

## REPORT ON MACHINERY

Glas. No. 35650  
Blk. No. 4829  
JUL 10 1916

Received at London Office

Writing Report 3 October 1916 When handed in at Local Office 10 Port of Bilbao  
 Date, First Survey 6-2-15 Last Survey 15/11/15 1916  
 Book. Supp on the Single Screw Steamer "Mudela N<sup>o</sup> 2"  
 (Number of Visits 36)  
 Tons { Gross 1541 69  
 Net 930 79  
 When built 1916  
 By whom built Astilleros del Nervion  
 By whom made Ross & Duncan (N<sup>o</sup> 1006) when made 1916  
 By whom made Astilleros del Nervion when made 1916  
 Owners Soc. A<sup>a</sup> Fabrica San Francisco del Nervion Port belonging to Bilbao Spain  
 Horse Power as per Section 28 139 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no  
 Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Length of Stroke 33 Revs. per minute 80 Dia. of Screw shaft as per rule 9.45 Material of screw shaft as fitted 9.12 screw shaft  
 Is the after end of the liner made water tight  
 If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part in the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive  
 Length of stern bush 3'-2"  
 Dia. of Crank shaft journals as per rule 8.75 Dia. of Crank pin 8 7/8 Size of Crank webs 5 3/4 x 16 1/2 Dia. of thrust shaft under  
 Dia. of screw 11.9" Pitch of Screw 14'-0" No. of Blades 4 State whether moveable no Total surface 47 ft<sup>2</sup>  
 Can one be overhauled while the other is at work yes  
 Can one be overhauled while the other is at work yes  
 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Holds, &c. 1 of 2 1/4 Each Side fore Hold & after hold  
 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 2 1/2  
 Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible none  
 Are they Valves or Cocks valves & Cocks  
 Are the Discharge Pipes above or below the deep water line above  
 Are the Blow Off Cocks fitted with a spigot and brass covering plate yes  
 How are they protected  
 Is it fitted with a watertight door yes worked from Top Grating in 4 Spaces  
 Manufacturers of Steel James Dunlop & Coy  
 Is Forced Draft fitted no No. and Description of Boilers 2 S. Ended  
 Tested by hydraulic pressure to 360 Date of test 22.7.16 No. of Certificate 12  
 Area of fire grate in each boiler 39 1/2  
 Area of each valve 7 Pressure to which they are adjusted 180 Are they fitted with easing gear yes  
 Mean dia. of boilers 11.6 Length 10-6 Material of shell plates steel  
 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R lap  
 Diameter of rivet holes in long. seams 1 1/8 x 3/16 Pitch of rivets 8 1/2 x 8 1/2 Lap of plates or width of butt straps 17 1/2  
 Working pressure of shell by rules 180 Size of manhole in shell 12 x 16  
 No. and Description of Furnaces in each boiler 2 by lines Material steel Outside diameter 3'-10 1/4  
 Description of longitudinal joint welded No. of strengthening rings  
 Combustion chamber plates: Material steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 1 1/16  
 If stays are fitted with nuts or riveted heads nuts & washers Working pressure by rules 187  
 Working pressure by rules 195 End plates in steam space:  
 Working pressure by rules 190 Material of stays steel  
 Working pressure by rules 180 Material of Front plates at bottom steel  
 Working pressure of plate by rules 180  
 Material of tube plates steel Thickness: Front 27/32 Back 3/4 Mean pitch of stays 8 3/4  
 Working pressures by rules 244 Girders to Chamber tops: Material steel Depth and  
 Distance apart 8 1/2 Number and pitch of stays in each 3 at 7 3/4  
 Can the superheater be shut off and the boiler worked  
 Description of longitudinal joint Diam. of rivet  
 Material of flue plates Thickness  
 End plates: Thickness How stayed  
 Area of safety valves to superheater Are they fitted with easing gear



# VERTICAL DONKEY BOILER

Manufacturers of Steel See Glasgow Rpt

No. 7041 Description Vertical Cochran & Co  
 Made at Annan By whom made Cochran & Co When made 18916 Where fixed Stokehole  
 Working pressure 100 tested by hydraulic pressure to 200 Date of test 8-5-16 No. of Certificate 13412 Fire grate area 22 1/2 Description of St  
 Valves 2 duct Spring No. of Safety Valves 2 Area of each 5 Pressure to which they are adjusted 100 Date of adjustment 25/9/11  
 If fitted with easing gear 76 If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 6-6 Length 14-6  
 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 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:— Two bolts of main bearings, 2 for top, 2 for bottom ends, a set  
 coupling bolts, all wash nuts, valves for each pump, assorted bolts & nuts, iron and yellow  
 metal of various sizes

The foregoing is a correct description,

per W. Munro Manufacturer.

Dates of Survey while building  
 During progress of work in shops - 1915 Feb. 6, 12, 22, 25, Apr. 4, 12, Apr. 8, 13, 22, 30, May 11, 17, 24, 31, June 9, 14, 18, July 28, 12, Aug 12, 17, 23  
 During erection on board vessel - 1916 Apr. 14, 19, 25, June 28, July 12, 13, 17, 22  
 Total No. of visits August 14, 17, 21, 30, Sept 8, 9, 20, 23, 25, 26

Is the approved plan of main boiler forwarded herewith 7es  
 " " " donkey " " "  
 Dates of Examination of principal parts—Cylinders 4, 3, 15 Slides 3, 9, 15 Covers 12/2/15 Pistons 4/3, 13 1/2, 15 Rods 8/7/15  
 Connecting rods 3/9/15 Crank shaft 12/7/15 Thrust shaft 16/11/15 Tunnel shafts 16/11/15 Screw shaft 16/11/15 Propeller 29/9/15  
 Stern tube 16/11/15 Steam pipes tested 9/9/16 Engine and boiler seatings 30/8/16 Engines holding down bolts 12/13/16  
 Completion of pumping arrangements 26/9/16 Boilers fixed 30/8/16 Engines tried under steam 25/9/16  
 Main boiler safety valves adjusted 25/9/16 Thickness of adjusting washers PMB 5 10 7/8 SMB 5 9 1/2  
 Material of Crank shaft Steel Identification Mark on Do. G.D.R. 12/7/15 Material of Thrust shaft Iron Identification Mark on Do. G.D.R. 16/11/15  
 Material of Tunnel shafts Iron Identification Marks on Do. G.D.R. 16/11/15 Material of Screw shafts Iron Identification Marks on Do. G.D.R. 14/11/15  
 Material of Steam Pipes Copper Test pressure 360 lb

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery has been built under  
 special survey, in accordance with the rules, the material and workmanship are good  
 The machinery has been fitted on board vessel at Bilbao  
 The Boilers have been constructed under special survey and in accordance  
 with approved plan and the requirement of society, rules, the material and  
 workmanship are good.  
 The Boilers have been tested by hydraulic pressure with satisfactory results  
 The main and donkey boilers have been tested under steam pressure  
 and their safety valves adjusted under steam.  
 The main and auxiliary machinery have been tested under steam pressure  
 with satisfactory results

The vessel is eligible in our opinion to have the notation of LMC 9-16

Recorded in Register Book

The amount of Entry Fee £ 50 : When applied for, 3/10/16  
 Special .. £ 500 :  
 Donkey Boiler Fee .. £ :  
 Travelling Expenses (if any) £ 40 : When received, 5/10/16

Committee's Minute FRI. 27. OCT. 1916

Assigned

THE BROOD + LMC 9.16  
 John Pollock & J. de Inuitzabal  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

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 FRI JAN 19 1917  
 Lloyd's Register  
 Foundation