Working pressure... 13 3/4" x 9 1/2" Are stays fitted with nuts or riveted over... nuts

Main stays: Material... S.M. Steel Tensile strength... 28-32 T.T.

No. of threads per inch... 6 Area supported by each stay

Screw stays: Material... S.M. Steel Tensile strength... 26-30 T.T.

No. of threads per inch... 9 Area supported by each stay



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Working pressure by Rules. Are the stays drilled at the outer ends. *ho.* ✓ Margin stays: Diameter { At turned off part, or Over threads. *1 1/8" x 2"* ✓
No. of threads per inch. *9.* Area supported by each stay. Working pressure by Rules.
Tubes: Material. *HR 33 Steel* External diameter { Plain. *2 1/2"* ✓ Stay. *2 1/2"* ✓ Thickness { *3/16"* ✓ *1/4"* ✓ *5/16"* ✓ No. of threads per inch. *9.* ✓
Pitch of tubes. *3 3/4" x 3 3/4"* Working pressure by Rules. Manhole compensation: Size of opening in shell plate. *20 x 16"* Section of compensating ring. *3' 1" x 2' 9" x 1 1/2"* No. of rivets and diameter of rivet holes. *32* *1 1/2"* ✓
Outer row rivet pitch at ends. *9 1/8"* ✓ 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. Working pressure by Rules. Thickness of crown. No. and diameter stays.
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 from the boiler?
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. Working pressure as Rules.
Pressure to which the safety valves are adjusted. Hydraulic test pressure tubes.
forgings and castings. and after assembly in place. Are drain cocks 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 CENTRAL MARINE ENGINE WORKS,
The foregoing is a correct description,

J. H. Dunlop Manufacturer
GENERAL MANAGER

Dates of Survey while building { During progress of work in shops - - - *23 July 1916* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *yes.*
During erection on board vessel - - - Total No. of visits. *3*

Is this Boiler a duplicate of a previous case. *ho.* 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 approved plans Secretary's letters and the rules of the Society for a working pressure of 180 lbs. The materials and workmanship are good. On completion they were tested by hydraulic pressure to 320 lbs.; and found sound and tight.

These boilers are being dispatched to the Kildersham district.

These boilers have been securely fixed on board, tried under working conditions and found satisfactory. On completion the safety valves were adjusted to steam to 180 lbs./sq. in.

Survey Fee ... £ *90.* When applied for. *9th Sept 1916*
Travelling Expenses (if any) £ : : When received. *19th Sept 1916*

John Lundgren
Engineer Surveyor to Lloyd's Register of Ships

Committee's Minute

Assigned

Sir F. E. Mackay, 1st Bt. 19748



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