

## REPORT ON BOILERS.

No. 25109

5/1/54 To 18/3/1954 Date of writing Report  
 18/3/1954 When handed in at Local Office  
 18/3/1954 Port of GREENOCK  
 Received at London Office 31 MAR 1954  
 No. in Reg. Book. Survey held at GREENOCK  
 Date, First Survey 26<sup>th</sup> 1952 Last Survey 2/3/1954  
 359638 on the SINGLE SCREW MOTORSHIP "DAVANGER" (Number of Visits.....) Tons {Gross 11826.54 Net 6483.07  
 Built at PORT GLASGOW By whom built LITHGOWS LTD., EAST Yard No. 1079 When built 3/1954  
 Engines made at GREENOCK By whom made JOHN G. KINCAID & CO., LTD., Engine No. K243 When made 3/1954  
 Boilers made at GREENOCK By whom made JOHN G. KINCAID & CO., LTD., Boiler No. K243 When made 3/1954  
 MN as per Rule ✓ Owners WESTFAL - LARSEN & CO., A/S Port belonging to BERGEN

TWO MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel COLVILLES LTD.

Total Heating Surface of Boilers 2 X 2955 = 5910 SQ. FT. Of Superheaters ✓

Total for Register Book 5910 SQ. FT. ✓ Is forced draught fitted YES ✓ Coal or Oil fired OIL ONLY ✓

No. and Description of Boilers 2 S.E. CYLINDRICAL MULTITUBULAR ✓ Working Pressure 180  $\frac{\text{lbs}}{\text{sq. in.}}$  ✓Tested by hydraulic pressure to 320  $\frac{\text{lbs}}{\text{sq. in.}}$  ✓ Date of test 4/12/53 2730 No. of Certificate 1731 Can each boiler be worked separately YES ✓Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler ONE - 2 $\frac{1}{2}$ " D&L SPRING IMPROVED HIGH LIFT ✓Area of each set of valves per boiler {per Rule 9.46  $\frac{\text{sq. in.}}$  ✓ as fitted 9.81  $\frac{\text{sq. in.}}$  ✓ Pressure to which they are adjusted 180  $\frac{\text{lbs}}{\text{sq. in.}}$  ✓ 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 ✓ Is oil fuel carried in the double bottom under boilers ON FLAT. No. BOILERS

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated No ✓

Largest internal dia. of boilers 15' - 4 $\frac{3}{4}$ " ✓ Length 12' - 0" Shell plates: Material STEEL ✓ Tensile strength 29/33  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓If fusion welded, state name of welding Firm ✓ Have all the requirements of the Rules for Class I vessels been complied with ✓ Thickness 1 $\frac{1}{32}$ " ✓ Are the shell plates welded or flanged ✓ Description of riveting: circ. seams {end DR ✓ inter ✓long. seams TRDBS ✓ Diameter of rivet holes in {circ. seams 1 $\frac{1}{4}$ " ✓ long. seams 1 $\frac{1}{4}$ " ✓ Pitch of rivets {3.5630 ✓ 8 $\frac{1}{2}$ " ✓

Percentage of strength of circ. end seams {plate 64.7 ✓ rivets 44.6 ✓ Percentage of strength of circ. intermediate seam {plate 85.29 ✓ rivets 87.6 ✓

Percentage of strength of longitudinal joint {plate 88.1 ✓ rivets 88.1 ✓ combined 88.1 ✓

Thickness of butt straps {outer 1" ✓ inner 1 $\frac{1}{8}$ " ✓ No. and Description of Furnaces in each Boiler 3 - DEIGHTON CORRUGATEDMaterial STEEL ✓ Tensile strength 26/30  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓ Smallest outside diameter 3' - 11 $\frac{3}{16}$ " ✓Length of plain part {top ✓ bottom ✓ Thickness of plates 1 $\frac{1}{32}$ " ✓ Description of longitudinal joint WELD ✓

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

End plates in steam space: Material STEEL ✓ Tensile strength 26/30  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓ Thickness 1 $\frac{1}{32}$ " ✓ Pitch of stays 1' - 8 $\frac{1}{2}$ " X 1' - 10" ✓

How are stays secured DN ✓

Tube plates: Material {front STEEL ✓ back " ✓ Tensile strength 26/30  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓ Thickness 1 $\frac{1}{16}$ " ✓Lean pitch of stay tubes in nests 8.74" ✓ Pitch across wide water spaces 1' - 1 $\frac{1}{2}$ " ✓Girders to combustion chamber tops: Material STEEL ✓ Tensile strength 29/33  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓centre 10" X 1 $\frac{3}{16}$ " ✓ Length as per Rule 2' - 11 $\frac{5}{8}$ " ✓ Distance apart CENTRE 7" CENTRES ✓ No. and pitch of stayseach NONE. GIRDERS WELDED TO BOXES. ✓ SHELDS EACH 3" LONG APPROX 9 $\frac{1}{2}$  C&S ✓ Combustion chamber plates: Material STEEL ✓Tensile strength 26/30  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓ Thickness: Sides 2 $\frac{1}{32}$ " ✓ Back 2 $\frac{1}{32}$ " ✓ Top 2 $\frac{1}{32}$ " ✓ Bottom 2 $\frac{1}{32}$ " ✓Pitch of stays to ditto: Sides 9" X 9 $\frac{1}{4}$ " ✓ Back CENTRE 9" X 7 $\frac{1}{2}$ " ✓ Top GIRDERS ✓ Are stays fitted with nuts ~~riveted over~~ ON SHELL PLATE. YES EXCEPTFront plate at bottom: Material STEEL ✓ Tensile strength 26/30  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓Thickness 1 $\frac{1}{16}$ " ✓ Lower back plate: Material STEEL ✓ Tensile strength 26/30  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓ Thickness 2 $\frac{1}{32}$ " ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓ Are stays fitted with nuts ~~riveted over~~ YES ✓Main stays: Material STEEL ✓ Tensile strength 28/32  $\frac{\text{TONS}}{\text{sq. in.}}$  ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓Pitch of stays at wide water space 1' - 1 $\frac{1}{2}$ " X 9" ✓

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Are the stays drilled at the outer ends. No ✓ Margin stays: Diameter { At turned off part, 1 1/4" ✓ or Over threads..... 1 1/4" ✓

No. of threads per inch. 9 ✓

Tubes: Material PLAIN - ERW STEEL ✓ External diameter { Plain 2 1/2" ✓ Stay 2 1/2" ✓ Thickness { 9 W.G. ✓ 1/4" 5/16" & 3/8" ✓ No. of threads per inch 9 ✓

Pitch of tubes 3 3/4" x 3 3/4" ✓ Manhole compensation: Size of opening in shell plate 20 1/2" x 16 1/2" ✓ Section of compensating ring 27.08" ✓ No. of rivets and diameter of rivet holes 36 - 1 3/8" ✓

Outer row rivet pitch at ends 9 3/8" ✓ Depth of flange if manhole flanged 4" ✓ 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..... 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 THE APPROPRIATE 14 to 22 inclusive for boilers been complied with. YES ✓

For JOHN G. KINCAID & COY. LIMITED.  
The foregoing is a correct description,  
W. G. Kincaid Chief Draughtsman. Manufacturer.

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 - - - } Total No. of visits.....

SEE ACCOMPANYING MACH. REPORT.

Is this Boiler a duplicate of a previous case. YES If so, state Vessel's name and Report No. "BEDFORD" - GRK. No 24954

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) THE BOILERS HAVE BEEN CONSTRUCTED UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE RULES AND APPROVED PLANS. THE MATERIALS AND WORKMANSHIP ARE GOOD. THE BOILERS HAVE BEEN EFFICIENTLY INSTALLED ON BOARD THE VESSEL AND THE SAFETY VALVES WERE ADJUSTED UNDER STEAM TO 180 <sup>lbs</sup>/<sub>sq</sub> IN. A SATISFACTORY ACCUMULATION TEST WAS CARRIED OUT.

COMPRESSION RINGS:-		PORT BOILER.	STARBOARD BOILER.
PORT VALVE	<u>3/8"</u>	<u>7/16"</u>	
STARBOARD VALVE	<u>5/8"</u>		<u>7/16"</u>

[SEE MACHINERY REPORT

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

H. K. Taylor.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 30 MAR 1954

Assigned SEE ACCOMPANYING MACHINERY REPORT