

REPORT ON MACHINERY.

No. 3619

Port of

Received at London Office

SAT. 19 MAY 1906

No. in Survey held at

Genoa

Date, first Survey

April 10th

Last Survey

April 16 1906

g. Book.

46 on the

Screw Steamer "Cera"

(Number of Visits 8)

Master

F. Molinari

Built at

Spezia

By whom built

Cantiere Navale di Muggiano

Gross 4295.11

Net 2726.10

When built 1901

Engines made at

West Hartlepool

By whom made

Thos Richardson & Sons

when made

1901

Wheels made at

do

By whom made

do

when made

1901

Registered Horse Power

356

Owners

L. Capucio & Co

Port belonging to

Genoa

nom. Horse Power as per Section 28

356

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

ENGINES, &c.—Description of Engines

Triple Compound

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

24 3/8, 40, 66"

Length of Stroke

48"

Revs. per minute

67

Dia. of Screw shaft

as per rule 13 1/2"
as fitted 14 1/2"

Material of screw shaft

Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

no

Is the after end of the liner made water tight

the propeller boss

no

If the liner is in more than one length are the joints burned

yes

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

no

If two

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

Lapped with canvas &c. at ends of liner

Length of stern bush

4-6"

Dia. of Tunnel shaft

as per rule 11 1/2"
as fitted 12 1/2"

Dia. of Crank shaft journals

as per rule 4 1/2"
as fitted 4 3/8"

Dia. of Crank pin

14"

Size of Crank webs

19 x 8 1/2"

Dia. of thrust shaft under

rollers

4 to 13 3/8"

Dia. of screw

16-6"

Pitch of Screw

14-9"

No. of Blades

4

State whether moveable

no

Total surface

95 sq ft

No. of Feed pumps

2

Diameter of ditto

8 1/2"

Stroke

28"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

3 1/2"

Stroke

28"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

2

Sizes of Pumps

7" x 4 1/2" x 6 duplex
7" x 8 1/2" x 10

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

In Engine Room how 4-3" (originally 2)

In Holds, &c. 2-3" in each hold except in the after

hold where there is one 3", and in the after well where there is one 2 1/2"

No. of Bilge Injections

one size

Connected to condenser, or to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room & size

yes 4"

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

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

those to the fore holds

How are they protected

By wooden casings.

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

25/4/06

of Stern Tube

25/4/06

Screw shaft and Propeller

25/4/06

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from C.R. Upper platform

OILERS, &c.—(Letter for record S)

Manufacturers of Steel

Leeds Forge & Maudslayi Iron works

Total Heating Surface of Boilers

4704 sq ft

Is Forced Draft fitted

yes

No. and Description of Boilers

2 Primary Multitubular type

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

15.6.1900

No. of Certificate

Italian Register certificate

Can each boiler be worked separately

yes

Area of fire grate in each boiler

68 sq ft

No. and Description of Safety Valves to

each boiler

2 Spring

Area of each valve

11.04 sq in

Pressure to which they are adjusted

180 lbs

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

18"

Mean dia. of boilers

14-9"

Length

11-6"

Material of shell plates

steel

Thickness

1/32"

Range of tensile strength

28-32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

double

long. seams

per pitch

Diameter of rivet holes in long. seams

1 1/8"

Pitch of rivets

8 1/2 x 4 1/2"

Lap of plates or width of butt straps

19"

Per centages of strength of longitudinal joint

rivets 86.00
plate 85.65

Working pressure of shell by rules

186.5

Size of manhole in shell

16 1/2" x 13"

Size of compensating ring

30 x 28 x 1 1/2"

No. and Description of Furnaces in each boiler

3 Morrison's duplex

Material

steel

Outside diameter 49 1/2"

Length of plain part

top -
bottom -

Thickness of plates

top 1/16"
bottom 1/16"

Description of longitudinal joint

welded

No. of strengthening rings

none

Working pressure of furnace by the rules

171

Combustion chamber plates: Material

steel

Thickness: Sides

19"

Back

19"

Top

19"

Bottom

1"

Pitch of stays to ditto: Sides

8 1/2 x 4 1/2"

Back

8 1/2 x 4 1/2"

Top

8 x 8"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

184

Material of stays

steel

Diameter at smallest part

1 3/8"

Area supported by each stay

65.25
64.00
67.40

Working pressure by rules

234.0

End plates in steam space:

Material

steel

Thickness

1/32"

Pitch of stays

14 1/2 x 4 1/2"

How are stays secured

nuts & washers

Working pressure by rules

240

Material of stays

steel

Diameter at smallest part

2 1/2 x 2 1/2"

Area supported by each stay

258 sq in

Working pressure by rules

190

Material of Front plates at bottom

steel

Thickness

1/8"

Material of Lower back plate

steel

Thickness

3/32"

Greatest pitch of stays

12 3/4 x 8"

Working pressure of plate by rules

273

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4 x 3 3/4"

Material of tube plates

steel

Thickness: Front

15"

Back

4"

Mean pitch of stays

4 1/2 x 4 1/2"</

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description *For donkey boiler see separate sheet.*

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 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

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 Stayed by

Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— *2 top & 2 bottom end bolts and nuts, 2 main bearing bolts, 1 set of coupling bolts, one set of feed and bilge pump rakes, a set of piston springs and rings for each cylinder, a quantity of assorted bolts & nuts & iron of various sizes. One propeller. One feed & one pump ram, one set of bottom end frames, one rabe spindle, one air & one circulating pump rod.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building: During progress of work in shops— *see Mr Shuttlepool surveyors report.*
 During erection on board vessel— *class withdrawn before engines began to be erected on board.*
 Total No. of visits *84 see Mr Shuttlepool report.*

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders *see Repair report from* Slides Covers Pistons Rods

Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Steam pipes tested *in 1901* Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material of Crank shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes *Copper* Test pressure *double working pressure*

General Remarks (State quality of workmanship, opinions as to class, &c. *This vessel's machinery was examined during survey, and the engines shipped to the builders. The class was however withdrawn before the engines were fitted on board. The whole of the engines have been opened up & examined, the boilers & their safety rakes opened & examined & the leading dimensions of engines & boilers measured & found to be as enumerated above. The pumping arrangements & sea cocks & connections examined & verified, & extra S.B. bilge ructions fitted at the fore end of E & B space & sundry pipes renewed where damaged by wear & tear. The vessel will therefore be eligible in my opinion to be classed as regards the machinery with the notation of + L.M.C. 5.06 when safety rakes have been adjusted under steam.*

Note. In view of the fact that these boilers & steam pipes were tested by the Regia Italiani at the commencement of their career to double the working pressure, and that that Society submits them to a hydraulic pressure of 1 1/2 times the working pressure biennially, also that they are found in good order now, it was not considered necessary to submit them to a hydraulic pressure at this survey.

The amount of Entry Fee...	£ - : -	When applied for, <i>May 17 1906</i>
Special <i>see for form key</i>	£ 28.4	When received, <i>30/5/06</i>
Donkey Boiler Fee	£ 12.12	
Travelling Expenses (if any)	£ - : 3	

Maurice Petton
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

JUES. 22 MAY 1906

FRI. 31 AUG 1906

Assigned *see minute on attached rpt.*



Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)