

## REPORT ON MACHINERY

No. 30930  
THU. DEC. 28, 1911

Received at London Office

Date of writing Report

19

When handed in at Local Office

23.12.11 Port of Glasgow

No. in Survey held at  
Reg. Book.

Glasgow

Date, First Survey 8-12-1910. Last Survey 20-12-1911

28 Sep on the

T. S. S. "Maunganui"

(Number of Visits 76.)

Tons Gross 7527

Net 7041

Master

Built at Glasgow

By whom built

Fairfield S & L<sup>d</sup>

When built 1911

Engines made at

Glasgow

By whom made

Fairfield S & L<sup>d</sup>

when made 1911

Boilers made at

do

By whom made

do

when made 1911

Registered Horse Power

Owners Union S. S. Co. of New Zealand Port belonging to Dunedin

Nom. Horse Power as per Section 28

1304

Is Refrigerating Machinery fitted for cargo purposes

Yes

Is Electric Light fitted

Yes

ENGINES, &amp;c.—Description of Engines Twin Screw Quadruple Expansion No. of Cylinders 8 No. of Cranks 8

Dia. of Cylinders 24 1/2 - 35 1/2 - 50 1/2 - 73 Length of Stroke 45 Revs. per minute 100 Dia. of Screw shaft as per rule 14.07 Material of Iron

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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5-6"

Dia. of Tunnel shaft as per rule 13.03 Dia. of Crank shaft journals as per rule 13.678 Dia. of Crank pin 15 Size of Crank webs 9 3/4 Dia. of thrust shaft under

collars 14 1/2 Dia. of screw 16-3 Pitch of Screw 18-9 No. of Blades 3 State whether moveable Yes Total surface 68 # each.

No. of Feed pumps 3 Diameter of ditto 10 Stroke 26 Can one be overhauled while the other is at work Yes

No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Donkey Engines 2 Ballast 2 Sanitary Ballast 10-10-10 Sanitary 6-6-6 General service 10-6-6 2 1/2 x 10 Bilge 7 1/2 dia x 9 Stroke No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 - 3 1/2" 3 at 3 1/2" In Holds, &amp;c. 2 - 3 1/2" each hold

Tunnel 3"

No. of Bilge Injections 2 sizes 13 Connected to condenser, or to circulating pump pump Is 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

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 Above

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 Ford. Suctions How are they protected Wood covering

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 7 of Stern Tube 7 Screw shaft and Propeller 11/11/11

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

BOILERS, &c.—(Letter for record (R)) Manufacturers of Steel David Colville & Sons L<sup>d</sup>

Total Heating Surface of Boilers 20400 Is Forced Draft fitted Yes No. and Description of Boilers 2 D.B. &amp; 2 S.B.

Working Pressure 220 lb Tested by hydraulic pressure to 440 lb Date of test DE 27/11, 7/12/11 No. of Certificate 11021, 11033

Can each boiler be worked separately Yes Area of fire grate in each boiler DE 172.5 S.B. 86.25 No. and Description of Safety Valves to

each boiler 2 D.B. 3 S.B. 2 Spring Area of each valve SE 7.67 Pressure to which they are adjusted 225 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 15 Mean dia. of boilers 17-0 Length SE 11-0 Material of shell plates steel

Thickness 1 3/4 Range of tensile strength 31635 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D n T. Lap.

long. seams D. B. S. Diameter of rivet holes in long. seams 1 3/4 Pitch of rivets 10 1/2 Lap of plates on width of butt straps 24 1/2

Per centages of strength of longitudinal joint rivets plate 83.3 Working pressure of shell by rules 243 Size of manhole in shell 17 x 12 1/2

Size of compensating ring Flanged No. and Description of Furnaces in each boiler SE 4. Inclusion Material steel Outside diameter 48 1/2

Length of plain part top bottom Thickness of plates crown 33 bottom 32 Description of longitudinal joint weld No. of strengthening rings

Working pressure of furnace by the rules 248 Combustion chamber plates: Material steel Thickness: Sides 2 1/32 Back 2 1/32 Top 2 1/32 Bottom 1

Pitch of stays to ditto: Sides 8 x 8 Back 8 x 8 Top 8 x 8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 233

Material of stays steel Diameter at smallest part 1.76 Area supported by each stay 64 Working pressure by rules 220 End plates in steam space:

Material steel Thickness 19/64 Pitch of stays 16 x 16 How are stays secured D. nuts Working pressure by rules 237 Material of stays steel

Diameter at smallest part 6.33 Area supported by each stay 256 Working pressure by rules 237 Material of Front plates at bottom steel

Thickness 3/16 Material of Lower back plates steel Thickness 3/4 Greatest pitch of stays 12 (S.E.) Working pressure of plate by rules 304

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 Material of tube plates steel Thickness: Front 27/32 Back 27/32 Mean pitch of stays 7 1/2

Pitch across wide water spaces 13 1/2 Working pressures by rules 260 lb Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8 1/2 x 3/4 x 2 Length as per rule 30 Distance apart 8 Number and pitch of stays in each 3 at 8

Working pressure by rules 220 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 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



VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *None* Description *None*

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fired \_\_\_\_\_

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 \_\_\_\_\_ 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:— *Two top end bolts, 2 bottom end bolts, 2 main bearing bolts, set of coupling bolts, feed & bridge pump valves, assorted iron, bolts etc., also propeller shaft complete, 2 propellers, lengths of crank shaft, crank pin bushes, set crosshead bushes, valve spindle each size, piston rod & guide shoe, etc., etc.*

The foregoing is a correct description,

Manufacturer.

THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO., LIMITED.

Dates of Survey while building

During progress of work in shops	1910. Dec. 8. 16. 22. 23. 27. 1911. Jan. 20. 24. 27. 28. 31. Feb. 1. 2. 10. 18. 20. 21. March 2. 13. 17. 20. 22. 27. 31.
During erection on board vessel	1911. April. 3. 6. 18. 24. 28. May 9. 18. 22. 26. 29. 31. June 2. 9. 13. 16. 20. 27. 29. July 7. 26. Aug. 2. 3. 9. 14. 18. 24.
Total No. of visits	Sept. 1. 6. 12. 18. 27. Oct. 4. 10. 11. 16. 17. 23. Nov. 7. 9. 11. 13. 28. 29. Dec. 2. 4. 7. 8. 12. 13. 14. 16. 19. 20.

Is the approved plan of main boiler forwarded herewith *Yes - 2.*

Dates of Examination of principal parts—Cylinders *9/5/11* Slides *9/5/11* Covers *9/5/11* Pistons *9/5/11* Rods *9/5/11*

Connecting rods *9/5/11* Crank shaft *22/5/11* Thrust shaft *22/5/11* Tunnel shafts *22/5/11* Screw shaft *29/5/11* Propeller *22/5/11*

Stern tube *2/6/11* Steam pipes tested *22/3/11, 16/10/11* Engine and boiler seatings *6/9/11* Engines holding down bolts *12/9/11*

Completion of pumping arrangements *23/10/11* Boilers fixed *23/10/11* Engines tried under steam *29/11/11*

Main boiler safety valves adjusted *23/10/11* Thickness of adjusting washers *S.D.E. 19 19 3, 64, 64, 8, P.D.E. 13 19 13, 32, 64, 32, S.S.E. 5 5, 16, 16, P.B.E. 3 3, 8*

Material of Crank shaft *slut* Identification Mark on Do. *H.S.S.* Material of Thrust shaft *slut* Identification Mark on Do. *H.S.S.*

Material of Tunnel shafts *slut* Identification Marks on Do. *H.S.S.* Material of Screw shafts *Iron* Identification Marks on Do. *H.S.S.*

Material of Steam Pipes *Wrought 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 + LMC 12.11 in the Register Book.

N.B. After the trial several furnaces were found somewhat distorted. Two furnaces in each of the Double Ended Boilers & one in the Stant. Single Ended Boiler have been renewed, some of the other furnaces have been faired in place & the boilers put in good order.

It is submitted that this vessel is eligible for THE RECORD + LMC. 12.11.

The amount of Entry Fee *£ 3* : : When applied for, *8/12/11*

Special *£ 7.7.12-0* *77. 12* : : When received, *12/12/11*

Donkey Boiler Fee *£* : :

Travelling Expenses (if any) *£* : :

Committee's Minute GLASGOW 27 DEC 1911

Assigned *-1- LMC 12.11*

F.D.

*Hardner-Smith John H Heck.*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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