

# REPORT ON MACHINERY.

Received at London Office THU 18 JAN. 1917

Date of writing Report 14<sup>th</sup> January 1917 When handed in at Local Office 16/1/17 Port of West Hartlepool

No. in Survey held at W. Hartlepool Date, First Survey 3<sup>rd</sup> Feb/16 Last Survey 9<sup>th</sup> Jan/17

Reg. Book. on the Steel Screw Steamer "Mar Tirreno" (Number of Vents)

Master Built at By whom built Tons Gross Net When built

Engines made at W. Hartlepool By whom made Central Marine Engine Works when made 1917

Boilers made at W. Hartlepool By whom made Central Marine Engine Works when made 1917

Registered Horse Power Owners Port belonging to

Nom. Horse Power as per Section 28 268 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

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

Dia. of Cylinders 23", 36 1/2", 62" Length of Stroke 42" Revs. per minute Dia. of Screw shaft as per rule 12.75" Material of screw shaft as fitted 13"

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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern-bush 51"

Dia. of Tunnel shaft as per rule 11.41" Dia. of Crank shaft journals as per rule 11.98" Dia. of Crank pin 12 1/4" Size of Crank webs 7 3/8" x 17 1/4" Dia. of thrust shaft under

collars 12 1/4" Dia. of screw 15-6" Pitch of Screw 16-3" No. of Blades 4 State whether moveable No Total surface 78 sq. ft.

No. of Feed pumps two (2) Diameter of ditto 3" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Bilge pumps two (2) Diameter of ditto 3 1/2" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Donkey Engines two (2) Sizes of Pumps 4 pump, 6 stroke duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room In Holds, &c.

No. of Bilge Injections one size 6 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers How are they protected

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Dates of examination of completion of fitting of Sea Connections of Stern Tube Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel John Spencer Stons, Ltd.

Total Heating Surface of Boilers 4090 sq. ft. Is Forced Draft fitted No. No. and Description of Boilers two (2); Single-ended

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 12/12/16 No. of Certificate 3447

Can each boiler be worked separately Yes Area of fire grate in each boiler 52 sq. ft. No. and Description of Safety Valves to

each boiler two (2); Spring Area of each valve 8.295 sq. ins 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 15-0" Length 10-6" Material of shell plates Steel

Thickness 1/4" Range of tensile strength 27/30 tons Are the shell plates welded or flanged both Descrip. of riveting: cir. seams

long. seams 3/16, dble straps Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 19 1/4"

Per centages of strength of longitudinal joint rivets 91. plate 85.1 Working pressure of shell by rules 180.4 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 32 x 28 x 1 1/16 No. and Description of Furnaces in each boiler three (3), Morion's Material Steel Outside diameter 46 1/8"

Length of plain part top 8" bottom 8" Thickness of plates crown 9/16" bottom 9/16" Description of longitudinal joint welded No. of strengthening rings Superior

Working pressure of furnace by the rules 184 lbs. Combustion chamber plates: Material Steel Thickness: Sides 10/16" Back 10/16" Top 10/16" Bottom 13/16"

Pitch of stays to ditto: Sides 9" x 8 1/4" Buck 9 1/4" x 8" Top 8 3/4" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181 lbs.

Material of stays Steel Diameter at smallest part 1.508" Area supported by each stay 9" x 8 1/4" Working pressure by rules 192 lbs. End plates in steam space:

Material Steel Thickness 1 1/16" Pitch of stays 2 1/2" x 19 1/2" How are stays secured dble nuts Working pressure by rules 183 lbs. Material of stays Steel

Diameter at smallest part 3-1/16" Area supported by each stay 2 1/2" x 19 1/2" Working pressure by rules 194 lbs. Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 16 1/4" x 7 1/2" Working pressure of plate by rules 189 lbs.

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 12/16" Mean pitch of stays 9"

Pitch across wide water spaces 14 1/4" Working pressures by rules 189 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 1/2" x 1 1/4" Length as per rule 28 5/8" Distance apart 8 1/2" Number and pitch of stays in each two (2); 8 3/4"

Working pressure by rules 184 lbs. Superheater or Steam chest: how connected to boiler Can the superheater be shut off and the boiler worked

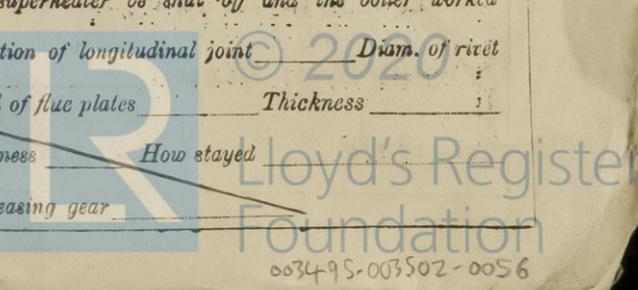
separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

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

Central No. 244



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 top and 2 bottom end bolts & nuts for connecting rod; 2 main bearing bolts & nuts; one set of coupling bolts & nuts; 2 feed pump valves; 2 bilge pump valves; one set of H.P. piston springs; one solid propeller; & assorted bolts & nuts & iron bars.

The foregoing is a correct description,  
FOR THE CENTRAL MARINE ENGINE WORKS,

John Williams

Manufacturer.

1916. Feb 3, 4, 10, 14, 17, 24, 25. Mar 1, 2, 14, 15. May 1. June 15, 16, 19, 20, 21, 22, 23, 28, 29. July 3, 4, 5, 17, 28, 31. Aug 1, 2, 11, 16, 18, 25, 28, 29, 30, 31. Sep 1, 11, 12, 20, 22, 27. Oct 2, 3, 4, 5, 6, 9, 11, 12, 13, 18, 19, 20, 23, 24, 25, 26, 27. Nov 1, 3, 6, 9, 10, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 30. Dec 1, 4, 5, 7, 8, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 1917. Jan 4, 5, 7. at West Hamlepool. Total No. of visits 95

Is the approved plan of main boiler forwarded herewith Yes

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

Dates of Examination of principal parts—Cylinders 22/12/16 Slides 4/1/17 Covers 8/1/17 Pistons 20/12/16 Rods 30/11/16  
Connecting rods 18/12/16 Crank shaft 20/12/16 Thrust shaft 20/12/16 Tunnel shafts 21/12/16 Screw shaft 3/7/16 Propeller 4/7/16  
Stern tube 4/7/16 Steam pipes tested 4/1/17 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 Scrap Iron Identification Mark on Do. 5844 Material of Thrust shaft Scrap Iron Identification Mark on Do. 5844

Material of Tunnel shafts Scrap Iron Identification Marks on Do. 5844 Material of Screw shafts Scrap Iron Identification Marks on Do. 5778

Material of Steam Pipes Steel lap welded Test pressure 600 lbs

Is an installation fitted for burning oil fuel? No. Is the flash point of the oil to be used over 150°F. Yes

Have the requirements of Section 49 of the Rules been complied with? Yes

Is this machinery duplicate of a previous case? Yes. If so, state name of vessel: S.S. "Mar de Norte" & "Mouro"

General Remarks (State quality of workmanship, opinions as to class, &c. Workmanship good)

Evaporator coils tested to 400 lbs. & body to 50 lbs. water pressure.

The Engines & Boilers have been constructed under special survey & in accordance with the requirements of the Society's Rules. The Machinery is intended for the new steamer "Mar Tirreno" & is being shipped to Bilbao to be fitted on board her.

Certificate (if required) to be sent to WEST HARTLEPOOL

The amount of Entry Fee ... £ 2 : - : - : When applied for, 17/1/17  
2/3<sup>rd</sup> Special "due Bilbao" ... £ 22 : 6 : - :  
1/3<sup>rd</sup> Donkey Boiler Fee ... £ 11 : 2 : - :  
Travelling Expenses (if any) £ ... : - : - : 12.2.1917 13/2/17

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

J.W. Williams

Committee's Minute

WED 30 MAY 1917

Assigned

See also of report attached



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