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MAY 1951

# REPORT ON BOILERS.

No. 15198

D.O.

Received at London Office 7 JUN 1951

Date of writing Report 28<sup>th</sup> May 51. When handed in at Local Office 5 June 1951. Port of Belfast

No. in Reg. Book. Survey held at Date, First Survey 11<sup>th</sup> Oct 1950 Last Survey 22 May 1951

on the m/s. "Ballata" (Number of Visits 17) Tons { Gross Net

Master Built at By whom built Yard No. When built

Engines made at By whom made Engine No. When made

Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 14196 When made 1951

Nominal Horse Power. Owners. Port belonging to

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel B. White. (Letter for Record S.)

Total Heating Surface of Boilers 2757 sq ft x 2. Is forced draught fitted Yes. Coal or Oil fired Oil

No. and Description of Boilers 2 Cylindrical Multitubular Working Pressure 180 lb sq in

Tested by hydraulic pressure to 320 lb sq in Date of test 20.3.51. No. of Certificate 1477. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler. No. and Description of safety valves to each boiler 1 of 2 1/2" improved high lift double spring

Area of each set of valves per boiler per Rule 8.814 sq in as fitted 9.817 sq in Pressure to which they are adjusted 180 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 Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork over 2' 0" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating on down deck platform Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 14' 0" Length 12' 6" Shell plates: Material Steel Tensile strength 29-33 tons sq in

Thickness 1 1/8" Are the shell plates welded or flanged No. Description of riveting: circ. seams end D.R. inter.

long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 1 1/4" long. seams 1 1/4" Pitch of rivets 3.089" 8"

Percentage of strength of circ. end seams plate 59.5% rivets 66% Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 84.7% rivets 99.8% 90% Working pressure of shell by Rules 180.8 lb sq in

combined 89.4% Thickness of butt straps outer 7/8" inner 1" No. and Description of Furnaces in each Boiler 3 Deighton

Material Steel Tensile strength 26-30 tons sq in Smallest outside diameter 3'-3 1/16"

Length of plain part top bottom Thickness of plates crown 17/32" bottom 17/32" Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 196 lb sq in

End plates in steam space: Material Steel Tensile strength 26-30 tons sq in Thickness 1 1/16" Pitch of stays 21" x 15" 16" x 15"

How are stays secured Double nut & washers Working pressure by Rules 183 lb sq in

Tube plates: Material front Steel back Steel Tensile strength 26-30 tons sq in Thickness 7/8" 3/4"

Mean pitch of stay tubes in nests 9 1/8" Pitch across wide water spaces 13 3/4" Working pressure front 196 lb sq in back 210 lb sq in

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

at centre 10 1/2" x 1 3/16" Length as per Rule 34 1/2" Distance apart 9 1/2" No. and pitch of stays

in each Welded Working pressure by Rules As approved Combustion chamber plates: Material Steel

Tensile strength 26-30 tons sq in Thickness: Sides 1 5/16" Back 3/4" Top 1 3/16" Bottom 1 3/16"

Pitch of stays to ditto: Sides 9 1/2" x 9" Back 9 1/2" x 9 1/2" Top Welded Are stays fitted with nuts or riveted over Riveted & riveted at shell.

Working pressure by Rules As approved Front plate at bottom: Material Steel Tensile strength 26-30 tons sq in

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

Pitch of stays at wide water space 13 3/4" Are stays fitted with nuts or riveted over Welded.

Working pressure As approved Main stays: Material Steel Tensile strength 28-32 tons sq in

Diameter At body of stay 3" Over threads 3" No. of threads per inch 6 Area supported by each stay 370 sq in

Working pressure by Rules As approved Screw stays: Material Steel Tensile strength 26-30 tons sq in

Diameter At turned off part 1 5/8" 1 3/4" 2" No. of threads per inch 9 (two shells only) Area supported by each stay 9 1/2" x 9 1/2" x 9 1/2" x 9"



Working pressure by Rules *As approved* Are the stays drilled at the outer ends. ☒ Margin stays: Diameter { At turned off part, *1 3/4"* or Over threads. *1 3/4"*

No. of threads per inch *Welded* Area supported by each stay *11 3/8" x 9 1/2"* Working pressure by Rules *As approved*

Tubes: Material *Seamless steel* External diameter { Plain *2 3/4"* Thickness { *9 L.S.G.* No. of threads per inch *9* Stay *2 3/4"*

Pitch of tubes *4" x 3 7/8"* Working pressure by Rules *As approved* Manhole compensation: Size of opening in shell plate *13 3/4" x 17 3/4"* Section of compensating ring *2' 4" x 7/8"* No. of rivets and diameter of rivet holes *Welded*

Outer row rivet pitch at ends. ☒ Depth of flange if manhole flanged *3 3/8"* 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. 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. Working pressure as per Rules. Hydraulic test pressure.

Pressure to which the safety valves are adjusted. Are drain cocks of tubes. forgings and castings. and after assembly in place.

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.

For HENDERLAND AND WOLFF LIMITED  
The foregoing is a correct description,  
*John V. Smith* Manufacturer

Dates of Survey while building { During progress of work in shops - *Oct 11, 12, Dec 29, Jan 10, 18, 24, 30* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *21st Decr 1948* *J.S.*  
During erection on board vessel - *Feb 6, 11, 22, Mar 7, 12, 15, 20, 21, Apr 4, May 22, 23* Total No. of visits *17*

Is this Boiler a duplicate of a previous case. *J.S.* If so, state Vessel's name and Report No. *"Bolette" Rpt No 15112*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
*These boilers have been examined under special survey in accordance with the Rules and approved plan.*  
*The materials and workmanship are good.*  
*These boilers have now been fitted on board this vessel, examined under working conditions & found satisfactory.*  
*Safety valves adjusted under steam 180 lbs. accumulation found to be in full requirements*

Survey Fee ... £ *71* : - : - } When applied for, *5 6 51*  
Travelling Expenses (if any) £ : : : } When received, *19*

*J. B. Cameron*  
Engineer Surveyor to Lloyd's Register of Shipping  
*E. Cranshaw for J. B. Cameron*  
a Secy

Committee's Minute. *GLASGOW 6 NOV 1951*  
Assigned. *SEE ACCOMPANYING MACHINERY REPORT*