

REPORT ON BOILERS.

No. 68146

Received at London Office 10 MAR 1944

Date of writing Report 19 When handed in at Local Office 19 Port of Glasgow

No. in Reg. Book. Survey held at Glasgow & Greenock Date, First Survey 6.4.43 Last Survey 18.2.1944

on the S.S. "GEOLOGIST" (Number of Visits 63) Gross 6201.95 Tons Net 3662.78

Built at Port Glasgow By whom built Messrs Lithgows Ltd Yard No. 989 When built 1944

Engines made at Glasgow By whom made David Rowan & Co. Ltd Engine No. 1132 When made 1944

Boilers made at -do- By whom made -do- Boiler No. 1132 When made 1944

Nominal Horse Power 524 Owners Charente S.S. Co. Ltd. Port belonging to Liverpool

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd. (Letter for Record (r) ✓)

Total Heating Surface of Boilers 8208 ft^2 ✓ Is forced draught fitted No ✓ Coal or Oil fired Coal ✓

No. and Description of Boilers 2 Double Ended ✓ Working Pressure 210 $\text{lbs}/\text{sq. in.}$

Tested by hydraulic pressure to 365 $\text{lbs}/\text{sq. in.}$ Date of test 14/12/43 No. of Certificate 21594 Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler 107.5 sq. ft. No. and Description of safety valves to each boiler 2-3 "Improved high lift" ✓

Area of each set of valves per boiler { per Rule 11.4 sq. in. as fitted 14.12 sq. in. Pressure to which they are adjusted 210 $\text{lbs}/\text{sq. in.}$ 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 15" ✓ Is oil fuel carried in the double bottom under boilers No ✓

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 15'-8 3/8" ✓ Length 14'-6" ✓ Shell plates: Material S.M. Steel Tensile strength 29-33 Tons ✓

Thickness 1 7/16" & 1 5/32" Are the shell plates welded or flanged No ✓ Description of riveting: circ. seams end D.R. ✓

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams B. 1 1/2" C 1 1/2" F 1 1/2" Pitch of rivets { B. 4-20, C 4-23, F 3-34" ✓

Percentage of strength of circ. end seams { plate 86.43 F 60.7 rivets 84.55 F 44.8 Percentage of strength of circ. intermediate seam { plate 64.4 rivets 68.2 ✓

Percentage of strength of longitudinal joint { plate OUTER 85.6, INNER 85.36 rivets " 85.7, " 88.7 combined " 88.3, " 88.6 ✓

Thickness of butt straps { outer Centre 1 3/4", End 1 3/2" inner " 1 5/8" " 1 5/2" No. and Description of Furnaces in each Boiler Six Dighton ✓

Material S.M. Steel Tensile strength 26-30 Tons ✓ Smallest outside diameter 3'-8 3/2" ✓

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 4 1/4" bottom 64" ✓ Description of longitudinal joint Welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓

End plates in steam space: Material S.M. Steel Tensile strength 26-30 Tons ✓ Thickness 1 5/32" ✓ Pitch of stays 21 3/4" x 22" ✓

How are stays secured D.N. ✓

Tube plates: Material { front S.M. Steel Tensile strength { 26-30 Tons Thickness { 1 1/32" ✓

Mean pitch of stay tubes in nests 12 3/16" ✓ Pitch across wide water spaces 14 1/2" ✓

Girders to combustion chamber tops: Material S.M. Steel Tensile strength 28-32 Tons ✓ Depth and thickness of girder at centre 2 @ 12 1/8" x 7/8" ✓ Length as per Rule 3'-9 15/16" ✓ Distance apart Wing 9 1/4" INNER 7 1/4" ✓ No. and pitch of stays in each 4 @ 9" ✓

Combustion chamber plates: Material S.M. Steel

Tensile strength 26-30 Tons ✓ Thickness: Sides 2 3/32" ✓ Back ✓ Top 2 3/32" ✓ Bottom 2 3/32" ✓

Pitch of stays to ditto: Sides 9" x 9 1/4" ✓ Back ✓ Top 9" x 9 1/4" ✓ Are stays fitted with nuts or riveted over Nuts ✓

Front plate at bottom: Material S.M. Steel Tensile strength 26-30 Tons ✓

Thickness 1" Lower back plate: Material S.M. Steel Tensile strength 26-30 Tons ✓ Thickness 1" ✓

Pitch of stays at wide water space ✓ Are stays fitted with nuts or riveted over ✓

Main stays: Material S.M. Steel Tensile strength 28-32 Tons ✓

Diameter { At body of stay, or Over threads 3 1/2" x 3 1/4" ✓ No. of threads per inch 6 ✓

Screw stays: Material Iron Tensile strength 21 1/2 Tons ✓

Diameter { At turned off part, or Over threads 1 3/4" ✓ No. of threads per inch 9 ✓

Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, ☒ or Over threads ☒

No. of threads per inch ☒

Tubes: Material Iron External diameter { Plain 3½" Stay 3½" Thickness { 4 W.G. 3/8" No. of threads per inch 9

Pitch of tubes 4 7/8" x 4 7/8" Manhole compensation: Size of opening in shell plate 19½" x 15½" Section of compensating ring 10 1/4" x 1 15/32" No. of rivets and diameter of rivet holes 34 @ 1½"

Outer row rivet pitch at ends 10 7/16" Depth of flange if manhole flanged 3" 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 ☒ Thickness of crown ☒ No. and diameter of stays ☒ Inner radius of crown ☒

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 None 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 ☒

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

The foregoing is a correct description,
For David Rowan & Co. Ltd. Manufacturer.
Archd. H. Stevenson

Dates of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)
while building { During erection on board vessel - - - } See attached machy report Total No. of visits 1

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. "Prospector" Glasgow Report No. 677/93

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey in accordance with the Rules & approved plans, and the materials & workmanship are good. They have been satisfactorily installed in the vessel & the safety valves have been adjusted to the working pressure.

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

James Stevenson & M. Caldwell
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute GLASGOW - 7 MAR 1904
Assigned