

REPORT ON BOILERS.

No. 50591.

APR -2 1940.

Received at London Office

of writing Report *8-3-1940* When handed in at Local Office *1 APR 1940* Port of *HULL*

Survey held at *Hull* Date, First Survey *23.5.39.* Last Survey *29.2.1940.*

on the *Se Tug. EMPIRE HENCHMAN.* (Number of Visits *29* Gross Tons *243* Net *0*)

at *Selby.* By whom built *Cochrane & Sons Ltd* Yard No. *1206* When built *1940.2.*

Lines made at *Hull.* By whom made *C.D. Holmes. Ltd* Engine No. *1557* When made *do.*

Boilers made at *do* By whom made *do* Boiler No. *do* When made *do.*

Final Horse Power *167.* Owners *Ministry of Shipping.* Port belonging to *London.*

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Appleby & Hodgkiss. Steel Co. Ltd.* *Scunthorpe.* (Letter for Record *S.*)

Heating Surface of Boilers *2650 sq. ft.* Is forced draught fitted *No.* Coal or Oil fired *Oil.*

Description of Boilers *One S.B.* Working Pressure *200 lbs/sq. in.*

Tested by hydraulic pressure to *350 lbs/sq. in.* Date of test *3/8/39.* No. of Certificate *4013.* Can each boiler be worked separately *✓*

No. of Firegrate in each Boiler *✓* No. and Description of safety valves to each boiler *2. Spring loaded.*

Pressure of each set of valves per boiler { per Rule *16.45* as fitted *16.58* } Pressure to which they are adjusted *200 lbs/sq. in.* Are they fitted with easing gear *Yes.*

Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler *✓*

Least distance between boilers or uptakes and bunkers or woodwork *8 feet.* Is oil fuel carried in the double bottom under boilers *No.*

Least distance between shell of boiler and tank top plating *Open bottom* Is the bottom of the boiler insulated *No.*

Least internal dia. of boilers *186"* Length *11' 6"* Shell plates: Material *Steel* Tensile strength *31/35 tons/sq. in.*

Thickness *42/32"* Are the shell plates welded or flanged *No.* Description of riveting: circ. seams { end *D.R. lap* inter. *✓* }

Seams *T.R. — D.B.S.* Diameter of rivet holes in { circ. seams *1 3/8"* long. seams *1 3/8"* } Pitch of rivets { *3 3/4"* *9/8"* }

Percentage of strength of circ. end seams { plate *68.2* rivets *45.6* } Percentage of strength of circ. intermediate seam { plate *✓* rivets *✓* }

Percentage of strength of longitudinal joint { plate *89.93* rivets *86.2* combined *87.09* }

Thickness of butt straps { outer *32/32"* inner *36/32"* } No. and Description of Furnaces in each Boiler *3 Cf. Drydown*

Material *Steel* Tensile strength *26/30 tons/sq. in.* Smallest outside diameter *44.25"*

Thickness of plain part { top *✓* bottom *✓* } Thickness of plates { crown *2 1/2"* bottom *2 1/2"* } Description of longitudinal joint *Double*

Provisions of stiffening rings on furnace or c.c. bottom *None.*

Plates in steam space: Material *Steel* Tensile strength *26/30 tons/sq. in.* Thickness *39/32"* Pitch of stays *19 x 18"*

Are stays secured *Double Nuts & Washers.*

Plates: Material { front *Steel* back *do* } Tensile strength { *26/30 tons/sq. in.* *do.* } Thickness { *31/32"* *29/32"* }

Pitch of stay tubes in nests *10 27/32"* Pitch across wide water spaces *14 1/2" (x 9 1/2")*

Stays to combustion chamber tops: Material *Steel* Tensile strength *28/32 tons/sq. in.* Depth and thickness of girder

Size *9 1/2" x 1 3/4"* Length as per Rule *35 1/32"* Distance apart *9" max.* No. and pitch of stays

Quantity *3 @ 8 3/8"* Combustion chamber plates: Material *Steel*

Strength *26/30 tons/sq. in.* Thickness: Sides *2 3/32"* Back *2 3/32"* Top *2 3/32"* Bottom *26/32"*

Of stays to ditto: Sides *9 3/8" x 8 3/8"* Back *9 3/4" x 8 3/4"* Top *9 x 8 3/8"* Are stays fitted with nuts or riveted over *Nuts.*

Plate at bottom: Material *Steel* Tensile strength *26/30 tons/sq. in.*

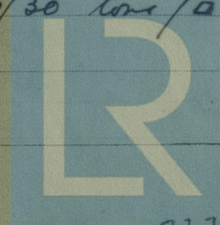
Thickness *31/32"* Lower back plate: Material *Steel* Tensile strength *26/30 tons/sq. in.* Thickness *30/32"*

Of stays at wide water space *14 1/2" x 8 3/4"* Are stays fitted with nuts or riveted over *Nuts.*

Stays: Material *Steel* Tensile strength *28/32 tons/sq. in.*

At body of stay, *3 1/8"* No. of threads per inch *8.*

At turned off part, *1 3/4"* No. of threads per inch *10.*



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Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part, or Over threads *1 7/8, 2" & 2 1/8"*
No. of threads per inch *10* ✓
Tubes: Material *Iron* ✓ External diameter { Plain *3 1/2"* ✓ Stay *3 1/2"* ✓ Thickness { *8. W.G.* ✓ *5/16" & 3/8"* ✓ No. of threads per inch *9* ✓
Pitch of tubes *4 7/8" x 4 3/4"* ✓ Manhole compensation: Size of opening in shell plate *16" x 12"* Section of compensating ring *12 1/4" x 4 1/2"* No. of rivets and diameter of rivet holes *15 x 1 3/8"* ✓
Outer row rivet pitch at ends *9"* Depth of flange of ^{Bottom} manhole flanged *3 1/4"* ✓ Steam dome: Material *Iron* ✓
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 ✓
How connected to shell ✓ Inner radius of crown ✓
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 *None* ✓ 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 foregoing is a correct description.
FOR CHARLES D. HOLMES & CO., LTD.
J. D. Holmes Manufacturer.

Dates of Survey { During progress of work in shops - - - 1939. MAY 23, JUN 20, 27, JUL 10, 12, 20, 25/31. 29. Are the approved plans of boiler and superheater forwarded herewith *yes* ✓
while building { During erection on board vessel - - - AUG 3, 15, 22, 24, SEP 5, 11, 20, 27, NOV 7, 15. (If not state date of approval.)
DEC 1, 4, 5, 7, 13, 21, JAN 2, 13, 19, FEB 29. Total No. of visits *29* ✓

Is this Boiler a duplicate of a previous case *No* ✓ 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 plans & the Rules. The workmanship & materials are good. & tested under water hydraulic pressure & tried under steam it was found satisfactory in every respect.

Survey Fee ... £ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

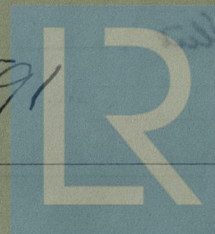
D. J. Holmes
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 9 APR 1940

Assigned

See Int J.C. 50591



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