

REPORT ON MACHINERY.

No. 16520

Received at London Office

WED. AUG. 20. 1913

Date of writing Report

19

When handed in at Local Office

15/8/1913. Port of Greenock

No. in Survey held at
Reg. Book.

Greenock

Date, First Survey 17th April 1912 Last Survey 9th Aug. 1913.

on the SCREW STEAMER "SEIYO MARU."

(Number of Visits 82)

Gross 6492

Tons Net 4132.

When built 1913

Master

Built at Port Glasgow.

By whom built Russell & Co.

Engines made at

Greenock

By whom made

Rankin & Blackmore.

when made

1913.

Boilers made at

Greenock.

By whom made

Rankin & Blackmore.

when made

1913.

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

544.

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yes.

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders Three

No. of Cranks Three

Dia. of Cylinders

26"-42"-71"

Length of Stroke

48"

Revs. per minute

40

Dia. of Screw shaft

as per rule 14.38

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 the length 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 5'0"

Dia. of Tunnel shaft

as per rule 12.913

Dia. of Crank shaft journals

as per rule 13.62

Dia. of Crank pin

13.5"

Size of Crank webs

19"x8.5"

Dia. of thrust shaft under

collars

13.5"

Dia. of screw

17.3"

Pitch of Screw

16'0"

No. of Blades

4

State whether moveable

Yes.

Total surface

96 Sq. ft.

No. of Feed pumps

2

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

Yes.

Weis Feed Pumps

No. of Bilge pumps

2

Diameter of ditto

4.5"

Stroke

24"

Can one be overhauled while the other is at work

Yes.

3 9.5"x7"x21"

No. of Donkey Engines

Three.

Sizes of Pumps

9"x12"x12.5"x8.5"x4"x4"x6"

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

In Engine Room

Four: 3.5" dia.

In Holds, &c.

No. 1 HOLD. Two 3.5" dia. No. 2 HOLD. Two 3.5" dia.

No. of Bilge Injections

1

size 6.5"

Connected to condenser, or to circulating pump

C. P.

Is a separate Donkey Suction fitted in Engine room & size

Yes: 3.5"

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

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

18/6/13

of Stern Tube

18/6/13

Screw shaft and Propeller

18/6/13.

Is the Screw Shaft Tunnel watertight

Yes.

Is it fitted with a watertight door

Yes.

worked from upper platform.

OILERS, &c.—(Letter for record

S.)

Manufacturers of Steel

W. Beardmore 1674 L.

Total Heating Surface of Boilers

6264

Is Forced Draft fitted

Yes.

No. and Description of Boilers

3: Cylindrical: Multi: Single.

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

18/6/13

No. of Certificate

1125.

Can each boiler be worked separately

Yes.

Area of fire grate in each boiler

75 sq. ft.

No. and Description of Safety Valves to

each boiler

2: Direct Spring

Area of each valve

14.19"

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork

about 21"

Mean dia. of boilers

16'6"

Length

11'6"

Material of shell plates

Steel.

Thickness

1.76"

Range of tensile strength

28 to 32 tons

Are the shell plates welded or flanged

No.

Descrip. of riveting: cir. seams

Lap Double.

long. seams

Auto straps

Diameter of rivet holes in long. seams

1.3"

Pitch of rivets

9.16"

Pitch of rivets

4.32"

Lap of plates or width of butt straps

20.3"

Per centages of strength of longitudinal joint

rivets 86.8

Working pressure of shell by rules

181 lbs

Size of manhole in shell

16"x12"

END

Size of compensating ring

30.4"x26.4"x1.76"

No. and Description of Furnaces in each boiler

4: Daington

Material

Steel.

Outside diameter

3'8.4"

Length of plain part

top 4.63

Thickness of plates

crown 17

Description of longitudinal joint

Weld.

No. of strengthening rings

None.

Working pressure of furnace by the rules

185 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

5.8"

Back

5.8"

Top

5.8"

Bottom

13.6"

Pitch of stays to ditto: Sides

8"x9.76"

Back

7.4"x9.8"

Top

7.2"x9.2"

If stays are fitted with nuts or riveted heads

Nuts.

Working pressure by rules

183 lbs.

Material of stays

Steel.

Diameter at smallest part

1.2" full

Area supported by each stay

42"

Working pressure by rules

218 lbs

End plates in steam space:

Material

Steel

Thickness

1.36"

Pitch of stays

20.8"x16.2"

How are stays secured

By Nuts.

Working pressure by rules

180 lbs

Material of stays

Steel.

Diameter at smallest part

2.76" full

Area supported by each stay

340"

Working pressure by rules

193 lbs

Material of Front plates at bottom

Steel.

Thickness

7.8"

Material of Lower back plate

Steel

Thickness

13.6"

Greatest pitch of stays

12.2"

Working pressure of plate by rules

190 lbs.

Diameter of tubes

2.2"

Pitch of tubes

3.32"x3.32"

Material of tube plates

Steel

Thickness: Front

3.4"x2.4"

Back

3.4"

Mean pitch of stays

9.3"

Pitch across wide water spaces

13.4"

Working pressures by rules

214 lbs

237 lbs

Girders to Chamber tops: Material

Steel.

Depth and

thickness of girder at centre

9.2"x1.5"

Working pressure by rules

184 lbs

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

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes.

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes.

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes.

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. <i>none</i>	Description			When made	Where fixed
Made at	By whom made	Date of test	No. of Certificate	Fire grate area	Description of Safety
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:— *1/2 Crank shaft, 1st Piston Ring for HP & LP Pistons, 1st Piston 10 Junk Ring Bolts, 3 Slide valve spindles, 1 Pair Eccentric Rods, 1 Pair Eccentric Straps, 1 Pair Crosshead Brasses, 1 1st Crank pin Bushes, 57 Condenser tubes + 182 ferrules, 1 Air Pump rod, 1 Air circulating pump rod, 1 1st Feed pump valve Reats, 1 1st Bilge pump valve Reats, 1 Safety valve Reat, 3 Safety valve springs, 12 Tube stoppers, 1 Tail end shaft, 2 Propeller Blades, 3 Cyl. escape valves spring, 12 Coupling Bolts, 2 Crank pin Bolts, 2 Crankhead Bolts, 2 main Bearing Bolts, 6 Holding down Bolts, 1 1st escape valve, 1 1st air pump valve, 1 1st circulating pump valve, 1 1st shell valve, 12 Boiler tubes, 12 Cylinder cover studs, Bolts, Iron etc.*

The foregoing is a correct description,

Arthur Macnamara

Manufacturer.

Dates of Survey while building	During progress of work in shops --	During erection on board vessel ---	Total No. of visits
1912. Apr. 15. 17. 24. May. 15. 17. 21. 24. 25. Aug. 14. 20. 26. Sep. 4. 10. 16. 19. 26. Oct. 1. 3. 10. 11. 16. 23. 29. Nov. 5. 8. 14. 18. 27. Dec. 4. 18. 20. 25. 30. 1913. Jan. 13. 16. 21. 24. 29. 30. Feb. 5. 10. 14. 18. 25. Mar. 4. 7. 18. 20. 25. 26. Apr. 1. 10. 14. 21. 23. 30. May. 1. 6. 8. 14. 16. 17. 22. 23. 27. 28. 31. June 3. 5. 7. 17. 18. 19. 20. 21. 24. 26. 27. July 2. 3. 5. 23. 24. 28. 30. Aug. 1. 8. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31.	88		

Is the approved plan of main boiler forwarded herewith

Yes

Dates of Examination of principal parts	Cylinders	Slides	Covers	Pistons	Rods
9/8/13	10/9/13	9/8/13	5/6/13	2/13	
Connecting rods	2/13	Crank shaft	5/6/13	Tunnel shafts	17/5/13
Stern tube	17/5/13	Steam pipes tested	30/4/13	Engines holding down bolts	30/7/13
Completion of pumping arrangements	8/8/13	Boilers fixed	8/8/13	Engines tried under steam	9/8/13
Main boiler safety valves adjusted	8/8/13	Thickness of adjusting washers	P.B. P/4.6.13.2.6. Q.B. P/7.5.13.2.6. S.B. P/7.6.13.2.6.		
Material of Crank shaft	Steel	Identification Mark on Do.	2724	Material of Thrust shaft	Steel
Material of Tunnel shafts	Steel	Identification Marks on Do.	1211, 1212	Material of Screw shafts	Steel
Material of Steam Pipes	Lap welded iron	Test pressure	1740 lbs		

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

The Engines and Boilers of this vessel were built under special survey and the materials and workmanship are good. After completion, they were examined while running full power trials and found to work well.

The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of L.M.C. 8.13. marked in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8.13.

F.D. 5th 21.8.13

The amount of Entry Fee	£ 3 : .	When applied for.
Special	£ 47 : 4	15/8/13
Donkey Boiler Fee	£ :	When received.
Travelling Expenses (if any)	£ :	22/8/13

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

Committee's Minute GLASGOW 19 AUG. 1913

Assigned + L.M.C. 8.13

MACHINERY CERTIFICATE WRITTEN

Greenock

HC. 18.8.13

Date of writing Report

No. in Survey held Reg. Book.

on the SC.

Master

Engines made at

Boilers made at

Registered Horse Power

MULTITUBULAR

(Letter for record)

Boilers 3 Cylinders

No. of Certificate 11

safety valves to each

Are they fitted with

Smallest distance bet

Material of shell plates

Descrip. of riveting

Lap of plates or wide

ules 180 lbs

boiler 3: Deigh

Description of longitud

plates: Material

Top 4x10 1/2 If stay

smallest part 1 1/2

Pitch of stays 21x1

Area supported by

Lower back plate

Pitch of tubes 3 3/4 x

water spaces 13

girder at centre 10

Working pressure by

separately

holes Pitch of

If stiffened with rings

Working pressure of

Dates of Survey while building

GENERAL R

makra

Survey Fee

Travelling Exp

Committee's

Assigned