

Rpt. 5a.

REPORT ON BOILERS.

 Ser. No. 33639
 Spl. No. 18370

Received at London Office

13 JAN 1943

Date of writing Report 12-1-1943 When handed in at Local Office 12-1-1943 Port of WEST HARTLEPOOL

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

Date, First Survey 27th November, 1942 Last Survey 30th December, 1942

on the

GRUINARD

 (Number of Visits 9) Gross 453
 Tons Net 146

Built at SUNDERLAND By whom built JOHN CROWNSONS LTD. J4440 Yard No. 205 When built 1943.

Engines made at By whom made Engine No. When made

Boilers made at West Hartlepool By whom made Central Marine Engine Works Boiler No. 1356 When made 1943.

Nominal Horse Power Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs. Colvilles, Ltd.

(Letter for Record S)

Total Heating Surface of Boilers 2650 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Coal.

No. and Description of Boilers One single ended, return tube. Working Pressure 200 lbs.

Tested by hydraulic pressure to 350 lbs. Date of test 30-12-42 No. of Certificate 3990. Can each boiler be worked separately -

Area of Firegrate in each Boiler 63.36 sq. ft. No. and Description of safety valves to each boiler 2-2 1/2" Blackburns High Lift.

Area of each set of valves per boiler {per Rule 15.4 for ordinary valves as fitted 9.82 sq. ft. Pressure to which they are adjusted 200 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 13 1/2" Is oil fuel carried in the double bottom under boilers -

Smallest distance between shell of boiler and tank top plating - Is the bottom of the boiler insulated No.

Largest internal dia. of boilers 14'-9 3/8" Length 11'-6" Shell plates: Material Steel Tensile strength 29-33 tons

Thickness 1 5/16" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end D.R. LAP. inter. -

long. seams TR Double butt strap Diameter of rivet holes in {circ. seams 1 3/8" long. seams 1 3/8" Pitch of rivets {4" 9 1/2"

Percentage of strength of circ. end seams {plate 65.6 rivets 44.9. Percentage of strength of circ. intermediate seam {plate - rivets -

Percentage of strength of longitudinal joint {plate 85.52 rivets 88.54. combined 88.77.

Thickness of butt straps {outer 1" inner 1 1/8" No. and Description of Furnaces in each Boiler 3 corrugated Deighton section.

Material Steel Tensile strength 26-30 tons Smallest outside diameter 3'-6 3/16"

Length of plain part {top - bottom - Thickness of plates {crown 1 9/32" bottom 1 3/32" 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 Steel Tensile strength {26-30 tons 26-30 tons Thickness {7/8" 2 5/32"

Mean pitch of stay tubes in nests 11 5/8" x 7 3/4" Pitch across wide water spaces 13 5/8"

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 8 1/4" x 1 7/8" 2-1 15/32" plates Length as per Rule 2'-7 15/32" Distance apart 10 3/4" No. and pitch of stays

in each 2 @ 9 7/8"

Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 2 5/32" Back 3/4" Top 2 5/32" Bottom 2 5/32"

Pitch of stays to ditto: Sides 10 3/4" x 9 7/8" Back 9 7/8" x 9 1/2" Top 10 3/4" x 9 7/8" Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7/8"

Pitch of stays at wide water space 14 1/2" x 9 7/8" 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 3/8" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26-30 tons

Diameter {At turned off part, or Over threads 1 7/8" No. of threads per inch 9.

004321-004330-0046

© 2021

 Lloyd's Register
 Foundation

Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part,} 2" ^{or} Over threads

No. of threads per inch 9

Tubes: Material HRWS External diameter ^{Plain} 2 3/4" ^{Stay} 2 3/4" Thickness ^{8 W.G.} 3/8" & 5/16" No. of threads per inch 9

Pitch of tubes 3 1/8" x 3 1/8" Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 2-1 1/2" x 2-7 1/2" x 1 1/16" No. of rivets and diameter of rivet holes 32 @ 1 1/2"

Outer row rivet pitch at ends 10 1/8" Depth of flange if manhole flanged None Steam Dome: Material None

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 _____ 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 _____

The foregoing is a correct description,
 FOR THE CENTRAL MARINE ENGINE WORKS
 (W. Gray & Co. Ltd.) Manufacturer.

Dates of Survey ^{During progress of work in shops - -} 1942 Nov 27 Dec 2 14 18 19 21 23 29 30 Are the approved plans of boiler and superheater forwarded herewith 3-11-41
^{while building} ^{During erection on board vessel - - -} Yes (If not state date of approval.)

Total No. of visits 9

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. BOILER R353 RPT N° 18328

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under special survey and in accordance with the approved plan for a working pressure of 200 lbs per square inch. The materials and workmanship have been found good. Upon completion the boiler was tested in the presence of the undersigned by a hydraulic pressure of 350 lbs per square inch, showed no signs of weakness and was found tight and sound in every respect at that pressure. This boiler is being despatched to Sunderland for fitting on board.

This boiler has been efficiently fitted on board and its safety valves have been adjusted under steam. J. R. Horne

Survey Fee £ 17 : 14 : 0 When applied for, 12/11 1942
 Travelling Expenses (if any) £ : : When received, 19

Arthur W. Osgood
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute _____
 Assigned See Mtd. 2E 33629