

# REPORT ON BOILERS.

No. 17969.

Received at London Office - 8 SEP 1939

Date of writing Report 2/9/1939 When handed in at Local Office 5/9/1939 Port of WEST HARTLEPOOL

No. in Reg. Book. Survey held at WEST HARTLEPOOL Date, First Survey 27/1/39 Last Survey 1/9/1939

on the S.S. ATLANTIC (Number of Visits 98.) Gross 5114.07 Tons Net 3244.9.

Master Built at West Hartlepool By whom built William Gray & Co. Ltd. Yard No. 1094 When built 1939

Engines made at West Hartlepool By whom made (William Gray & Co. Ltd. Central Marine Eng. Works. Engine No. 1094 When made 1939.

Boilers made at West Hartlepool By whom made (William Gray & Co. Ltd. Boiler No. 1094 When made 1939.

Nominal Horse Power 442 Owners Sir Walter Herbert Bockertine Port belonging to Shell.

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs Colvilles (Letter for Record S.)

Total Heating Surface of Boilers 1484 sq ft Is forced draught fitted No. Coal or Oil fired Coal. Working Pressure 200 lbs.

No. and Description of Boilers 1 Single ended.

Tested by hydraulic pressure to 350 lbs Date of test 16.5.39. No. of Certificate 3902 Can each boiler be worked separately

Area of Firegrate in each Boiler 324 sq ft No. and Description of safety valves to each boiler 2 Bockertine High Lift.

Area of each set of valves per boiler {per Rule 4.316 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 21" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 3' 0 1/2" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 12' 3 1/16" Length 10' 6" Shell plates: Material Steel Tensile strength 29-33 tons

Thickness 1 3/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end DR. Lap. inter. Single Stroke

long. seams TRD Butt straps Diameter of rivet holes in {circ. seams 1 1/4" Pitch of rivets {4" 8 3/16"

Percentage of strength of circ. end seams {plate 68.75% rivets 44.4% Percentage of strength of circ. intermediate seam {plate 85.5% rivets 92.9%

Percentage of strength of longitudinal joint {plate 85.5% rivets 92.9% Working pressure of shell by Rules 201.3 lbs.

Thickness of butt straps {outer 3 1/32" inner 3 1/32" No. and Description of Furnaces in each Boiler 2 Deighton Section (Stephen Gouley end)

Material Steel Tensile strength 26-30 tons Smallest outside diameter 43 1/2"

Length of plain part {top Thickness of plates {crown 5/8" bottom Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 211.5 lbs.

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 1/32" Pitch of stays 21 x 15 1/2"

How are stays secured Double nuts Working pressure by Rules 203.3 lbs.

Tube plates: Material {front Steel Tensile strength 26-30 tons Thickness {3 1/32" 27 1/32"

Mean pitch of stay tubes in nests 11 1/16" Pitch across wide water spaces 14 1/4 x 8 3/4" Working pressure {front 232 lbs. back 210 lbs.

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

at centre 7 3/4" x (2 @ 3/8") Length as per Rule 30.4" Distance apart 9 1/2" No. and pitch of stays

in each 2 @ 9 1/2" Working pressure by Rules 206.2 lbs. Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 23/32"

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

Working pressure by Rules 200.5, 200.5, 201.1" Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 3 1/32" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 29/32"

Pitch of stays at wide water space 14 1/4 x 10" Are stays fitted with nuts or riveted over Nuts.

Working Pressure 222 lbs. Main stays: Material Steel Tensile strength 28-32 tons

Diameter {At body of stay, No. of threads per inch 6 Area supported by each stay 325.5 sq in

Working pressure by Rules 206.5 lbs. Screw stays: Material Steel Tensile strength 26-30 tons

Diameter {At turned off part, No. of threads per inch 9 Area supported by each stay 90.25 sq in

Working pressure by Rules 201-1 lbs Are the stays drilled at the outer ends Yes Margin stays: Diameter  At turned off part, 2" or  Over threads

No. of threads per inch 9 Area supported by each stay 116.250" Working pressure by Rules 212.9 lbs

Tubes: Material L.W. Wrought Iron External diameter  Plain 3 1/4" Thickness 8 SWG No. of threads per inch 9  
 Stay 3 1/4" 1 1/2" 3/16" 1/4" 5/16"

Pitch of tubes 4 1/2 x 4 3/8" (Plain) Working pressure by Rules 230 lbs Manhole compensation: Size of opening in shell plate 20 x 16" Section of compensating ring 3-1 x 2-9 x 1 1/2" No. of rivets and diameter of rivet holes 32 @ 1 3/8" dia

Outer row rivet pitch at ends 9 5/8" Depth of flange if manhole flanged 3 5/8" 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 \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_

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 \_\_\_\_\_

Area of each safety valve \_\_\_\_\_ Are the safety valves fitted with easing gear \_\_\_\_\_ Working pressure as per Rules \_\_\_\_\_

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

FOR THE CENTRAL MARINE ENGINE WORKS,  
 (W. Gray & Co., Ltd)  
John H. Gray GENERAL MANAGER Manufacturer.

The foregoing is a correct description,

Dates of Survey  During progress of work in shops - - -  Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 while building  During erection on board vessel - - -  Total No. of visits \_\_\_\_\_

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 and in accordance with the approved plans for a working pressure of 200 lbs.

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 were found sound and tight in every respect at that pressure.

Survey Fee ... £ : : } When applied for, 10  
 Travelling Expenses (if any) £ : : } When received, 10

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

Committee's Minute \_\_\_\_\_  
 Assigned See Spl. F.C. 17969

