

REPORT ON BOILERS.

No. 18404

Received at London Office

15 APR 1943

Date of writing Report 14-4-1943 When handed in at Local Office 14-4-1943 Port of WEST HARTLEPOOL.

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

Date, First Survey 31st July, 1942 Last Survey 5th April, 1943

on the STEEL SCREW STEAMER "EMPIRE PROWESS"

(Number of Visits 72)

Gross 7057.97
Net 4865.22

Built at West Hartlepool By whom built Wm Gray & Co. Ltd.

Yard No. 1142 When built 1943.

Engines made at West Hartlepool. By whom made Central Marine Engine Works Engine No. 1142 When made 1943

Boilers made at West Hartlepool. By whom made Central Marine Engine Works. Boiler No. 1142 When made 1943.

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. Ltd. Glasgow.

(Letter for Record S.)

Total Heating Surface of Boilers 7.248 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/sq in

Tested by hydraulic pressure to 380 lbs Date of test 4-2-43 No. of Certificate 3993. 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 Backburn's 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/sq in 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 1/2" Length 11'-6"

Shell plates: Material Steel

Tensile strength 29-33 tons

Thickness 1 15/32" Are the shell plates welded or flanged

No.

Description of riveting: circ. seams {end D.R. LAP
inter. -long. seams T.R. Double butt straps 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 88.3.Thickness of butt straps {outer 1 1/8"
inner 1 1/4"

No. and Description of Furnaces in each Boiler 3 Corrugated Dighton 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 13/32" Pitch of stays 21 x 20"

How are stays secured Double nuts.

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

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" length as per Rule 2-9 17/32"

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 13/16"

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 No.

Front plate at bottom: Material Steel

Tensile strength 26-30 tons

Thickness 1 5/16"

Lower back plate: Material Steel

Tensile strength 26-30 tons

Thickness 2 7/32"

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

Are stays fitted with nuts or riveted over No.

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

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 No. Margin stays: Diameter { At turned off part, 1 7/8" or Over threads 1 7/8" }
No. of threads per inch 9.
Tubes: Material HRWS. External diameter { Plain 3" Stay 3" } Thickness { 8 SWG 3/8" x 5/16" } No. of threads per inch 9.
Pitch of tubes 1 1/4" & 1 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 B.S.L. Manufacturers of { Tubes _____ Steel forgings _____ Steel castings _____ }
Number of elements 47. Material of tubes S.D. Steel Internal diameter and thickness of tubes 22 7/8" x 2 1/2"
Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately No. 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" Are the safety valves fitted with easing gear Yes.
Pressure to which the safety valves are adjusted 230 lbs. Hydraulic test pressure: tubes 660 lbs. forgings and castings 660 lbs. and after assembly in place 660 lbs. 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,
FOR THE CENTRAL MARINE ENGINE WORKS

(M. Gray & Co. Ltd.) Manufacturer.

Dates of Survey { During progress of work in shops - - }
while building { During erection on 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. S.S. EMPIRE CATO RPTN° 18365

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

Arthur W. Oxford.

Engineer Surveyor to Lloyd's Register of Shipping.

TUES. 20 APR 1943

Committee's Minute

Assigned

See H.E. machy rpt.



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