

REPORT ON BOILERS.

No. 18356

Received at London Office

1 DEC 1942

Date of writing Report 30/11/1942 When handed in at Local Office 30/11/1942 Port of WEST HARTLEPOOL

No. in Reg. Book. Survey held at WEST HARTLEPOOL

Date, First Survey

Last Survey

19

(Number of Visits)

Gross 7041.89
Tons Net 4859.66

on the STEEL SCREW STEAMER "EMPIRE DRIVER"

Built at WEST HARTLEPOOL By whom built WM. GRAY & CO. LTD

Yard No. 1137 When built 1942.

G.O. 8370/2

Engines made at GLASGOW.

By whom made HARLAND & WOLFF LTD

Engine No. A/15MSM When made 1942.

Boilers made at WEST HARTLEPOOL

By whom made CENTRAL MARINE ENGINE WORKS.

Boiler No. 1137. When made 1942.

Nominal Horse Power 510.

Owners MINISTRY OF WAR TRANSPORT.

Port belonging to WEST HARTLEPOOL.

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

Manufacturers of Steel Messrs. Colvilles & Co. Glasgow.

(Letter for Record S.)

Total Heating Surface of Boilers 7248 sq ft

Is forced draught fitted Yes.

Coal or Oil fired Coal.

No. and Description of Boilers 3 single ended multitubular

Working Pressure 220 lbs.

Tested by hydraulic pressure to 380 lbs. Date of test 12-10-42 No. of Certificate 3981 Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 54.84 sq ft No. and Description of safety valves to each boiler 2 Borchers High Lift

Area of each set of valves per boiler { per Rule 6.425 sq in
as fitted 7.952 sq in 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

21"

Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating

23 3/4"

Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 15'-0 1/16" Length 11'-6"

Shell plates: Material Steel

Tensile strength 29-33 tons

Thickness 1 1/32" Are the shell plates welded or flanged No.

Description of riveting: circ. seams { end D.R. LAP
inter. -long. seams TR Double End Strap Diameter of rivet holes in { circ. seams 1 1/2"
long. seams 1 1/2"Pitch of rivets { 4.07"
10 3/8"Percentage of strength of circ. end seams { plate 63.1
rivets 46.8Percentage of strength of circ. intermediate seam { plate -
rivets -Percentage of strength of longitudinal joint { plate 85.5
rivets 86.2
combined 88.35.Thickness of butt straps { outer 1 1/8"
inner 1 1/4"

No. and Description of Furnaces in each Boiler 3 Corrugated Deighton section

Material Steel

Tensile strength 26-30 tons

Smallest outside diameter 45 1/4"

Length of plain part { top -
bottom -Thickness of plates { crown 1 1/16"
bottom 1 1/16"

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 tons

Thickness 1 1/32"

Pitch of stays 21" x 20"

How are stays secured Double nuts.

Tube plates: Material { front Steel
back SteelTensile strength { 26-30 tons
26-30 tonsThickness { 15 1/16"
25 3/32"

Mean pitch of stay tubes in nests 10 5/8" x 8 1/4" Pitch across wide water spaces 14"

Girders to combustion chamber tops: Material Steel

Tensile strength 28-32 tons

Depth and thickness of girder

at centre 10 1/2" x 1 3/8" 2-1/16" plates length as per Rule 2-9 1/32"

Distance apart 9 1/4"

No. and pitch of stays

in each 3 @ 8"

Combustion chamber plates: Material Steel

Tensile strength 26-30 tons

Thickness: Sides 1 1/16"

Back 1 1/16"

Top 1 1/16"

Bottom 1 3/16"

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

Front plate at bottom: Material Steel

Tensile strength 26-30 tons

Thickness 15 1/16"

Lower back plate: Material Steel

Tensile strength 26-30 tons

Thickness 27 3/32"

Pitch of stays at wide water space 14" x 8"

Are stays fitted with nuts or riveted over Nuts

Main stays: Material Steel

Tensile strength 28-32 tons

Diameter { At body of stay,
or Over threads 3 1/2"

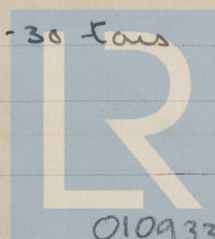
No. of threads per inch 6

Screw stays: Material Steel

Tensile strength 26-30 tons

Diameter { At turned off part,
or Over threads 1 3/4"

No. of threads per inch 9



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Are the stays drilled at the outer ends Yes Margin stays: Diameter { At turned off part, 1 3/8" or Over threads 1 3/8"

No. of threads per inch 9

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

Pitch of tubes 2 1/4" x 4 1/8" Manhole compensation: Size of opening in shell plate None Section of compensating ring _____ No. of rivets and diameter of rivet holes _____

Outer row rivet pitch at ends _____ 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 _____ 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 Superheater 8° Manufacturers of { Tubes _____ Steel forgings _____ Steel castings _____

Number of elements 47 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 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 1.767 sq. in. Are the safety valves fitted with easing gear Yes

Pressure to which the safety valves are adjusted 230 lbs. sq. in. Hydraulic test pressure: tubes 1,000 lbs. sq. in. forgings and castings 660 lbs. sq. in. and after assembly in place 660 lbs. sq. in. 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 Yes

The foregoing is a correct description,

Wm. H. H. H. H.

Manufacturer.

Dates of Survey { During progress of work in shops - 1942 Jan. 23 - July 21 - 23 - 25 - 31 - Aug. 30 - 31 - 1942 Are the approved plans of boiler and superheater correct with (If not state date of approval.)

while building { During erection on board vessel - 1942 Aug. 25 - Sept. 15 - 21 - Oct. 9 - 15 - 24 - Nov. 10 - 16 - 17 - 18 - 20 - 21 Total No. of visits 64

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. S.S. EMPIRE CENTAUR. RAN. 18343.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey - and in accordance with the approved plans - and specification for - a working pressure - of 220 lbs per square inch.

The materials - and workmanship have been found good. Upon completion the boilers were tested in the presence of the undersigned by a hydraulic pressure of 380 lbs per square inch. showed no signs of weakness - and were found tight and sound in every respect - at that pressure.

Survey Fee ... £ : : When applied for, 19

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

Charles W. Oxford
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 8 DEC 1942

Assigned

See Hpl. 76. 18356



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