

## REPORT ON MACHINERY.

No. 14223

Port of Greenock

Received at London Office

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No. in Survey held at GreenockDate, first Survey 23<sup>rd</sup> May 1904 Last Survey 23<sup>rd</sup> March 1905

Reg. Book.

(Number of Visits 47)on the Screw Steamer "River Clyde"Tons <sup>Gross</sup>  
<sub>Net</sub>When built 1905Master Built at Port Glasgow. By whom built Russell & Co.Engines made at Greenock By whom made J. G. Kinnaird & Co. when made 1905Boilers made at Greenock By whom made Scott's S.S. Ry. Co. Ltd. when made 1905

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

## ENGINES, &amp;c.—Description of Engines

No. of Cylinders

No. of Cranks

Dia. of Cylinders

Length of Stroke

Revs. per minute

Dia. of Screw shaft

as per rule  
as fittedMaterial of  
screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the after end of the liner made water tight

in the propeller boss

If the liner is in more than one length are the joints burned

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two

Is the shaft lapped or protected between the liners

Length of stern bush

Dia. of shaft  
as per rule  
as fittedDia. of Crank shaft journals  
as per rule  
as fitted

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

Dia. of screw

Pitch of screw

No. of blades

State whether moveable

Total surface

pumps

Diameter

ditto

Stroke

Can one be overhauled while the other is at work

pumps

Diameter

ditto

Stroke

Can one be overhauled while the other is at work

Engines

Sizes of Pumps

No. and size of Suctions connected to both Bilge and Donkey pumps

Room

In Holds, &amp;c.

Sections

sizes

Connected to condenser, or to circulating pump

Is a separate donkey suction fitted in Engine room &amp; size

Large suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the discharge pipes above or below the deep water line

Are fitted with a discharge valve always accessible on the plating of the vessel

Are the blow off cocks fitted with a spigot and brass covering plate

Are carried through the bunkers

How are they protected

Are cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight

Is it fitted with a watertight door

worked from

## BOILERS, &amp;c.—

(Letter for record S)Total Heating Surface of Boilers 53-88 sq. ft. Is forced draft fitted no.No. and Description of Boilers Two Cylindrical Single EndedWorking Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs.Date of test 16/1/05 Can each boiler be worked separately YesArea of fire grate in each boiler 45 sq. ft. No. and Description of safety valves toeach boiler 2: Direct Spring Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers 16' 6" Length 11' 0" Material of shell plates SteelThickness 1 1/8" Range of tensile strength 28-32 tonsAre they welded or flanged no.Descrip. of riveting: cir. seams Lap Double long. seams D. B. StrapsDiameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 3/8"4-906" Lap of plates or width of butt straps 20 1/4"

Per centages of strength of longitudinal joint

rivets 85-6  
plate 86Working pressure of shell by rules 179 lbs.Size of manhole in shell 16" x 12"Size of compensating ring Flanged RingNo. and Description of Furnaces in each boiler 4: MonsoonsMaterial Steel Outside diameter 43 1/4"Length of plain part 4' 3" Thickness of plates 1 1/2"crown 1 1/2"  
bottom 1 1/2"Description of longitudinal joint WeldedNo. of strengthening rings noneWorking pressure of furnace by the rules 188 lbs.Combustion chamber plates: Material Steel Thickness: Sides 1 3/32" Back 1 9/32" Top 1 9/32" Bottom 1 1/8"Pitch of stays to ditto: Sides 7 1/2" x 8 1/2" Back 8 1/4" x 8 1/2" Top 7 1/2" x 8 1/2"If stays are fitted with nuts or riveted heads into inside of Working pressure by rules 182 lbs.Material of stays Steel Diameter at smallest part 1 1/2" x 1 5/8"Area supported by each stay 64 sq. in. Working pressure by rules 182 lbs. End plates in steam space:Material Steel Thickness 1 3/32" Pitch of stays 18" x 14"How are stays secured 2' into washers Working pressure by rules 185 lbs. Material of stays SteelDiameter at smallest part 2 1/8" Area supported by each stay 306 sq. in.Working pressure by rules 185 lbs. Material of Front plates at bottom SteelThickness 3/4" Material of Lower back plate SteelThickness 1 1/8" Greatest pitch of stays 10 1/2" Working pressure of plate by rules 195 lbs.Diameter of tubes 3 1/4" Pitch of tubes 4 3/8" x 4 1/2"Material of tube plates Steel Thickness: Front 3/4" with 5/8" Back 3/4" Mean pitch of stays 9.8"Pitch across wide water spaces 14 1/2"Working pressures by rules 191 lbs. 204 lbs. Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 8 1/2" x 1 1/2"Length as per rule 30 5/8" Distance apart 8 1/2" Number and pitch of Stays in each 3: 4 1/2"Working pressure by rules 180 lbs. Superheater or Steam chest; none connected to boiler

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

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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

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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.  
Plates  
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:—

The foregoing is a correct description,  
SCOTT'S SHIPBUILDING COMPANY LIMITED  
Manufacturer.

Assistant Secretary.  
Dates of Survey { During progress of work in shops - - - 1904. May 23.30. June 3.14.23.27. July 26.29. Aug 3.8.11.16. 18.22.29. Sep 5.13.  
while building { During erection on board vessel - - - 23.29. Oct 5.10.14.18.20.31. Nov 2.8.11.16.21.28. Dec 2.7.9.12.14.16.19.21.23.26.28.30. 1905. Jan 16. Feb 2.  
Total No. of visits March 23 #7. Is the approved plan of main boiler forwarded herewith Yes.  
" " " donkey " " "

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

The main Boilers of this vessel have been built under special survey and the materials and workmanship are good.

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee. £ : : When applied for,  
Special .. .. £ : : 19  
Donkey Boiler Fee .. .. £ : :  
Travelling Expenses (if any) £ : : 19  
When received,

Committee's Minute Glasgow 3- APR 1905

Assigned See accompanying Grt. reports

Wm R. Austin  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.