

REPORT ON BOILERS.

No. 18259

23 MAR 1942

Received at London Office

Date of writing Report 21/3/1942 When handed in at Local Office 21/3/1942 Port of W. Hartlepool

No. in Survey held at Hartlepool Date, First Survey 15th August, 1941, Last Survey 20th March, 1942.

on the

SS Empire Dickens

(Number of Visits 93)

Tons { Gross
Net

Built at Haverton Hill By whom built Furness Shipbuilding Co. Ltd. Yard No. 341 When built 1942

Engines made at Hartlepool By whom made Richardson Westgate Co. Engine No. 27/3 When made 1942

Boilers made at " By whom made " " " Boiler No. 27/3 When made 1942

Nominal Horse Power 674 Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Co. of Scotland (Letter for Record S)

Total Heating Surface of Boilers 10020 Sq. ft. Is forced draught fitted Yes Coal or Oil fired oil

No. and Description of Boilers 3 S.E. Multitubular Working Pressure 220 LB/IN²Tested by hydraulic pressure to 380 LB/IN² Date of test 25/2/42 No. of Certificate 3959 Can each boiler be worked separately YesArea of Firegrate in each Boiler 8.650^{sq} ft. No. and Description of safety valves to each boiler 2-2 1/2 Spring loaded high liftArea of each set of valves per boiler { per Rule 8.650^{sq} ft. as fitted 9.80^{sq} ft. 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

Smallest distance between boilers or uptakes and bunkers or woodwork 3'-9" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated

Largest internal dia. of boilers 16'-2 3/32" Length 12'-6" Shell plates: Material steel Tensile strength 30/34

Thickness 1 3/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end DRL inter. none

long. seams TR DBS Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 9/16" Pitch of rivets { 4" 10 1/2"

Percentage of strength of circ. end seams { plate 62.5 rivets 44.7 Percentage of strength of circ. intermediate seam { plate 85.1 rivets 86.7

Percentage of strength of longitudinal joint { plate 85.1 rivets 86.7 combined 84.5

Thickness of butt straps { outer 1 5/32" inner 1 9/32" No. and Description of Furnaces in each Boiler 3 Doughton (gourley necks)

Material steel Tensile strength 26/30 Smallest outside diameter 3'-11 23/32"

Length of plain part { top 47/64" bottom 47/64" Description of longitudinal joint welded

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

End plates in steam space: Material steel Tensile strength 26/30 Thickness 1 1/32" Pitch of stays 22 1/4" x 18 1/2"

How are stays secured double nuts

Tube plates: Material { front steel back steel Tensile strength 26/30 Thickness 1 5/16" 7/8"

Mean pitch of stay tubes in nests 9 5/8" Pitch across wide water spaces 14 1/2" + 7/4"

Girders to combustion chamber tops: Material steel Tensile strength 29/33 Depth and thickness of girder

at centre 2-11 3/4" + 1" Length as per Rule 3'-10 1/2" Distance apart 9" No. and pitch of stays

in each 3 @ 11 1/8" Combustion chamber plates: Material steel

Tensile strength 24/30 Thickness: Sides 1 7/8" Back 2 3/32" Top 1 7/8" Bottom 2 9/32"

Pitch of stays to ditto: Sides 9" + 11 1/8" Back 9" + 8" Top 9" + 11 1/8" Are stays fitted with nuts or riveted over nuts

Front plate at bottom: Material steel Tensile strength 26/30

Thickness 1 5/16" Lower back plate: Material steel Tensile strength 26/30 Thickness 1 5/16"

Pitch of stays at wide water space 15 3/8" x 8" Are stays fitted with nuts or riveted over nuts

Main stays: Material steel Tensile strength 28/32

Diameter { At body of stay, 3 1/2" No. of threads per inch 6

Screw stays: Material steel Tensile strength 26/30

Diameter { At turned off part, 2", 1 3/4" No. of threads per inch 9



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Foundation

Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part, *2", 1 3/4"*
Over threads

No. of threads per inch *9*

Tubes: Material *Steel* External diameter { Plain } *2 1/2"* Thickness { *89* } *5 1/8", 1 1/8"* No. of threads per inch *9*

Pitch of tubes *4" + 3 5/8"* Manhole compensation: Size of opening in shell plate *16 1/2" x 20 1/2"* Section of compensating ring *18 3/4" x 1 3/8"* No. of rivets and diameter of rivet holes *34 - 1 1/8"*

Outer row rivet pitch at ends *10 1/2"* Depth of flange if manhole flanged *3 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 *✓*

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 *B.B. Type supplied by C.P. & M. Marine Ltd.* Manufacturers of { Tubes *Stewart & Lloyd*
Steel forgings *"*
Steel castings *✓*

Number of elements *36* Material of tubes *S.D. Steel* Internal diameter and thickness of tubes *1 2/3" + 1/8"*

Material of headers *S.D. Steel* Tensile strength *26/28* Thickness *1"* 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 *3.1416 sq"* Are the safety valves fitted with casing gear *Yes*

Pressure to which the safety valves are adjusted *230 lb/sq"* Hydraulic test pressure: tubes *1500 lb/sq"* Headers *660 lb/sq"* and after assembly in place *660 lb/sq"* 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 *✓*

The foregoing is a correct description,
For **RICHARDSON, WESTGARTH & CO. LIMITED**
Manufacturer.
R. W. Sturges
DIRECTOR

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

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

Total No. of visits

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *RW. 2412*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boilers have been constructed under Special Survey
+ in accordance with the specification + approved plan for a working
pressure of 220 LB/sq".

The materials + workmanship have been found good.
Upon completion the boilers were tested with an hydraulic
pressure of 380 LB/sq" + found sound + tight.

These boilers have been forwarded to Haverston Hill.

The Boilers securely fitted on board + examined under working conditions + found satisfactory.
The Safety Valves adjusted under steam to 225 lb/sq" on completion.

Survey Fee ... £ *See Rpt. 4*
Travelling Expenses (if any) £ :

When applied for, 19
When received, 19

Clive Bell

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 5 JUN 1942

Assigned

See Indb. J.C. 17239