

REPORT ON MACHINERY.

No. 16374

WED. JAN. -8. 1913

Date of writing Report

19

When handed in at Local Office

2/1/ 1913. Port of Greenock

No. in Survey held at
Reg. Book.

Greenock

Date, First Survey

19th April 1912

Last Survey

28th Dec. 1912

(Number of Visits 54)

on the STEAMER "PENANG MARU."

Tons { Gross 4966.
Net 3145.

Master

Built at Port Glasgow

By whom built

Russell & Co.

When built 1912.

Engines made at

Greenock

By whom made

Rankin & Blackmore

when made

1912.

Boilers made at

Greenock

By whom made

Rankin & Blackmore

when made

1912.

Registered Horse Power

Owners Kippin Yusen Kaishiki Kaisha

Port belonging to

Tokio

Nom. Horse Power as per Section 28

488.

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" - 70"

Length of Stroke

48"

Revs. per minute

66

Dia. of Screw shaft

as per rule 14.6"
as fitted 14.4"

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 one length

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

60"

Dia. of Tunnel shaft

as per rule 12.9"
as fitted 13"

Dia. of Crank shaft journals

as per rule 13.6"
as fitted 13.5"

Dia. of Crank pin

13.5"

Size of Crank webs

19" x 8.5"

Dia. of thrust shaft under

collars

13.5"

Dia. of screw

18" 0"

Pitch of Screw

17.6"

No. of Blades

4

State whether moveable

No.

Total surface

100 sq. ft.

No. of Feed pumps

1

Diameter of ditto

4.4"

Stroke

24"

Can one be overhauled while the other is at work

Yes.

WEIR'S FEED PUMPS.

No. of Bilge pumps

2

Diameter of ditto

4.4"

Stroke

24"

Can one be overhauled while the other is at work

Yes.

No. of Donkey Engines

Two

Sizes of Pumps

9" x 12" x 12"

8" x 5" x 8"

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. 2-3.5" dia.

No. 2 HOLD. 2-3.5" dia.

TUNNEL WELL. 1-2.5" 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

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

None.

How are they protected

Yes.

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

18/11/12

of Stern Tube

18/11/12

Screw shaft and Propeller

18/11/12.

Is the Screw Shaft Tunnel watertight

Yes.

Is it fitted with a watertight door

Yes.

worked from upper platform.

BOILERS, &c.—(Letter for record S.)

Manufacturers of Steel Ship Coy of Scotland & Lanarkshire Ship Coy.

Total Heating Surface of Boilers

4348 sq. ft.

Is Forced Draft fitted

Yes.

No. and Description of Boilers 3: Cylindrical: Single

Working Pressure

180 lb.

Tested by hydraulic pressure to

360 lb.

Date of test

14/11/12

No. of Certificate

1085.

Can each boiler be worked separately

Yes.

Area of fire grate in each boiler

59 sq. ft.

No. and Description of Safety Valves to

each boiler 2: Direct Spring Loaded

Area of each valve

11.04 sq. in.

Pressure to which they are adjusted

185 lb.

Are they fitted with easing gear

Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork

About 4 feet.

Mean dia. of boilers

15' 0"

Length

11' 6"

Material of shell plates

Steel.

Thickness

1.76"

Range of tensile strength

29 to 32 tons

Are the shell plates welded or flanged

No.

Descrip. of riveting: cir. seams

Lap double.

long. seams

Butt straps

Diameter of rivet holes in long. seams

1.52"

Pitch of rivets

9.5"

4.578 in. lap of plates or

width of butt straps

1.62"

Per centages of strength of longitudinal joint

rivets 88.9%

plate 86%

Working pressure of shell by rules

180 lb.

Size of manhole in shell

16" x 12"

Size of compensating ring

Plate flanged

No. and Description of Furnaces in each boiler

3: Doughton's

Material

Steel

Outside diameter

44.5"

Length of plain part

top 4.64'

bottom 4.64'

Thickness of plates

crown 9.6"

bottom 9.6"

Description of longitudinal joint

Weld.

No. of strengthening rings

None.

Working pressure of furnace by the rules

186 lb.

Combustion chamber plates: Material

Steel

Thickness: Sides

4.5"

Back

5"

Top

6.4"

Bottom

3.4"

Pitch of stays to ditto: Sides

8.5" x 9.5"

Back

8.5" x 8.5"

Top

8.5" x 9.5"

If stays are fitted with nuts or riveted heads

None.

Working pressure by rules

184 lb.

Material of stays

Steel.

Diameter at smallest part

1.5"

Area supported by each stay

72 sq. in.

Working pressure by rules

222 lb.

End plates in steam space:

Material

Steel.

Thickness

1.76"

Pitch of stays

21" x 15.5"

How are stays secured

None.

Working pressure by rules

180 lb.

Material of stays

Steel.

Diameter at smallest part

2.4"

Area supported by each stay

325 sq. in.

Working pressure by rules

189 lb.

Material of Front plates at bottom

Steel.

Thickness

1.76"

Material of Lower back plate

Steel

Thickness

1.76"

Greatest pitch of stays

13.5"

Working pressure of plate by rules

184 lb.

Diameter of tubes

3"

Pitch of tubes

4.52" x 4.52"

Material of tube plates

Steel

Thickness: Front

1.6" with 1/2"

Back

4"

Mean pitch of stays

8.31"

Pitch across wide water spaces

14"

Working pressures by rules

204 lb. 227 lb.

Girders to Chamber tops: Material

Steel.

Depth and

thickness of girder at centre

10" x 13.5"

Length as per rule

34.6"

Distance apart

9.4"

Working pressure by rules

182 lb.

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

