

## REPORT ON MACHINERY.

No. 16169

## REPORT ON MACHINERY.

No. 30995.

Received at London Office WED. JAN. 17. 1911

15/11/12 Port of Glasgow

Survey held at Glasgow Date, First Survey 7<sup>th</sup> Nov/10 Last Survey 27<sup>th</sup> Decr 1911

g. Book T. S. S. "Huronii" (Number of Visits)

By whom built Russell & Co Tons Gross 8901 Net 5638

Built at Port Glasgow By whom made David Rowan & Co when made 1911

By whom made do when made 1911

Registered Horse Power Owners New Zealand Shipping Co. Ltd. Port belonging to Plymouth

Is Refrigerating Machinery fitted for cargo purposes *Yes* Is Electric Light fitted *Yes*

GINES, &c.—Description of Engines *Twin Screw Quadruple* No. of Cylinders *8* No. of Cranks *8*

a. of Cylinders *24 1/2 - 35 - 50 - 72* Length of Stroke *51"* Revs. per minute *114* Dia. of Screw shaft *14 1/2"* Material of *steel*

the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes* Is the after end of the liner made water tight

the propeller boss *Yes* If the liner is in more than one length are the joints burned *Yes* 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 *Yes* If two

ers are fitted, is the shaft lapped or protected between the liners *Yes* Length of stern bush *5' 3"*

a. of Tunnel shaft *13.55* as per rule *13.57* Dia. of Crank shaft journals *14.52* as per rule *14.21* Dia. of Crank pin *14 3/4"* Size of Crank webs *9 3/4"* Dia. of thrust shaft under

bars *15"* Dia. of screw *17-3* Pitch of Screw *22-0* No. of Blades *4* State whether moveable *Yes* Total surface *97* each

of Feed pumps *2* Diameter of ditto *4 1/2"* Stroke *27* Can one be overhauled while the other is at work *Yes* *By 12-10 1/2 - 21 Automatic*

of Bilge pumps *2* Diameter of ditto *4 1/2"* Stroke *27* Can one be overhauled while the other is at work *Yes*

of Donkey Engines *3* Sizes of Pumps *12 1/2 - 15, 8 - 8 - 15, 10 1/2 - 8 - 21* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *4 - 3 1/2* In Holds, &c. *2 - 3 1/2 each hold*

of Bilge Injections *2* sizes *8"* Connected to condenser, or to circulating pump *Yes* Is a separate Donkey Suction fitted in Engine room & size *Yes - 3 1/2*

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

all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Both*

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 *Above*

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*

hat pipes are carried through the bunkers *For Suctions* How are they protected *Wood covering*

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *Yes*

des of examination of completion of fitting of Sea Connections *Yes* of Stern Tube *Yes* Screw shaft and Propeller *Ex. R. Rpt.*

the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Top grating*

ILERS, &c.—(Letter for record (X)) Manufacturers of Steel *David Colville Sons Ltd.*

tail Heating Surface of Boilers *16500* Is Forced Draft fitted *Yes* No. and Description of Boilers *Five Single Ended*

orking Pressure *220 lb* Tested by hydraulic pressure to *440 lb* Date of test *30-8-11* No. of Certificate *11172*

n each boiler be worked separately *Yes* Area of fire grate in each boiler *77* # No. and Description of Safety Valves to

h boiler *Double spring* Area of each valve *11* # Pressure to which they are adjusted *225 lb* Are they fitted with easing gear *Yes*

allest distance between boilers or uptakes and bunkers or woodwork *16"* Mean dia. of boilers *16-9"* Length *12-2"* Material of shell plates *Steel*

ickness *1 1/4"* Range of tensile strength *30-4-34* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *D. R. L. & T. R. L.*

ig. seams *D. B. S.* Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *10 1/2"* Lap of plates or width of butt straps *2-1 1/4"*

er centages of strength of longitudinal joint *101.7* Working pressure of shell by rules *260 lb* Size of manhole in shell *16" x 12"*

ze of compensating ring *Hanged* No. and Description of Furnaces in each boiler *4 Morrison* Material *Steel* Outside diameter *3-10 3/8"*

ength of plain part *top* Thickness of plates *bottom* *1 1/4"* Description of longitudinal joint *weld* No. of strengthening rings

orking pressure of furnace by the rules *245* Combustion chamber plates: Material *Steel* Thickness: Sides *1 1/8"* Back *3 1/2"* Top *1 1/8"* Bottom *1 3/4"*

ch of stays to ditto: Sides *8 1/2"* Back *7 1/2"* Top *8 1/2"* If stays are fitted with nuts or riveted heads *Yes* Working pressure by rules *233 lb*

aterial of stays *Iron* Diameter at smallest part *2-07* Area supported by each stay *66* Working pressure by rules *250* End plates in steam space:

aterial *Steel* Thickness *1 1/4"* Pitch of stays *18 1/4" x 16"* How are stays secured *D. R. L.* Working pressure by rules *250* Material of stays *Steel*

iameter at smallest part *7-26* Area supported by each stay *280* Working pressure by rules *240* Material of Front plates at bottom *Steel*

ickness *3 1/2"* Material of Lower back plate *Steel* Thickness *1 1/8"* Greatest pitch of stays *14"* Working pressure of plate by rules *226*

iameter of tubes *2 1/2 - 2 3/8"* Pitch of tubes *3 3/8" x 3 1/2"* Material of tube plates *Steel* Thickness: Front *3 1/32"* Back *3 1/4"* Mean pitch of stays *8 1/32" x 9 1/8"*

ch across wide water spaces *13 1/2"* Working pressures by rules *220 lb* Girders to Chamber tops: Material *Steel* Depth and

ickness of girder at centre *8 1/4" x 1 1/2" x 2* Length as per rule *31 7/8"* Distance apart *8"* Number and pitch of stays in each *3 at 8 1/4"*

orking pressure by rules *230* Superheater or Steam chest; how connected to boiler *None* Can the superheater be shut off and the boiler worked

120 *separately* Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

es Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

orking pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. Description *None*  
 Made at By whom made When made Where fixed  
 Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety  
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment  
 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  
 Working pressure of shell by rules 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  
 Working pressure of furnace by rules Thickness of furnace crown plates Radius of do. Stayed by  
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— Two top end bolts, 2 bottom end bolts, set of coupling bolts, 2 main bearing bolts—all with nuts, feed & bilge pump valves, assorted iron & bolts etc. Also 1 piece crank shaft, 1 thrust shaft, 1 screw shaft, propeller boss & two blades, top & bottom end bushes, 25 boiler tubes etc.

The foregoing is a correct description,

for David Rowan & Co. Manufacturer.

Dates of Survey while building  
 During progress of work in shops -- 1910. Nov. 7. 1911. Feb. 14. 15. 28. Mar. 9. 14. 29. April 10. 13. 27. May 8. 11. 15. 29.  
 During erection on board vessel -- 23. 24. June 1. 8. 13. 23. July 3. 25. Aug. 16. 17. 22. 23. 30. Sep. 1. 5. 12. 21. 27. Oct. 3. 5. 6. 9. 13. 18.  
 Total No. of visits 48. Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 3/7/11 Slides 3/7/11 Covers 23/6/11 Pistons 23/6/11 Rods 1/6/11  
 Connecting rods 1/6/11 Crank shaft 3/7/11 Thrust shaft 21/9/11 Tunnel shafts 21/9/11 Screw shaft 3/7/11 Propeller 3/7/11  
 Stern tube 3/7/11 Steam pipes tested 21/11/11 Engine and boiler seatings 12/12/11 Engines holding down bolts 24/12/11  
 Completion of pumping arrangements 26/12/11 Boilers fixed 9/11/11 Engines tried under steam 27/12/11  
 Main boiler safety valves adjusted 21/12/11 Thickness of adjusting washers F.S. 3/8, 7/16, F.P. 3/4, 3/4, P.A. 3/4, 3/4, C.H. 7/16  
 Material of Crank shaft steel Identification Mark on Do. H.G.S. Material of Thrust shaft steel Identification Mark on Do. H.G.S.  
 Material of Tunnel shafts steel Identification Marks on Do. H.G.S. Material of Screw shafts steel Identification Marks on Do. H.G.S.  
 Material of Steam Pipes Iron Test pressure 660 lbs.

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

The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in our opinion eligible to have notation L.M.C. 12.11 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 12.11.

F.D.

J.W.D. 18/1/12 G.R.R.

The amount of Entry Fee £ 3 : : : When applied for.  
 Special £ 3.11.0 £ 73.11 : : : 22/12/11.  
 Donkey Boiler Fee £ : : : When received.  
 Travelling Expenses (if any) £ : : : 26/12/11.

Committee's Minute GLASGOW 16 JAN 1912  
 Assigned + L.M.C. 12.11

H. Gardner-Smith & W. Gordon Munc  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Lloyd's Register Foundation

Glasgow

Certificate (if required) to be sent to