

## REPORT ON MACHINERY.

No. 32646.

Received at London Office WED. MAY 14 1913

Date of writing Report

19

When handed in at Local Office

28/4/1913 Port of Glasgow

No. in Survey held at

Dumbarton

Date, First Survey

10-6-12

Last Survey

23.4.1913

Reg. Book.

22 Supp on the Triple Turbine &amp; Wahine

(Number of Visits 53.)

Gross 4436.

Net 1798.

When built 1913

Master Samuel Gint Built at Dumbarton

By whom built Wm Denny &amp; Bros

Engines made at Dumbarton

By whom made Denny &amp; Co

when made 1913

Boilers made at do

By whom made do

when made 1913

Registered Horse Power

Owners Union S S Co of New Zealand Ltd

Port belonging to Dunedin

Nom. Horse Power as per Section 28 1694

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

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

Turbine 1HP 2LP 2 Astern

No. of Cylinders 3

No. of Cranks —

Dia. of Rotors HP 39" LP 54" Ast 45" Length of Stroke —

Revs. per minute 520

Dia. of Screw shaft

as per rule 7.97

Material of steel

Is 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

in the propeller boss yes 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

liners are fitted, is the shaft lapped or protected between the liners —

Length of stern bush 4'-0"

Dia. of Tunnel shaft

as per rule 7.5

Dia. of Rotor

as per rule —

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

collars —

Dia. of screw 6'-0"

Pitch of Screw 5'-6"

No. of Blades 3

State whether moveable no

Total surface 18-6 ft

No. of Feed pumps 2 Weirs Diameter of ditto 19'-13" Stroke 24"

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 duplex Diameter of ditto 9'-10" Stroke 10"

Can one be overhauled while the other is at work yes

No. of Donkey Engines 4

Sizes of Pumps

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

In Engine Room 2 of 3"

Stokehold 2 of 3" and 2 of 5"

In Holds, &amp;c. Forehold 2 of 3" aft Hold 2 of 3" Forward tunnel

2 of 3" aft tunnel 1 of 3" - 1 of 2" to boss framing each side

No. of Bilge Injections 2 sizes 12"

Connected to condenser, or to circulating pump

as a separate Donkey Suction fitted in Engine room &amp; size yes 3 1/2

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 yes

Are all connections with the sea direct on the skin of the ship yes

Are they Valves or Cocks both

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 below

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 none

How are they protected —

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

Dates of examination of completion of fitting of Sea Connections 22.11.12

of Stern Tube 22.11.12

Screw shaft and Propeller 22.11.12

Is the Screw Shaft after Tunnel watertight yes

Is it fitted with a watertight door yes

worked from upper deck.

BOILERS, &amp;c.—(Letter for record)

Manufacturers of Steel

B Colville &amp; Sons

Stewarts &amp; Lloyds Ltd

(Closed stokehold)

Total Heating Surface of Boilers 25480 ft

Is Forced Draft fitted yes

No. and Description of Boilers 8 Water Tube (Babcock &amp; Wilcox Type)

Working Pressure 200 lbs

Tested by hydraulic pressure to 400 lbs

Date of test 13.11.12 - 4.12.12

No. of Certificate 11873 - 11899

Can each boiler be worked separately yes

Area of fire grate in each boiler 104 ft + 108 ft

No. and Description of Safety Valves to

each boiler 2 direct spring

Area of each valve 9.62"

Pressure to which they are adjusted 200 lbs

Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0"

Mean dia. of boilers 3'-6"

Length 14'-3" - 4'-11"

Material of shell plates steel

Thickness 17/32 + 1" Range of tensile strength 24/28 tons

Are the shell plates welded or flanged no

Descrip. of riveting: cir. seams DR lap

long. seams Half checker + butt Diameter of rivet holes in long. seams 27/32"

Pitch of rivets 3 1/32"

Lap of plates or width of butt straps 4"

Per centages of strength of longitudinal joint

rivets 79

Working pressure of shell by rules 206

Size of manhole in shell 20 x 13 1/4

Size of compensating ring 29 x 20 x 7/8 flanged

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

Thickness of plates

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space:

Material steel Thickness 13/16"

Pitch of stays 0

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes 1 1/8"

Pitch of tubes

Material of tube plates steel

Thickness: Front 17/32"

Back 17/32"

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

Superheater or Steam chest; how 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

8210-9601M

Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one will be sent.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description				
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 casing 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 Plates
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:— 24 coupling bolts. Set of feed & bilge pump valves. Propeller shaft. 3 propellers. 6 half rotor shaft brasses. Air pump head valve, bucket, foot valve, piston & pump rods. Circulating pump impeller & shaft crosshead and crank pin bushes. 4 safety valve springs. 1 uptake & 1 downtake for boilers. Assorted iron, bolts & nuts.

The foregoing is a correct description,

*Decimus L.* Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1913. June 10. 17. July 3. 20. Aug. 2. 7. 14. 21. 23. 28. Sept. 5. 10. 16. 18. 24. 27. Oct. 2. 7. 11. 14. 28. 29. Nov. 5. 8. 13. 15. 22. 27. Dec. 2. 3. 4. 5. 17. 24.  
During erection on board vessel -- 1913. Jan. 14. 16. 17. 21. 24. 28. 31. Feb. 7. 14. 21. 26. Mar. 6. 14. 28. Apr. 8. 9. 11. 23.  
Total No. of visits 63.

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts— Rotor Casings Cylinders 5. 12. 12 Slides — Covers — Pistons — Rods —  
Connecting rods — Rotor Crank shafts 5. 9. 12 6 Thrust shaft — Tunnel shafts 2. 8. 12 6 Screw shafts 2. 3. 10. 12 Propellers 8. 11. 12  
Stern tubes 14. 10. 12 Steam pipes tested 29. 10. 12 6 Engine and boiler seatings 2. 2. 11. 12 Engines holding down bolts 6. 3. 13  
Completion of pumping arrangements 14. 3. 13 Boilers fixed 21. 1. 13 Engines tried under steam 9. 4. 13  
Main boiler safety valves adjusted 8. 4. 13 Thickness of adjusting washers FPB PV  $\frac{25}{64}$  SV  $\frac{23}{64}$  FSB PV  $\frac{11}{32}$  SV  $\frac{21}{64}$  ho 2 PB PV  $\frac{3}{8}$  SV  $\frac{23}{64}$  ho 2 SB PV  $\frac{7}{16}$  SV  $\frac{13}{32}$   
Material of Rotor Crank shafts *steel* Identification Mark on Do. 74Y HC Material of Thrust shaft — Identification Mark on Do. —  
Material of Tunnel shafts *steel* Identification Marks on Do. 74Y HC Material of Screw shafts *steel* Identification Marks on Do. 74Y HC  
Material of Steam Pipes *Iron* Test pressure 600 lbs

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

The machinery of this vessel has been constructed under special survey in accordance with the rules and approved plans inclosed, and has been seen working satisfactorily under steam - materials and workmanship are good.

The bunkers have been constructed suitable for carrying oil fuel if required in the future, but no oil pumps or pipe connections have been fitted.

This machinery is eligible in my opinion to be classed +LMC 4-13. Water Tube Boilers - Subject to annual survey.

It is submitted that this vessel is eligible for THE RECORD.  $\pm$  L.M.C. 4. 13. F.D. ELEC. LIGHT. 3 STEAM TURBINES.

WATER TUBE BOILERS, SUBJECT TO ANNUAL SURVEY.

The amount of Entry Fee .. £ 3 : 0 : When applied for, 9/5/13.  
Special .. £ 87 : 4 :  
Donkey Boiler Fee .. £ : :  
Travelling Expenses (if any) £ : : When received, 12/5/13.

Committee's Minute GLASGOW

Assigned +LMC 4, 13 Watertube boilers -

subject to annual survey

WRITTEN.



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