

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 & B L^{td}

When built 1911

Engines made at

Glasgow

By whom made

Fairfield C^o L^{td}

when made 1911

Boilers made at

do

By whom made

do

when made 1911

Registered Horse Power

Owners

Union S. S. L^{td} 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, &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 screw shaft

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

as fitted 13.7/8

Dia. of Crank shaft journals

as per rule 13.678

as fitted 14 1/2

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

Sizes of Pumps

Ballast 10-10 1/2 10-6 1/2 10

Sanitary 6-6 1/2 6-6 1/2

General service 10-6 1/2 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, &c.

2 - 3 1/2" each hold

No. of Bilge Injections

2 sizes 13

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room

& 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

Food 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 gratings

BOILERS, &c.—(Letter for record (7))

Manufacturers of Steel

David Colville & Sons L^{td}

Total Heating Surface of Boilers

20400

Is Forced Draft fitted

Yes

No. and Description of Boilers

2 D.B. & 2 S.B.

Working Pressure

220 lb

Tested by hydraulic pressure to

440 lb

Date of test

DE 27/11, 27/11

No. of Certificate

11021, 11033

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

SE 172.5, SE 86.25

No. and Description of Safety Valves to

each boiler

2 D.B. 3, 5 B. 2 Spring

Area of each valve

SE 7.67, SE 21.0

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

slut

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 or width of butt straps

24 1/2"

Per centages of strength of longitudinal joint

ribs 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. Inversion

Material

slut

Outside diameter

48 1/2"

Length of plain part

top

Thickness of plates

bottom

Description of longitudinal joint

weld

No. of strengthening rings

—

Working pressure of furnace by the rules

248

Combustion chamber plates: Material

slut

Thickness: Sides

2 1/32"

Back

2 1/32"

Top 2 1/32"

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

slut

Diameter at smallest part

1.76"

Area supported by each stay

64"

Working pressure by rules

220

End plates in steam space:

Material

slut

Material

slut

Thickness

19/64"

Pitch of stays

16 x 16"

How are stays secured

D. nuts

Working pressure by rules

227

Material of stays

slut

Diameter at smallest part

6.33"

Area supported by each stay

256"

Working pressure by rules

257

Material of Front plates at bottom

slut

Thickness

3/4"

Greatest pitch of stays

12"

Thickness

3/4"

Material of Lower back plates

slut

Thickness

3/4"

Working pressure of plate by rules

304

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4"

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4"

Material of tube plates

slut

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

slut

Depth and

thickness of girder at centre

8 1/2 x 3/4 x 2"

Length as per rule

30"

Working pressure by rules

220

Superheater or Steam chest; how connected to boiler

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *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 & ledge 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 side, piston rod & guide shoe, etc., etc.*

The foregoing is a correct description,

THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO., LIMITED.

Manufacturer.

Ally. Cleghorn

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 6. 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. 30. 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 18, 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 jacked in place & the boilers put in good order.

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

Glasgow

Certificate (if required) to be sent to the Surveyors or below the space for Committee's Minute.

The amount of Entry Fee	£ 3	When applied for,	8/12/11
Special	£ 7.7.12	When received,	12/12/11
Donkey Boiler Fee	£		
Traveling Expenses (if any)	£		

F.D. *J.W.D.* 29/12/11 *J.R.S.*

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

Committee's Minute **GLASGOW 27 DEC 1911**

Assigned *-1- LMC 12.11*

MACHINERY CERTIFICATE WRITTEN

