

## REPORT ON MACHINERY.

No. 5648.

Port of

Genoa

Received at London Office

TUE. MAY 27. 1913

No. in Survey held at Cornigliano Genoa Date, first Survey Oct 20<sup>th</sup> 1911 Last Survey May 14<sup>th</sup> 1913  
Reg. Book on the Auxiliary Motor Schooner "Aquila" (Number of Visits 43) Tons { Gross 551.1  
Net 433.8  
Master G. Capellini Built at Cornigliano By whom built Cantieri Officine Saronis When built 1913  
Engines made at Cornigliano By whom made Cantieri Officine Saronis when made 1913  
Boilers made at - By whom made - when made -  
Registered Horse Power 300 Owners Frattelli Capellini di G. Port belonging to Genoa  
Nom. Horse Power as per Section 28 80 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Two stroke cycle Diesel motor No. of Cylinders 4 No. of Cranks 4  
Dia. of Cylinders 10 1/2" Length of Stroke 15 3/4" Revs. per minute 300 Dia. of Screw shaft 5 1/2" Material of screw shaft 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 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 - If two liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 3 1/2"  
Dia. of Tunnel shaft 4 9/16" Dia. of Crank shaft journals 6 7/16" Dia. of Crank pin 6 7/16" Size of Crank webs 9 1/2" x 3 1/2" Dia. of thrust shaft under collars 5 1/2" Dia. of screw 5 1/16" Pitch of Screw 4-0 25/32 No. of Blades 4 State whether moveable no Total surface 9.26  
No. of Feed pumps - Diameter of ditto - Stroke - Can one be overhauled while the other is at work -  
No. of Bilge pumps 2 Diameter of ditto 2 9/16" Stroke 2" Can one be overhauled while the other is at work yes  
No. of Donkey Engines one duplex Sizes of Pumps 1 1/2" x 1 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps -  
In Engine Room one 2" In Holds, &c. one compartment one 2" midship compartment  
No. of Bilge Injections none Connected to condenser, or to circulating pump - 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 -  
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 -  
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 Feb 22-1913 of Stern Tube 22/2/13 Screw shaft and Propeller 22/2/13  
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door - worked from -

BOILERS, &c.—(Letter for record -) Manufacturers of Steel

Total Heating Surface of Boilers - Is Forced Draft fitted - No. and Description of Boilers -  
Working Pressure - Tested by hydraulic pressure to - Date of test - No. of Certificate -  
Can each boiler be worked separately - Area of fire grate in each boiler - No. and Description of Safety Valves to each boiler - Area of each valve - Pressure to which they are adjusted - Are they fitted with easing gear -  
Smallest distance between boilers or uptakes and bunkers or woodwork - Mean dia. of boilers - Length - Material of shell plates -  
Thickness - Range of tensile strength - Are the shell plates welded or flanged - Descrip. of riveting: cir. seams -  
long. seams - Diameter of rivet holes in long. seams - Pitch of rivets - Lap of plates or width of butt straps -  
Per centages of strength of longitudinal joint - Working pressure of shell by rules - Size of manhole in shell -  
Size of compensating ring - No. and Description of Furnaces in each boiler - Material - Outside diameter -  
Length of plain part - Thickness of plates - Description of longitudinal joint - No. of strengthening rings -  
Working pressure of furnace by the rules - Combustion chamber plates: Material - Thickness: Sides - Back - Top - Bottom -  
Pitch of stays to ditto: Sides - Back - Top - If stays are fitted with nuts or riveted heads - Working pressure by rules -  
Material of stays - Diameter at smallest part - Area supported by each stay - Working pressure by rules - End plates in steam space: -  
Material - Thickness - Pitch of stays - How are stays secured - Working pressure by rules - Material of stays -  
Diameter at smallest part - Area supported by each stay - Working pressure by rules - Material of Front plates at bottom -  
Thickness - Material of Lower back plate - Thickness - Greatest pitch of stays - Working pressure of plate by rules -  
Diameter of tubes - Pitch of tubes - Material of tube plates - Thickness: Front - Back - Mean pitch of stays -  
Pitch across wide water spaces - Working pressures by rules - Girders to Chamber tops: Material - Depth and thickness of girder at centre - Length as per rule - Distance apart - Number and pitch of stays in each -  
Working pressure by rules - Superheater or Steam chest; how connected to boiler - 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 - Are they fitted with easing gear -

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Particulars taken from the Report to the  
VERTICAL DONKEY BOILER—  
No. 5556 Description Cochran's Patent  
Made at Amman By whom made Cochran & Co When made 1911 Where fixed In a local one-deck  
Working pressure 100 tested by hydraulic pressure to 200 Date of test 24/12/11 No. of Certificate 11358 Fire grate area 11 1/2 Description of Safety  
Valves 2 opening No. of Safety Valves 2 Area of each 3 1/2 Pressure to which they are adjusted 110 Date of adjustment 8/4/13  
If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler Dia. of donkey boiler 4-9 Length 9-6  
Material of shell plates steel Thickness 3/8 Range of tensile strength 25/2 Descrip. of riveting long. seams double riveted  
Dia. of rivet holes 2 1/2 Whether punched or drilled Yes Pitch of rivets 2-5-3 Lap of plating 3/8 Per centage of strength of joint Rivets 44-9  
Working pressure of shell by rules 100 Thickness of shell crown plates 9/16 Radius of do. 4-9 No. of stays to do. one Dia. of stays  
Diameter of furnace Top 24 Bottom Length of furnace 2-10 Thickness of furnace plates 1/2-5/8 Description of joint Hemispherical  
Working pressure of furnace by rules 125 Thickness of furnace crown plates 1/2 Stayed by Hemispherical  
Diameter of uptake 11 1/2 Thickness of uptake plates 1/2 Thickness of water tubes plates 5/8 Dates of survey 4/12/11 - 28/12/11 = 5

SPARE GEAR. State the articles supplied:—

See separate list.

The foregoing is a correct description,

Sgt. Ferdinand Probi. Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1911 Oct 20 - Dec 11-19 - 1912 Jan 2 - 14 - 25-30 - Feb 10 - 27 - March 15-19 - April 10-26 - May 10-22-31 - June 11-25  
During erection on board vessel - 1912 July 5-20 - Aug 25-30 - Oct 8 - Nov 2 - Dec 5 - 1913 Jan 9-21  
Total No. of visits 42  
Is the approved plan of main boiler forwarded herewith none

Dates of Examination of principal parts—Cylinders 4/2/13 Slides 4/2/13 Covers 4/2/13 Pistons 4/2/13 Rods 4/2/13  
Connecting rods 4/2/13 Crank shaft 2/1/12 Thrust shaft 2/1/12 Tunnel shafts 2/1/12 Screw shaft 2/1/12 Propeller 2/1/12  
Stern tube 2/1/12 Steam pipes tested 22/2/13 Engine and boiler seatings 9/1/13 Engines holding down bolts 22/2/13  
Completion of pumping arrangements 22/2/13 Boilers fixed Engines tried under steam 15/3/13 & 17/5/13  
Main boiler safety valves adjusted Thickness of adjusting washers  
Material of Crank shaft 42 Identification Mark on Do. 1339 Material of Thrust shaft 42 Identification Mark on Do. 1340  
Material of Tunnel shafts 42 Identification Marks on Do. 1341 Material of Screw shafts 42 Identification Marks on Do. 1342  
Material of Steam Pipes Copper Test pressure 100 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. This vessel's machinery has been examined during construction, and the materials, and workmanship are good, and in accordance with the rules' requirements, the approved plans, and Secretary's letters. All the principal parts subject to pressure have been tested hydraulically, and found tight & sound. On completion the motor was submitted to a working test of 1 1/2 hours in harbour, and of 3 1/2 hours at sea under loaded conditions. The speed of the ship was 8 knots, revolutions 260 to 280 at full power, and 80 at slow speed. It was also seen running ahead & astern at fast & slow speeds & was found as satisfactory one way as the other.

The vessel is therefore eligible in my opinion to be classed, as regards the machinery with the notation of +LMC 5.13, in the R. Book.

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 5.13.

Oil engines. 4 Cy. 10 7/16 - 15 3/4. 2 SC. SA  
D.B. 100th.

The amount of Entry Fee, £1-25-00.

Special £306-00.

Donkey Boiler Fee £

Travelling Expenses (if any) £39-00

Committee's Minute

Assigned

When applied for, May 24/13

When received, 5/6/13

When received, 5/6/13

When received, 5/6/13

When received, 5/6/13

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When received, 5/6/13

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

TUE. 19 OCT. 1915

FRI. 22 OCT. 1915

MAINTENANCE CERTIFICATE  
WRITTEN

Rpt. 9a.

S.S. Aquila

TUE. MAY. 27. 1913

Port of Genoa Continuation of Report No. 5648 dated May 24/13 on the

Diameter of cylinders	26 5/8	10 7/16
Number "	4	4
Stroke of piston	400	15 3/4
Compression pressure	34	48 1/4
Diameter of first scavenger pump	2 1/2	13 3/4
" " LP. compressor	1 1/4	6 3/4
" " Second scavenger pump	3 5/8	13 3/4
" " HP. compressor	5 8	2 5/8
Stroke of scavenger pumps & compressors	3 5/8	13 3/4
Diameter of connecting rod gudgeons	9 5/8	3 3/4
Diameter of fuel valve	2 1/4	3/8
" " 2 Air inlet valves	8 5/8	3 3/8
" " Lay shafts	4 1/2	1 7/8
" " Vertical shaft	5 0	1 3/8
" " 4 Fuel pumps	16	5 1/8
Stroke " " " "	14	5 1/8
Diameter of 2 oil pumps	5 0	1 3/8
Stroke " " " "	8 0	3 3/8
Diameter of 2 water circulating pumps	8 0	3 3/8
Stroke " " " "	8 0	3 3/8
Diameter of oil pumps for bottom ends and pump shafts	10	4 1/8
Stroke of same	16	5 1/8

Spare Gear

2 Main bearing brasses and 2 main bearing bolts & nuts. 2 Bottom end brasses and 2 bottom end bolts & nuts. 2 Top end brasses & 2 top end bolts & nuts. 12 Piston spring rings. One complete set of valves used for main cylinders: that is, 4 valves and eight springs. A set of all other springs used, including 4 for the scavengers. One set of 4 fuel pump valves. 2 Scavengers. One set of cylinder cover studs and nuts. A set of compressor piston rings: that is 2 L.P. & 6 H.P. A set of compressor valves, main and auxiliary. A set of piston rings for scavenger pumps. A set of scavenger pump valves. One set of intermediate shaft bolts & nuts. One half set of crank shaft bolts & nuts. 2 Levers for cam & air valves. 2 Rods for these levers. A set of water circulating pump valves. A set of lubricating pump valves. An assortment of flat, plate, round washers, small springs &c. Also a complete cylinder, piston, and piston rod.

R. P. P. P.  
24/5/13.

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