

# REPORT ON MACHINERY.

Port of Genoa

Received at London Office MUN. 25 JAN 1904

No. in Survey held at Genoa Date, first Survey March 3<sup>rd</sup> 03 Last Survey Jan 22 1904

Reg. Book. on the Screw Steamer "Ears" (Number of Visits 31)

Master Barachino Built at Sampierdarena By whom built Societa' Cooperativa di Produzione Tons } Gross 430  
Net 152

Engines made at Sampierdarena By whom made Soc Coop di Produzione when made 1904

Boilers made at SE By whom made SE when made 1904

Registered Horse Power 114 Owners Societa' Anonima per Ricupero - Sottomarini. Port belonging to Genoa

Nom. Horse Power as per Section 28 115 Is Refrigerating Machinery fitted no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 18.89-29.5-50" Length of Stroke 29.53 Revs. per minute 105 Dia. of Screw shaft 9.37 Material of steel  
as per rule 9.37 as fitted 9.2 screw shaft

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

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 - If two

liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 35.04

Dia. of Tunnel shaft 8.34 Dia. of Crank shaft journals 8.76 Dia. of Crank pin 8.3 Size of Crank webs 10x6 Dia. of thrust shaft under

collars 8.3 Dia. of screw 10-2 Pitch of screw 13-11 No. of blades 4 State whether moveable yes Total surface 22.6

No. of Feed pumps one Diameter of ditto 3" Stroke 14 3/4" Can one be overhauled while the other is at work yes } arranged so as to

No. of Bilge pumps one Diameter of ditto 3" Stroke 14 3/4" Can one be overhauled while the other is at work yes } be either feed or

No. of Donkey Engines one Sizes of Pumps 6 1/16 x 4 1/2 x 5 1/16 duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room one 2" also Ejector 2" In Holds, &c. fore hold one 2" after hold

one 2" No. of bilge injections one sizes 1 1/8" Connected to condenser, or to circulating pump yes Is a separate donkey suction fitted in Engine room & size yes 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 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 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from Upper deck

BOILERS, &c.— (Letter for record 5) Total Heating Surface of Boilers 1556 Is forced draft fitted no

No. and Description of Boilers 2 Horizontal Multitubular Working Pressure 150 Tested by hydraulic pressure to 300

Date of test 29.4.03 Can each boiler be worked separately yes Area of fire grate in each boiler 47.4 No. and Description of safety valves to

each boiler 2 Spring Area of each valve 5.95 Pressure to which they are adjusted 155 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 11-9 3/4" Length 10-1 1/2" Material of shell plates steel

Thickness 3/8" Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams double long. seams as plain

Diameter of rivet holes in long. seams 3/32" Pitch of rivets 3.3 x 6.6 Lap of plates or width of butt straps 10 1/4"

Special joint no taken as rivets 80 Working pressure of shell by rules 150 Size of manhole in shell 12 x 16"

Per centages of strength of longitudinal joint plate 80 Size of compensating ring 4 1/8 x 13" No. and Description of Furnaces in each boiler 2 Morrison's Material steel Outside diameter 47.24

Length of plain part top Thickness of plates bottom Description of longitudinal joint welded No. of strengthening rings -

Working pressure of furnace by the rules 159.75 Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 19/32"

Pitch of stays to ditto: Sides 7.08 x 7.87" Back 6.7 x 6.7" Top 7.87 x 7.28" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 148-175

Material of stays steel Diameter at smallest part 1.03 Area supported by each stay 82 Working pressure by rules 184-201 End plates in steam space:

Material steel Thickness 13/16" Pitch of stays 14.6 x 13.2 How are stays secured 225 lbs Working pressure by rules 192 Material of stays steel

Diameter at smallest part 2 1/8" Area supported by each stay 192.5 Working pressure by rules 165 Material of Front plates at bottom steel

Thickness 13/16" Material of Lower back plate steel Thickness 13/16" Greatest pitch of stays 13.2 x 7.5" Working pressure of plate by rules 196.5

Diameter of tubes 3" Pitch of tubes 4 1/16 x 4 1/16" Material of tube plates steel Thickness: Front 5/32" Back 25/32" Mean pitch of stays 8.11

Pitch across wide water spaces 13 5/32" Working pressures by rules 150 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 5.9 x 1.57" Length as per rule 23.62 Distance apart 4.28 Number and pitch of Stays in each 2 - 7.87

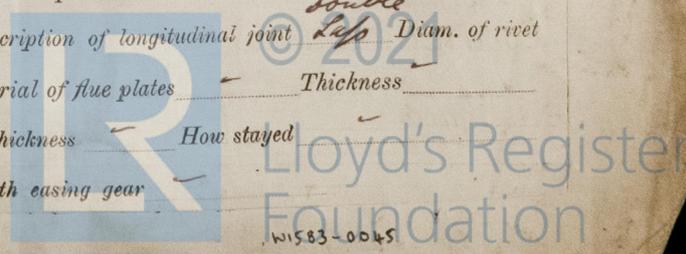
Working pressure by rules 199.5 Superheater on Steam chest; how connected to boiler Riveted Can the superheater be shut off and the boiler worked

separately no Diameter 31.5" Length 32" Thickness of shell plates 1/2" Material steel Description of longitudinal joint double Diam. of rivet

holes 86 Pitch of rivets 2.8 Working pressure of shell by rules 234 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 -



**DONKEY BOILER**— No. *106* Description *Horizontal Multitubular*  
 Made at *Ampicidone* By whom made *Societa Coop di Prodazione* When made *1904* Where fixed *on deck*  
 Working pressure *115* tested by hydraulic pressure to *230* No. of Certificate *56* Fire grate area *7.44* Description of safety valves *Spring*  
 No. of safety valves *2* Area of each *1.92* Pressure to which they are adjusted *115* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *50 1/2* Length *89.76* Material of shell plates *steel* Thickness *1/2* Range of tensile strength *29.32* Descrip. of riveting long. seams *Stitch Lap* Dia. of rivet holes *5/8* Whether punched or drilled *Yes* Pitch of rivets *2.53*  
 Lap of plating *4 1/2* Per centage of strength of joint Rivets *4544* Thickness of shell crown plates *6.9* Radius of do. *Flat* No. of Stays to do. *6*  
 Dia. of stays *1 1/4* Diameter of furnace Top *None* Bottom *None* Length of furnace *39.4* Thickness of furnace plates *1/2* Description of joint *Single Lap* Thickness of furnace crown plates *1/2* Stayed by *Screwed stays 5 1/2" apart* Working pressure of shell by rules *148 1/2*  
 Working pressure of furnace by rules *115* Diameter of uptake *✓* Thickness of uptake plates *-* Thickness of water tubes *-*

SPARE GEAR. State the articles supplied:— *2 Top + 2 bottom end bolts + nuts, 2 holding down bolts + nuts. One set of coupling bolts + nuts. One set of piston rings for H.P. cylinder. One set of feed + bilge pump valves. A quantity of assorted bolts + nuts, iron of various sizes.*

The foregoing is a correct description,

*J. E. Brown* Manufacturer.

Dates of Survey while building	During progress of work in shops—	<i>1903-March 3<sup>rd</sup>. April 2-23. May 22. June 10. July 1-7. 16. 23. 29. Aug 8-18-28</i>
	During erection on board vessel—	<i>1903-Aug 18-28. Sept-2-10-18-28. Oct-10. Nov-3-6-11-14-19-23. Dec-9-15-22-28. Jan 2-2</i>
	Total No. of	<i>31</i>

Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines + boilers have been examined during construction, and the materials + workmanship found to be good + in accordance with the plans as approved, and the requirements of the rules. The circulating pump is worked by an independent engine, + the feed + bilge pumps are made interchangeable. The main + donkey boilers tested by water pressure, and the main steam pipe also tested by water pressure to double the working pressure, + found tight + sound. The engines were seen running under steam, and the main + donkey safety valves adjusted to their respective working pressures. The donkey boiler is fixed temporarily in the ship, but can also be removed + placed on board of any ship which is in course of being sailed. The steam pipe connections to the auxiliary machinery are made removable. This vessel is to be used for Salvage purposes.*

*She is therefore eligible as regards the machinery to be classed under the notation of + LMC. 1.04 in the R. Pool.*  
*In addition to her ordinary engines she possesses a considerable amount of auxiliary engines for salvage purposes.—*

*Note. The donkey boiler which it was proposed to fit— as per Secretary's letter dated 6/10/03— E. in place of the original one as per Secretary's letter dated 30/6/03 has not been fitted. The original one is now fitted.*

*Secretary's letters. Dated 9.2.03 — 30.6.03 — 23.7.03 — 6.10.03. E.*

*Plans endorsed. Main Boiler. Donkey Boiler. Pumping plan. steel tests. Firing reports.*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 1.04 ELEC: LIGHT.

The amount of Entry Fee..	£ 2 : 0 :	When applied for,
Special .. .. .	£ 14 : 12 :	<i>Jan 22<sup>nd</sup> 1904</i>
Donkey Boiler Fee .. .. .	£ 2 : 2 :	When received,
Travelling Expenses (if any)	£ 1 : 0 :	<i>21.4.04</i>

*W. J. S. Morrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute

FRI. 29 JAN 1904

Assigned

*+ LMC 1.04*

MACHINERY CERTIFICATE WRITTEN



Lloyd's Register Foundation

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