

REPORT ON BOILERS.

No. 18917

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Date of writing Report. 2-12-1948. When handed in at Local Office. 2-12-1948. Port of. WEST HARTLEPOOL

No. in Reg. Book. Survey held at. WEST HARTLEPOOL. Date, First Survey. 18th November, 1947, Last Survey. 12th November, 1948

on the STEEL SCREW STEAMER "AVONDENE" (Number of Visits. 106....) Tons { Gross. 4952.77. Net. 2938.32.

Master. Built at WEST HARTLEPOOL By whom built. W^m GRAY & CO LTD Yard No. 1220 When built. 1948

Engines made at. WEST HARTLEPOOL By whom made. CENTRAL MARINE ENGINE WORKS Engine No. 1220 When made. 1948

Boilers made at. WEST HARTLEPOOL By whom made. CENTRAL MARINE ENGINE WORKS Boiler No. 1220 When made. 1948

Nominal Horse Power. 550 Owners. THE DENE SHIPPING CO LTD Port belonging to. LONDON.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel. Colvilles Ltd, Glasgow. (Letter for Record. 5.)

Total Heating Surface of Boilers. 6032 sq ft Spld 2552 sq ft Is forced draught fitted. yes ✓ Coal or Oil fired. oil ✓

No. and Description of Boilers. Two Single Ended Multitubular Working Pressure 225 lb/sq in

Tested by hydraulic pressure to 388 ✓ Date of test. 14.6.48 S. 21.6.48 P. No. of Certificate. H088 Can each boiler be worked separately. yes ✓

Area of Firegrate in each Boiler. — No. and Description of safety valves to each boiler. 2-2½ Cockburn I.H.L.

Area of each set of valves per boiler { per Rule. 7.85 sq in as fitted. 9.817 sq in ✓ Pressure to which they are adjusted. 230 lb/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. — Is oil fuel carried in the double bottom under boilers. Boilers in Tween Dk.

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

Largest internal dia. of boilers. 16'-0" ✓ Length. 11'-6" ✓ Shell plates: Material. S.M. Steel Tensile strength. 31-35T ✓

Thickness. 1½" ✓ Are the shell plates welded or flanged. no ✓ Description of riveting: circ. seams { end. D.R. lap. ✓ inter. 4" ✓

long. seams. T.R. Double Butt Straps Diameter of rivet holes in { circ. seams. 1½" ✓ long. seams. 1⅝" ✓ Pitch of rivets { 10⅞" ✓

Percentage of strength of circ. end seams { plate. 62.5 rivets. 43.7 ✓ Percentage of strength of circ. intermediate seam { plate. 84.7 rivets. 90.5 ✓

Percentage of strength of longitudinal joint { plate. 90.5 rivets. 87.4 ✓ Working pressure of shell by Rules. —

Thickness of butt straps { outer. 1½" ✓ inner. 1⅞" ✓ No. and Description of Furnaces in each Boiler. 3 Deighton Corrugated Section

Material. S.M. Steel Tensile strength. 26-30T ✓ Smallest outside diameter. 4'-0½" ✓

Length of plain part { top. — bottom. — Thickness of plates { crown. 3/4" ✓ bottom. 3/4" ✓ Description of longitudinal joint. welded. ✓

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

End plates in steam space: Material. S.M. Steel Tensile strength. 26-30T ✓ Thickness. 1⅜" ✓ Pitch of stays. 21" x 19½"

How are stays secured. Double nuts ✓ Working pressure by Rules. —

Tube plates: Material { front. S.M. Steel back. S.M. Steel Tensile strength { 26-30T ✓ Thickness { 7/8" ✓

Mean pitch of stay tubes in nests. Centre 8¼" x 12¾" wing 8½" x 12¾" Pitch across wide water spaces. 14" ✓ Working pressure { front. — back. —

Girders to combustion chamber tops: Material. S.M. Steel Tensile strength. 28-32T ✓ Depth and thickness of girder at centre. 9¼" x 1¾" (2-⅞" Plating) Length as per Rule. 2'-9⅜" ✓ Distance apart. 9¼" ✓ No. and pitch of stays in each. 3 at 8⅜" ✓ Working pressure by Rules. —

Tensile strength. 26-30T ✓ Thickness: Sides. 23/32" ✓ Back. 23/32" ✓ Top. 23/32" ✓ Bottom. 7/8" ✓

Pitch of stays to ditto: Sides. 8¾" x 9" ✓ Back. 7⅞" x 9¼" ✓ Top. 8⅜" x 9¼" ✓ Are stays fitted with nuts or riveted over. nuts ✓

Working pressure by Rules. — Front plate at bottom: Material. S.M. Steel Tensile strength. 26-30T ✓

Thickness. 1" ✓ Lower back plate: Material. S.M. Steel Tensile strength. 26-30T ✓ Thickness. 15/16" ✓

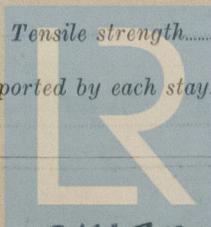
Pitch of stays at wide water space. 14¼" x 9¼" ✓ Are stays fitted with nuts or riveted over. nuts ✓

Working pressure. — Main stays: Material. S.M. Steel Tensile strength. 28-32T ✓

Diameter { At body of stay. 3½" ✓ or over threads. 3½" ✓ No. of threads per inch. 6 ✓ Area supported by each stay. — ✓

Working pressure by Rules. — Screw stays: Material. S.M. Steel Tensile strength. 26-30T ✓

Diameter { At turned off part. 1¾" ✓ or over threads. 1¾" ✓ No. of threads per inch. 9 ✓ Area supported by each stay. — ✓



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Working pressure by Rules. - Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part. *2"* or *2 1/4"* Over threads. *2"* *2 1/4"*
 No. of threads per inch. *9* Area supported by each stay. - Working pressure by Rules. -
 Tubes: Material. *H.R.W. Steel* External diameter { Plain. *3"* Stay. *3"* Thickness { *3/16"* *5/16"* No. of threads per inch. *9*
 Pitch of tubes. *4 1/4" x 4 1/8"* Working pressure by Rules. - Manhole compensation: Size of opening in
 shell plate. *20" x 16"* Section of compensating ring. *3' 1" x 2' 4" x 1 1/2"* No. of rivets and diameter of rivet holes. *32-1 5/8 holes*
 Outer row rivet pitch at ends. *10 5/8"* 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. 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 *Smoke Tube.* Manufacturers of { Tubes. *Talbot Steel Tube Co Ltd*
 Steel forgings. *South Durham S & S Co Ltd*
 Steel castings. *Hopkinson Ltd*
 Number of elements. *63 per boiler* Material of tubes. *S.C.D. Steel* Internal diameter and thickness of tubes. *17 7/8" x 2 1/2 7/8"*
 Material of headers. *S.M. Steel* Tensile strength. *26-30T* Thickness. *1 3/16"* 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. *1.76 sq"* Are the safety valves fitted with casing gear. *yes* Working pressure as per
 Rules. - Pressure to which the safety valves are adjusted. *233 lbs per sq"* Hydraulic test pressure:
 tubes. *1000 lbs per sq"* forgings and castings. *675 lbs per sq"* and after assembly in place. *675 lbs per 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. *yes.*

The foregoing is a correct description,
 FOR THE GENERAL MANAGER'S WORKS,
 (M. 611 & Co. Ltd.)

Dates { During progress of work in shops - - Are the approved plans of boiler and superheater forwarded herewith. *yes.*
 of Survey while building { During erection on board vessel - - (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. *Mardene W. Hpe No 18832*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been constructed under special survey in accordance with the approved plans, Secretary's letters and the Rules of the Society, for a working pressure of 225 lbs per square inch. The materials and workmanship are good. Upon completion they were examined under hydraulic pressure of 388 lbs per sq inch and found tight and sound at that pressure. The Boilers have been fitted with smoke tube superheaters as per above, and fitted to burn Oil Fuel (Flash point above 150°F) They have been securely fitted on board the vessel and their Safety Valves adjusted under steam to 230 lbs per sq inch For recommendations see Machinery Report.*

Survey Fee ... £ : : When applied for, ... 19.
 Travelling Expenses (if any) £ : : When received, ... 19.

John T. Lindley
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *THURS 23 DEC 1904*

Assigned *See F.E. mch. rpt.*



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