

REPORT ON MACHINERY.

No. 78934

Received at London Office 14/5/16

Date of writing Report 16/5/16 When handed in at Local Office 16/5/16 Port of London
 No. in Survey held at Ferrol & CADIZ Date, First Survey Feb. 16th 1915 Last Survey 2nd May 1916
 Reg. Book. on the Turin S.S. "San Carlos" (16.444). (Number of Visits 12.)

Gross 2487.92
 Tons Net

Master M. M. Munier Built at Cadiz By whom built S. E. de C. N. Cadiz When built 1915/17
 Engines made at Ferrol By whom made Sociedad Espanol de Const. Naval when made 1916
 Boilers made at Ico By whom made Ico when made 1916
 Registered Horse Power Owners Bu. Transatlantica Port belonging to Barcelona
 Shaft Horse Power at Full Power 1750 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

TURBINE ENGINES, &c.—Description of Engines Turin Scarv Gland No. of Turbines 4
 Diameter of Rotor Shaft Journals, H.P. 3 3/8" L.P. 4 1/32" Diameter of Pinion Shaft 3"
 Diameter of Journals 3" Distance between Centres of Bearings 12 3/4" Diameter of Pitch Circle 4' 55"
 Diameter of Wheel Shaft 7 3/32" Distance between Centres of Bearings 2' 5" Diameter of Pitch Circle of Wheel 73-3"
 Width of Face 19 27/32" Diameter of Thrust Shaft under Collars 7" Diameter of Tunnel Shaft as per rule 6 1/2"
 No. of Screw Shafts 2 Diameter of same as per rule 7 1/2" as fitted 7 1/2" Diameter of Propeller 7' 11" Pitch of Propeller 7' 3"
 2 LINERS - ONE FULL LENGTH OF STERN TUBE as fitted 7 1/2" Diameter of Rotor Drum, H.P. 12 5/8" L.P. 23 3/8" Astern 15 3/4"
 No. of Blades 4 State whether Moveable No. Total Surface 22 # Diameter of Rotor Drum, H.P. 12 5/8" L.P. 23 3/8" Astern 15 3/4"
 Thickness at Bottom of Groove, H.P. Solid L.P. Solid Astern Solid Revs. per Minute at Full Power, Turbine 3520 Propeller 220

PARTICULARS OF BLADING.

	H.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	$\frac{23}{32}$ "	2. 0 $\frac{17}{32}$ "	1	$\frac{23}{32}$ "	2 $\frac{1}{16}$ "	2	$\frac{23}{32}$ "	2. 2 $\frac{7}{16}$ "	1
2ND	$\frac{31}{32}$ "	2. 1 $\frac{3}{32}$ "	1	$\frac{7}{8}$ "	2 $\frac{1}{8}$ "	2	$\frac{31}{32}$ "	2. 2 $\frac{2}{32}$ "	1
3RD	$1\frac{1}{32}$ "	2. 1 $\frac{9}{16}$ "	1	$1\frac{1}{8}$ "	2 $1\frac{7}{32}$ "	2	$1\frac{1}{32}$ "	2. 2 $\frac{15}{16}$ "	1
4TH	$\frac{1}{2}$ "	1. 1 $\frac{5}{8}$ "	9	$1\frac{1}{32}$ "	2. 2 $\frac{1}{32}$ "	2	$\frac{13}{32}$ "	1. 4 $\frac{9}{16}$ "	3
5TH	$\frac{23}{32}$ "	1. 2 $\frac{1}{32}$ "	9	$1\frac{3}{4}$ "	2. 3 $\frac{3}{32}$ "	2	$\frac{13}{16}$ "	1. 5 $\frac{1}{32}$ "	3
6TH	$\frac{5}{8}$ "	1. 5 $\frac{1}{32}$ "	6	$2\frac{3}{16}$ "	2. 3 $\frac{31}{32}$ "	2	$1\frac{9}{32}$ "	1. 6 $\frac{29}{32}$ "	3
7TH	$2\frac{7}{32}$ "	1. 5 $\frac{13}{32}$ "	6	$2\frac{1}{16}$ "	2. 5"	2	$1\frac{9}{32}$ "	1. 6 $\frac{29}{32}$ "	3
8TH	$1\frac{1}{8}$ "	1. 5 $\frac{2}{32}$ "	6	$3\frac{3}{8}$ "	2. 6 $\frac{1}{16}$ "	4			

No. and size of Feed pumps Two 8" cyl 6" Pumps 21" Stroke
 No. and size of Bilge pumps 3 6" 6" 6" 1 GENERAL SERVICE PUMP 7 1/2" 4 1/2" 10"
 No. and size of Bilge suction in Engine Room 7 1/2" 3 at 2 1/2" 9 1/2" 6
 In Holds, &c. 12 at 2 1/2"

No. of Bilge Injections One sizes 6" Connected to condenser, or to circulating pump Pumps Is a separate Donkey Suction fitted in Engine Room & size Yes. 2 1/2"
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room 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
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from TOP PLATFORM ABOVE L. W. LINE.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Co.
 Total Heating Surface of Boilers 4480 Is Forced Draft fitted Yes No. and Description of Boilers Two single ended
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 24. 4. 16 No. of Certificate 1147
 Can each boiler be worked separately Yes Area of fire grate in each boiler 54 # No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 9. 6" Pressure to which they are adjusted 185 lbs. Are they fitted with casing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 11" 5" 19 1/2" Mean dia. of boilers 13' 9 3/8" Length 11' 6" Material of shell plates Steel
 Thickness 1 3/16" Range of tensile strength 29 3/4 - 33 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams S. R. Lap
 long. seams T. R. D. Butts Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 18 1/4"
 Per centages of strength of longitudinal joint rivets 90% plates 85 3/4% Working pressure of shell by rules 204 lbs. Size of manhole in shell 16" x 12"
 Size of compensating ring 9 1/4" x 1 3/16" No. and Description of Furnaces in each Boiler 3 Dighton Material Steel Outside diameter 42 1/2"
 Length of plain part top Thickness of plates crown 1 7/32" Description of longitudinal joint Weld No. of strengthening rings
 bottom Working pressure of furnace by the rules 194 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 2 1/32" Top 1/16" Bottom 13/16"
 Pitch of stays to ditto: Sides 9 1/2" x 9 Back 8 7/8" Top 9 1/2" x 9 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 188 lbs.
 Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 79 # Working pressure by rules 185 lbs. End plates in steam space
 Material Steel Thickness 1 1/4" Pitch of stays 19 x 19 How are stays secured S. nuts Working pressure by rules 182 lbs. Material of stays steel
 Diameter at smallest part 7.54" Area supported by each stay 361 # Working pressure by rules 225 lbs. Material of Front plates at bottom steel
 Thickness 2 9/32" Material of Lower back plate steel Thickness 2 9/32" Greatest pitch of stays 13 1/2" x 8 7/8" Working pressure of plate by rules 217 lbs.
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates steel Thickness: Front 2 9/32" Back 3/4" Mean pitch of stays 9 3/8"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 184 lbs. Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 10 x 1 1/4" Length as per rule 33.6" Distance apart 9" Number and pitch of stays in each Two at 9 1/2"
 Working pressure by rules 183 lbs. Steam dome: description of joint to shell % of strength of joint Diameter
 Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets
 Working pressure of shell by rules Crown plates: Thickness How stayed

[1m, 1.16.—Copyable Ink.]