

REPORT ON BOILERS.

No. 12451

Received at London Office

71 SEP 1939

36 Date of writing Report 10 When handed in at Local Office 8. 9. 1939 Port of Belfast
37 No. in Survey held at Belfast For vessels, please see T. 8. mch. report
38 Reg. Book 447 on the Twin Sc. "WELLINGTON STAR" (Number of Visits) Gross Tons Net
39 At Belfast By whom built Harland & Wolff Ltd. Yard No. 1016 When built 1939
40 Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. 1016 When made 1939
41 Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 1016 When made 1939
42 Owners Blue Star Line Ltd. Port belonging to Belfast

VERTICAL DONKEY BOILER.

43 Made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 1016 When made 1939 Where fixed Engine Room Top forward on bridge deck level
44 Manufacturers of Steel Colvilles Ltd.
45 Total Heating Surface of Boiler oil firing 300 sq. ft. 475 sq. ft. total 775 sq. ft. Is forced draught fitted Yes Coal or Oil fired oil
46 Name and Description of Boilers One Clarkson shrinkable tube type BATOR 775 Working pressure 80 lbs. per sq. in.
47 Tested by hydraulic pressure to 160 lbs. per sq. in. Date of test 27. 4. 39 No. of Certificate 1059
48 No. and Description of safety valves to each boiler 2" double-spring J. H. K.
49 No. of each set of valves per boiler { per rule 1.7 sq. in. as fitted 6.28 sq. in. Pressure to which they are adjusted 80 lbs. per sq. in. Are they fitted with easing gear Yes
50 State whether steam from main boilers can enter the donkey boiler Yes Smallest distance between boiler or uptake and tank 5' 9" Is oil fuel carried in the double bottom under boiler No Smallest distance between base of boiler and tank top plating 16' 9"
51 Is the base of the boiler insulated No Largest internal dia. of boiler 5' 10 7/8" Height shell 16' 9"
52 All plates: Material Steel Tensile strength 28/32 tons per sq. in. Thickness 7/8"
53 The shell plates welded or flanged at butt joints Description of riveting: circ. seams { end D. R. inter. D. R. long. seams D. R., D. B. S.
54 No. of rivet holes in { circ. seams 1 1/4" Pitch of rivets { 3 1/2" Percentage of strength of circ. seams { plate 64.3 rivets 66.0 of Longitudinal joint { plate 73.5 rivets 82.0 combined
55 Working pressure of shell by rules 147 lbs. per sq. in. Thickness of butt straps { outer 1 1/16" inner 1 1/16"
56 Crown: Whether complete hemisphere, dished partial spherical, or flat dished partial spherical Material Steel
57 Tensile strength 26/30 tons per sq. in. Thickness 2 1/32" Radius 5' 6" Working pressure by rules 94.5 lbs. per sq. in.
58 Description of Furnace: Plain, spherical, or dished crown dished crown Material Steel Tensile strength 26/30 tons per sq. in.
59 Thickness 2 7/32" External diameter { top 3' 37 9/16" Length as per rule 7' 0" Working pressure by rules 111.5 lbs. per sq. in.
60 No. and of support stays circumferentially and vertically Are stays fitted with nuts or riveted over Yes
61 Diameter of stays over thread Yes Radius of spherical or dished furnace crown 3' 0" Working pressure by rule 206 lbs. per sq. in.
62 Thickness of stays bottom dished plate 3/4" Diameter as per rule { D. A. Working pressure by rule 136 lbs. per sq. in.
63 Combustion Chamber: Material Steel Tensile strength 26/30 tons per sq. in. Thickness of top plate 1/2"
64 Is it dished Yes Working pressure by rule 136 lbs. per sq. in. Thickness of back plate 1/2" Diameter if circular 3' 0"
65 Pitch of stays Yes Are stays fitted with nuts or riveted over Yes
66 Diameter of stays over thread Yes Working pressure of back plate by rules 136 lbs. per sq. in.
67 Plates: Material { front Steel back Steel Tensile strength { front 26/30 tons per sq. in. back 26/30 tons per sq. in. Thickness { front 1/2" back 1/2" Mean pitch of stay tubes in nests 3' 0"
68 Comprising shell, Dia. as per rule { front 3' 0" Pitch in outer vertical rows { front 3' 0" Dia. of tube holes FRONT { stay 3' 0" plain 3' 0" BACK { stay 3' 0" plain 3' 0"
69 Each alternate tube in outer vertical rows a stay tube Yes Working pressure by rules { front 136 lbs. per sq. in. back 136 lbs. per sq. in.
70 Stays to combustion chamber tops: Material Steel Tensile strength 26/30 tons per sq. in.
71 Thickness and thickness of girder at centre 1/2" Length as per rule 7' 0"
72 Distance apart 1' No. and pitch of stays in each 4 stays 3' 0" Working pressure by rule 136 lbs. per sq. in.

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W100-0070

Crown stays: Material ☒ Tensile strength ☒ Diameter ☒ at body of stay, or over threads.

No. of threads per inch ☒ Area supported by each stay ☒ Working pressure by rules ☒

Screw stays: Material ☒ Tensile strength ☒ Diameter ☒ at turned off part, or over threads.

No. of threads per inch ☒ Area supported by each stay ☒ Working pressure by rules ☒ Are the stays drilled at the outer ends ☒

Tubes: Material *Shumble tubes - steel* External diameter *3 1/4" in ends shell* Thickness *.114"*

No. of threads per inch ☒ Pitch of tubes *Shell No. 7" No. 6" inner No. 6.283"* Working pressure by rules ☒

Manhole Compensation: Size of opening in shell plate *16" x 12"* Section of compensating ring *6" x 1 1/2"* No. of rivets and diameter of rivet holes *36 - 1 1/4"* Outer row rivet pitch at ends *6.28"* Depth of flange if manhole flanged *in crown 3"*

Uptake: External diameter *21 1/16"* Thickness of uptake plate *17/32"*

Cross Tubes: No. ☒ External diameters ☒ Thickness of plates ☒

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes.*

The foregoing is a correct description,
A. J. Marshall *Secretary.*

Dates of Survey ☒ During progress of work in shops - ☒ Is the approved plan of boiler 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 was constructed under special survey and to an approved design. The materials and workmanship are good. It was tested by hydraulic pressure, efficiently installed and fastened on upper deck in the motor room. The safety valves were adjusted under steam, the accumulation satisfactory. They are adapted for exhaust gas and oil burning. In our opinion the boiler is eligible for use on a classed vessel.

Survey Fee £ *See machinery report* When applied for, 19

Travelling Expenses (if any) £ *See machinery report* When received, 19

R. Lee James & Co. Ltd.
 Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute *19 SEP 1939*
 Assigned *See Bel. J.C. 12457*