

No. 48972

Received at London Office

13 MAR 1929

Surgery held at Yroon Date, First Surgery ☒ Last Surgery 25-2- 1929.

on the S.S. EMERALD (Number of Visits ✓) Gross Tons 10

Built at	Port Glasgow	By whom built	A. Rodger & Co	Yard No.	When built	1904-
Made at	Port Glasgow	By whom made	A. Rodger & Co.	Engine No.	When made	1904
Made at	Glasgow	By whom made	<u>David Rowan & Co Ltd</u>	Boiler No.	When made	1929.
Horse Power		Owners	Wm Robertson.	Port belonging to	Glasgow.	

TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY. *as per Glasgow Report No. 48675.*

Warren of Steel _____ (Letter for Record)

Heating Surface of Boilers	Is forced draught fitted	Coal or Oil fired
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Description of Boilers Working Pressure 160 lbs. n

hydraulic pressure to _____ Date of test _____ No. of Certificate 18114 Can each boiler be worked separately _____

Firegate in each Boiler	No. and Description of safety valves to each boiler
	1 ^{the pass spring loaded valve} 2" C.A. ^{Double Acting}

each set of valves per boiler (per Rule 13-5-8) Pressure to which they are adjusted 160 lbs. Are they fitted with cushion gear Yes

donkey boilers, state whether steam from main boilers can enter the donkey boiler

Distance between boilers or uptakes and bunkers or woodwork 4' - 3" Is oil fuel carried in the double bottom under boilers -

distance between shell of boiler and tank top plating

Internal dia. of boilers	Length	Shell plates: Material	Tensile strength
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Are the shell plates welded or flanged

...eire, seama

Each of rivets (long. screws) *unget*

% of strength of circ. end seams $\left\{ \begin{array}{l} \text{plate} \\ \text{rivets} \end{array} \right.$ _____
 Percentage of strength of circ. intermediate seam $\left\{ \begin{array}{l} \text{plate} \\ \text{rivets} \end{array} \right.$ _____

[illegible]

combined

No. and Description of Furnaces in each Boiler	No. and Description of Furnaces in each Boiler	No. and Description of Furnaces in each Boiler	No. and Description of Furnaces in each Boiler	No. and Description of Furnaces in each Boiler
of butt straps				

Tensile strength Smallest outside diameter

plain part $\left\{ \begin{array}{l} \text{top} \\ \text{bottom} \end{array} \right.$	Thickness of plates $\left\{ \begin{array}{l} \text{crown} \\ \text{bottom} \end{array} \right.$	Description of longitudinal joint

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

Stays in steam space :	<i>Material</i>	<i>Tensile strength</i>	<i>Thickness</i>	<i>Pitch of stays</i>
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days secured *Working pressure by Rules*

Material	front	Tensile strength	Thickness
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at stone tubes in nests

Combustion chamber temp.: M_{ch} , T_{ch} , P_{ch} , ρ_{ch} , a_{ch} , $c_{p,ch}$, γ_{ch} , μ_{ch} , k_{ch} , D_{ch} , λ_{ch} , σ_{ch}

[illegible]

Weight of gas per hour	Pressure, lb.	Temp. and pressure of oxygen
55.11	1.0-1.1	Combustion chamber plates: Hot: 121

Depth	Thickness.	State	Back	Top	Bottom
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
39	39	39	39	39	39
40	40	40	40	40	40
41	41	41	41	41	41
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
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73	73	73	73	73	73
74	74	74	74	74	74
75	75	75	75	75	75
76	76	76	76	76	76
77	77	77	77	77	77
78	78	78	78	78	78
79	79	79	79	79	79
80	80	80	80	80	80
81	81	81	81	81	81
82	82	82	82	82	82
83	83	83	83	83	83
84	84	84	84	84	84
85	85	85	85	85	85
86					

ends to and to: Sides _____ Back _____ Top _____ Are ends joined with nails or thread over _____

Pressure by Rules Front plate at bottom: Material Tensile strength

Lower back plate: Material	Tensile strength	Thickness
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Slays at wide water space

Pressure	Main stays: Material	Tensile strength
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No. of stay, or	No. of threads per inch	Area supported by each stay
1		
2		
3		
4		
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97		
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99		
100		

Pressure by Rules	Screw stays: Material	Tensile strength
1000	1000	1000
2000	2000	2000
3000	3000	3000
4000	4000	4000
5000	5000	5000
6000	6000	6000
7000	7000	7000
8000	8000	8000
9000	9000	9000
10000	10000	10000
11000	11000	11000
12000	12000	12000
13000	13000	13000
14000	14000	14000
15000	15000	15000
16000	16000	16000
17000	17000	17000
18000	18000	18000
19000	19000	19000
20000	20000	20000
21000	21000	21000
22000	22000	22000
23000	23000	23000
24000	24000	24000
25000	25000	25000
26000	26000	26000
27000	27000	27000
28000	28000	28000
29000	29000	29000
30000	30000	30000
31000	31000	31000
32000	32000	32000
33000	33000	33000
34000	34000	34000
35000	35000	35000
36000	36000	36000
37000	37000	37000
38000	38000	38000
39000	39000	39000
40000	40000	40000
41000	41000	41000
42000	42000	42000
43000	43000	43000
44000	44000	44000
45000	45000	45000
46000	46000	46000
47000	47000	47000
48000	48000	48000
49000	49000	49000
50000	50000	50000
51000	51000	51000
52000	52000	52000
53000	53000	53000
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58000	58000	58000
59000	59000	59000
60000	60000	60000
61000	61000	61000
62000	62000	62000
63000	63000	63000
64000	64000	64000
65000	65000	65000
66000	66000	66000
67000	67000	67000
68000	68000	68000
69000	69000	69000
70000	70000	70000
71000	71000	71000
72000	72000	72000
73000	73000	73000
74000	74000	74000
75000	75000	75000
76000	76000	76000
77000	77000	77000
78000	78000	78000
79000	79000	79000
80000	80000	80000
81000	81000	81000
82000	82000	82000
83000	83000	83000
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91000	91000	91000
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94000	94000	94000
95000	95000	95000
96000	96000	96000
97000	97000	97000
98000	98000	98000
99000	99000	99000
100000	100000	100000

At turned off part,
or
No. of threads per inch 103 1/2 Area supported by each stay 926

REPORT ON BOILERS

Working pressure by Rules _____ Are the stays drilled at the outer ends _____ Margin stays: Diameter { At turned off part, or Over threads _____

No. of threads per inch _____ Area supported by each stay _____ Working pressure by Rules _____

Tubes: Material _____ External diameter { Plain Stay _____ Thickness _____ No. of threads per inch _____

Pitch of tubes _____ Working pressure by Rules _____ Manhole compensation: Size of open shell plate _____ Section of compensating ring _____ No. of rivets and diameter of rivet holes _____

Outer row rivet pitch at ends _____ Depth of flange if manhole flanged _____ 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 of rivets in outer row in dome connection to shell _____

Type of Superheater _____ Manufacturers of { Tubes 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 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 casing gear _____ Working pressure _____

Rules _____ Pressure to which the safety valves are adjusted _____ Hydraulic test pressure _____

tubes _____ and after assembly in place _____ Are drain cocks or valves to free the superheater from water where necessary _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with _____

The foregoing is a correct description, _____

Manuf _____

Dates of Survey { During progress of work in shops - - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building { During erection on board vessel - - - } See Accompanying Repair Report Total No. of visits _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boiler has been securely fitted on board the vessel and examined under steam. The safety valves were adjusted under steam to 160 lbs. Rings P & S, valves $\frac{13}{32}$ "

Survey Fee ... £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

David C Barr.

Engineer Surveyor to Lloyd's Register of Ships

Committee's Minute GLASGOW 12 MAR 1929

Assigned See accompanying report.



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