

## REPORT ON MACHINERY.

Port of

Glasgow &amp; Grimsby

FRI. 29 JUN 1900

No. in Survey held at  
Reg. Book.

Glasgow &amp; Grimsby

Date, first Survey

20 Oct 99 Last Survey 26 March 1900

Name of ship on the

S. S. KING RICHARD

Master J. Crocker 99-00

Built at Grimsby

By whom built

Schofield, Hagerup &amp; Doughty, Ltd

When built 1900

Engines made at

Glasgow

By whom made

Muir &amp; Houston Ltd

when made

1900

Boilers made at

Grimsby

By whom made

Schofield, Hagerup &amp; Doughty, Ltd

when made

1900

Registered Horse Power

Owners Monarch Steam Towing Co. Ltd

Port belonging to

Grimsby

Nom. Horse Power as per Section 28

46

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines Triple expansion screw No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 10", 17", 28" Length of Stroke 20" Revs. per minute 5.68 as per rule 5.68  
 Dia. of Tunnel shaft as per rule 5.4 as fitted 5.4 Lgth. of stern bush 1'-11"  
 Dia. of Crank shaft journals as per rule 5.78 as fitted 5.78 Dia. of Crank pin 5.78 Size of Crank webs 3.78 Dia. of thrust shaft under collars 5.78 Dia. of screw 8'-0" Pitch of screw 9'-0" to 10'-0" No. of blades 4 State whether moveable no Total surface 21 sq. ft.  
 No. of Feed pumps 1 Diameter of ditto 2 Stroke 10" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps 1 Diameter of ditto 2 1/4 Stroke 10" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines One Sizes of Pumps 5" x 2 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2" Sea. Bilge. Hotwell In Holds, &c. 2" Dish Hold.

No. of bilge injections one size 2 1/2" Connected to condenser, or to circulating pump circ. pumps a separate donkey suction fitted in Engine room & size 2"-2" and steam jet  
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible none  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves & Cocks  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the discharge pipes above or below the deep water line Aboard  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off cocks fitted with a spigot and brass covering plate Yes  
 What pipes are carried through the bunkers One Suction (Fish Hold) How are they protected Wood casing  
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock How new Is the screw shaft tunnel watertight none  
 Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 836 sq. ft Is forced draft fitted No  
 No. and Description of Boilers One Cylindrical Multitubular Working Pressure 180 lb Tested by hydraulic pressure to 360 lb  
 Date of test 1/11/99 Can each boiler be worked separately ✓ Area of fire grate in each boiler 28 sq. ft No. and Description of safety valves to each boiler 2 - Direct Spring Area of each valve 3.14 sq. in Pressure to which they are adjusted 180 lb per sq. in Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 7 1/2" Mean dia. of boilers 10' 6" Length 9' 0" Material of shell plates Steel  
 Thickness 29/32 Range of tensile strength 28/32 Are they welded or flanged neither Descrip. of riveting: cir. seams DR. lap long. seams TR. double straps  
 Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 17"  
 Per centages of strength of longitudinal joint rivets 87 1/2 plate 85 1/2 Working pressure of shell by rules 183 lb per sq. in Size of manhole in shell 16" x 12"  
 Size of compensating ring Patent Ring No. and Description of Furnaces in each boiler 2 - Plain Material Steel Outside diameter 3' 5"  
 Length of plain part top 5' 6" bottom 5' 10" Thickness of plates crown 3/4 bottom 3/4 Description of longitudinal joint Weld No. of strengthening rings none  
 Working pressure of furnace by the rules 198 lb Combustion chamber plates: Material Steel Thickness: Sides 9/16 Back 9/16 Top 9/16 Bottom 7/8  
 Pitch of stays to ditto: Sides 7 3/4 x 7 1/4 Back 7 3/4 x 7 1/4 Top 7 3/4 x 7 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lb  
 Material of stays Steel Area at smallest part 1.45 sq. in Area supported by each stay 60.06 sq. in Working pressure by rules 192 lb End plates in steam space:  
 Material Steel Thickness 15/16 Pitch of stays 15" x 15" How are stays secured Nuts Working pressure by rules 185 lb Material of stays Steel  
 Area at smallest part 4.37 sq. in Area supported by each stay 225 sq. in Working pressure by rules 194 lb Material of Front plates at bottom Steel  
 Thickness 11/16 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 9 1/2 Working pressure of plate by rules 188 lb  
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 Material of tube plates Steel Thickness: Front 11/16 Back 11/16 Mean pitch of stays 9"  
 Pitch across wide water spaces 1/4 Working pressures by rules 182 lb Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 2 - 7" x 7 1/8 Length as per rule 27 Distance apart 7 1/2 Number and pitch of Stays in each 2 - 7 1/4  
 Working pressure by rules 197 lb Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately  
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes  
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



## DONKEY BOILER—

No. Description  
 Made at By whom made When made Where fixed  
 Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves  
 No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can enter the donkey boiler  
 Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength  
 Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets  
 Lap of plating Per centage of strength of joint Rivets Thickness of shell crown plates Radius of do. No. of stays to do.  
 Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint  
 Thickness of furnace crown plates Stayed by Working pressure of shell by rules  
 Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— 2 each of top & bottom end and main bearing bolts & nuts; set of coupling bolts & nuts; complete set of pump & check valves; 6 piston bolts & nuts; 6 stuffing box studs & nuts; safety & escape valve springs; cylinder cover studs & nuts; condenser tubes & ferrules; stud iron; bolts & nuts assorted; iron of various sizes &c.

The foregoing is a correct description,

Manufacturer.

PER PRO. SCHOFIELD, HAGERUP AND DOUGHTY, LTD.

Dates During progress of work in shops— 1899:— Oct. 20. Nov. 27. 1900:— June 14. July 10. Aug. 21. Sept. 1, 14. Oct. 3, 12, 17. Nov. 1. 1901:— May 29. June 1, 10, 14, 23. Total No. of visits 4. 14. Is the approved plan of main boiler forwarded herewith No

General Remarks (State quality of workmanship, opinions as to class, &c.)

The engines of this vessel have been constructed under Special Survey, the material workmanship are of good quality. In my opinion they are eligible to be classed in the Register Book.

The Boiler has been constructed under Special Survey to the approved plans and the Secretary's letter (E) of 13/5/98. The steel has been tested as required by the Rules. The workmanship is good.

The Engines and Boiler have been satisfactorily fitted on board and tried under steam. They are in good and safe working condition and eligible, in my opinion, to be classed in the Register Book with record of LMC 6.00 (in red)

It is submitted that this vessel is eligible for THE RECORD LMC 6.00

29.6.00

The amount of Entry Fee. £ 6 : - : When applied for. 1/6/00  
 Special £ 3 : - : 1/6/00  
 Donkey Boiler Fee £ : :  
 Travelling Expenses (if any) £ : :  
 When received. 23.0.0.1.27

Committee's Minute

Assigned

TUES. 3 JUL 1900

MACHINERY CERTIFICATE WRITTEN.

+ 2 LMC 6.00

GMS357/124

