

Rpt. 5a.

## REPORT ON BOILERS.

Sld. No. 32560

Mou No. 16467

Received at London Office

NOV 12 1938

Date of writing Report 3rd November 1938 When handed in at Local Office 16th November 1938 Port of Middlesbrough

No. in Survey held at Stockton Date, First Survey 14th September Last Survey 2nd November 1938

Reg. Book. M/V. "BRITISH GENIUS" (Number of Visits 9) Tons Gross 8553 Net 4961

on the Sunderland By whom built Wm. Doxford &amp; Sons Ltd. Yard No. 644 When built 1939

Engines made at Sunderland By whom made Wm. Doxford &amp; Sons Ltd. Engine No. 644 When made 1939

Boilers made at Stockton By whom made Stockton C.E. &amp; Riley Boilermakers Boiler No. 6294 When made 1938

Nominal Horse Power 684 Owners British Lander Co. Ltd. Port belonging to London.

Composite.  
MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Company of Scotland, Ltd. (Letter for Record Exhaust)

Total Heating Surface of Boilers 1355 Exhaust 1330 Is forced draught fitted Yes Coal or Oil fired Exhaust

No. and Description of Boilers 1 DB SB Working Pressure 150 lbs

Tested by hydraulic pressure to 275 Date of test 2.11.38 No. of Certificate 6959 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2 Sinec Spring

Area of each set of valves per boiler per Rule 16.3 as fitted 19.2 Pressure to which they are adjusted 150 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 Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating (Bhs. in upper room) Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 13'-4 1/4" Length 11'-6" Shell plates: Material S Tensile strength 30/34

Thickness 7/8" Are the shell plates welded or flanged No Description of riveting: circ. seams end DR

long. seams T.R. DBS Diameter of rivet holes in circ. seams 1 1/16" Pitch of rivets 6 3/8"

Percentage of strength of circ. end seams plate 69.2 rivets 42.4 Percentage of strength of circ. intermediate seam plate 85.8 rivets 85.8

Percentage of strength of longitudinal joint plate 85.8 rivets 85.8 Working pressure of shell by Rules 151.8

Thickness of butt straps outer 2 1/8" inner 2 5/8" No. and Description of Furnaces in each Boiler 2 Cf. (Centre CC Exhaust heated from back)

Material S Tensile strength 26-30 Smallest outside diameter 38 1/2"

Length of plain part top Thickness of plates crown 1 3/32" Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 150.6 lbs

End plates in steam space: Material S Tensile strength 26/32 Thickness 1 1/32" Pitch of stays 18"x18"

How are stays secured Double nuts &amp; washers 6"x6" Working pressure by Rules 152 lbs

Tube plates: Material front S Tensile strength 26.30 Thickness 7/8"

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 13 1/4" Working pressure front 163 lbs back 156 lbs

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

at centre 7 7/8" x 1 1/4" Length as per Rule 2'-3 1/16" Distance apart 8 3/4" No. and pitch of stays

in each 2 @ 7 1/2" Working pressure by Rules 176 lbs Combustion chamber plates: Material S

Tensile strength 26-30 Thickness: Sides 7/8" Back 23" C 3/4" Top 7/8" Bottom 7/8"

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

Working pressure by Rules 160 lbs Front plate at bottom: Material S Tensile strength 26-30

Thickness 7/8" Lower back plate: Material S Tensile strength 26-30 Thickness 3/4"

Pitch of stays at wide water space F 13 1/8" B 13 3/8" x 9" Are stays fitted with nuts or riveted over nuts

Working Pressure 160 lbs Main stays: Material S Tensile strength 28-32

Diameter At body of stay, No. of threads per inch 6 Area supported by each stay 324 sq"

Over threads 2 7/8" Working pressure by Rules 153 lbs Screw stays: Material S Tensile strength 26-30

Diameter At turned off part, No. of threads per inch 9 Area supported by each stay 78.8 sq"

Over threads Top 1 1/2" Back 1 1/2" Sides 1 1/8"

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Working pressure by Rules 160 Are the stays drilled at the outer ends NO Margin stays: Diameter { At turned off part, 1 5/8"  
Over threads 1 5/8"  
No. of threads per inch 9 Area supported by each stay 110 0" Working pressure by Rules 151 lbs  
Tubes: Material 1st & 2nd Iron External diameter { Plain 2 1/2" C 2" Thickness { 10 No. of threads per inch 9  
Stay 2 1/2" C 2" Centre 1/8" Manhole compensation: Size of opening in  
Pitch of tubes 3 1/4" x 3 1/4" C 3" x 3" Working pressure by Rules 175 lbs No. of rivets and diameter of rivet holes 82 2 1/4"  
shell plate 20" x 4" Section of compensating ring 9" x 1" Steam Dome: Material  
Outer row rivet pitch at ends 8 3/4" Depth of flange if manhole flanged  
Tensile strength Thickness of shell Description of longitudinal joint { Plate  
Pitch of rivets Percentage of strength of joint { Rivets  
Diameter of rivet holes Thickness of crown No. and diameter of  
Internal diameter Working pressure by Rules Working pressure by Rules  
stays Inner radius of crown Diameter of rivet holes and pitch  
How connected to shell Size of doubling plate under dome  
of rivets in outer row in dome connection to shell

## Type of Superheater

Number of elements Material of tubes Manufacturers of { Tubes  
Steel castings  
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 Pressure to which the safety valves are adjusted Hydraulic test pressure:  
tubes, 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* on behalf of  
The foregoing is a correct description,  
*W. H. Riley* Manufacturer  
DIRECTOR 17.6.37

Dates of Survey { During progress of work in shops - - Sept. 14, 22 Oct 3, 7, 10, 15, 25, 31 Nov. 2 Are the approved plans of boiler and superheater forwarded herewith 17.6.37  
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 made under special supervision in accordance with the approved Plan & the Requirements of the Rules. The materials & workmanship are good & the boiler was found satisfactory under 275 lbs hydraulic pressure. The boiler is to be fitted on board at Sunderland.*

*This boiler has been securely fixed on board the vessel, examined under Steam & Safety valves adjusted in accordance with Rule requirements*

*For recommendation please see Machinery Rpt.*

*D. H. Lister*

Survey Fee ... £ 14 : 8 : 0 When applied for, 11th November 1938  
Travelling Expenses (if any) £ ... : ... : ... When received, 1. 2 19 38

*Rehoff*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 20 JAN 1939

Assigned

*See F-12 machy rpt.*

This Certificate  
"While the Com  
executed, it is to be  
whatever to be held  
entry in the Register  
Committees or any M

(Rpt. 10.) 20m, 7.38.



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