

# REPORT ON MACHINERY.

No. 23304

Port of Sunderland

Received at London Office FRI. 14 JUN 1907

No. in Survey held at Sunderland Date, first Survey 10<sup>th</sup> October, 07 Last Survey 23<sup>rd</sup> May 1907  
 Reg. Book. on the Steel Sailing Steamer "Principe di Piemonte" (Number of Visits 64)  
 Master V. Domeniconi Built at Sunderland By whom built W. & A. Lamb & Sons Ltd Tons { Gross 5205.97  
 Engines made at Sunderland By whom made G. Clark & Co when made 1904 Net 3312.74  
 Boilers made at do By whom made do when made do  
 Registered Horse Power 807 Owners Capitolo Antonio & Co Anon. Nav. Port belonging to Genoa  
 Nom. Horse Power as per Section 28 807 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Vertical Triple Expansion fitted No. of Cylinders Six No. of Cranks Six  
 Dia. of Cylinders 24" 39" 64" Length of Stroke 45" Revs. per minute 90 Dia. of Screw shaft 13.45" 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 No 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 No If two liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 4'-7"  
 Dia. of Tunnel shaft 12.05" Dia. of Crank shaft journals 12.65" Dia. of Crank pin 13" Size of Crank webs 8" x 18" Dia. of thrust shaft under collars 13 1/4" Dia. of screw 16'-3" Pitch of Screw 18'-0" No. of Blades 3 State whether moveable Yes Total surface 65.3 sq ft  
 No. of Feed pumps Two duplex automatic Diameter of ditto 10" Cyls Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 on each side Diameter of ditto 4 1/4" Stroke 26" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps 11 x 12 x 11 BALLAST FEED 9 x 6 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Four 3 1/2" dia In Holds, &c. Two 3 1/2" dia in each + 1 in tunnel  
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pumps Yes Is a separate Donkey Suction fitted in Engine room & size Yes 5" dia  
 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 None  
 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 Steam pipes to forward boilers How are they protected Steel trunk way  
 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 20.2.07 of Stern Tube 25.2.07 Screw shaft and Propeller 11.3.07  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight doors Yes worked from Cop platform

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Spencer & Sons Ltd Newcastle Steel Works  
 Total Heating Surface of Boilers 12,280 Is Forced Draft fitted Yes No. and Description of Boilers Four single ended multitubular  
 Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 19.2.07 No. of Certificate 2578  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 7 1/2 No. and Description of Safety Valves to each boiler Two direct spring Area of each valve 12.56 sq in Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 6'-3 1/2" Length 2'-0" Material of shell plates Steel  
 Thickness 3/16" Range of tensile strength 28 1/2 to 32 TONS Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap butt long. seams 5/16" J.R. 5/16" Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/16" Lap of plates or width of butt straps 19 1/8"  
 Per centages of strength of longitudinal joint rivets 90.4 plate 85 Working pressure of shell by rules 186.5 Size of manhole in shell 16 x 13  
 Size of compensating ring 9' x 1 3/8" No. and Description of Furnaces in each boiler None built up Material Steel Outside diameter 50 1/2"  
 Length of plain part top — bottom — Thickness of plates crown 5" bottom 8" Description of longitudinal joint weld No. of strengthening rings —  
 Working pressure of furnace by the rules 199 Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 1/16" Top 13" Bottom 15"  
 Pitch of stays to ditto: Sides 8 3/4" x 10" Back 9 3/4" x 9 1/4" Top — If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185 lb  
 Material of stays Steel Diameter at smallest part 1 19/32" Area supported by each stay 114 Working pressure by rules 209 End plates in steam space: Material Steel Thickness 1 1/16" Pitch of stays 22 1/2" x 14" How are stays secured nuts Working pressure by rules 194 Material of stays Steel  
 Diameter at smallest part 3.037 Area supported by each stay 380 Working pressure by rules 189 Material of Front plates at bottom Steel  
 Thickness 3/4" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 15" to 16" Working pressure of plate by rules 188  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" 3 5/8" Material of tube plates Steel Thickness: Front 31" Back 32" Mean pitch of stays 9.4"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 185 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 13" 19 1/2" 1 1/2" 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

Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one will be so.

Lloyd's Register Foundation W893-0081

**VERTICAL DONKEY BOILER—** *Manufacturers of Steel*

No. \_\_\_\_\_ Description \_\_\_\_\_  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_  
 Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_  
 If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_  
 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 \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_  
 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 \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *4 steel propeller blades, 1 propeller shaft, 1 thread crank shaft, 3 sack bolts & nuts for top & bottom side & main bearings, 2 sets of coupling bolts, sets of valves for all pumps, top & bottom side bearings, piston springs, condenser & boiler tubes, bolts and sundries.*

The foregoing is a correct description,  
 FOR **GEORGE CLARK LIMITED.**  
*Gaylebank* Manufacturer. *of Engines & Main Boilers.*

Dates of Survey while building: During progress of work in shops— 1906: Oct 10, 12, 14, 26, 30, Nov 2, 7, 8, 9, 14, 15, 19, 21, 23, 26, 29, 30, Dec 3, 6, 10, 11, 13, 17, 19, 21, 28, — 07 Jan 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Feb 1, 4, 6, 8, 12, 18, 19, 20, 25, Mar 1, 4, 7, 11, 13, 18, 20, Apr 6, 12, 19, 23, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Jun 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Jul 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Aug 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Sep 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Oct 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Nov 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Dec 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 1907: Jan 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Feb 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Mar 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Apr 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Jun 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Jul 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Aug 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Sep 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Oct 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Nov 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Dec 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30

Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " *Yes*  
 Dates of Examination of principal parts—Cylinders 26.10.06, 15.11.06, 30.11.06, 13.12.06 Slides 14.1.07 Covers 13.12.06 Pistons 28.1.07 Rods 14.11.06  
 Connecting rods 28.12.06 Crank shaft 14.11.06 Thrust shaft 9.11.06 Tunnel shafts 19.12.06 Screw shaft 9.1.07 Propeller 28.12.06  
 Stern tube 1.2.07 Steam pipes tested 20.3.07 Engine and boiler seatings 18.3.07 Engines holding down bolts 7.3.07  
 Completion of pumping arrangements 19.4.07 Boilers fixed 18.3.07 Engines tried under steam 19.4.07  
 Main boiler safety valves adjusted 19.4.07 Thickness of adjusting washers PORT STARBOARD PORT STARBOARD  
 Material of Crank shaft S.M.INGOT Identification Mark on Do. 596 756 305.C. PA. PA E.J.S. Material of Thrust shaft S.M.INGOT Identification Mark on Do. 873.8 PA  
 Material of Tunnel shafts 4 { 5363.5 876.79 986 984.5 3123 3698 } Identification Marks on Do. Material of Screw shafts S.M.INGOT Identification Marks on Do. 837.874.5 PA  
 Material of Steam Pipes 6 length welded iron solid drawn copper 6 dia 2 w.c. Test pressure 540 lb on iron & 400 lb on copper 9" 02 w.c.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The machinery is similar to that fitted on board the Turin S.S. Red Italia report no. 23207.*

*The machinery of this vessel has been constructed under special survey, the materials & workmanship found good & efficient, fitted & tested in accordance with the rules & eligible in my opinion for classification with record of + L.M.C. 5.07.*

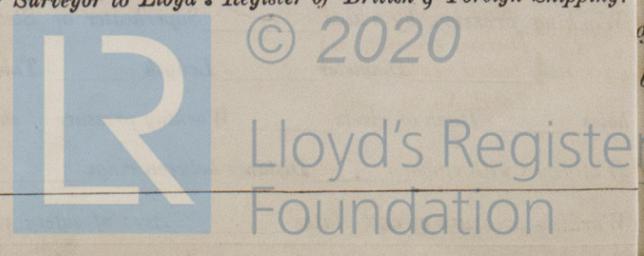
It is submitted that this vessel is eligible for **THE RECORD.** L.M.C. 5.07  
 Elec light  
 F.D.

*J. D. Stoddart*  
 14.6.07

The amount of Entry Fee.. £ 3 : : When applied for, 13.6.1907  
 Special .. .. £ 60 : 7 :  
 Donkey Boiler Fee .. .. £ : : When received, 19.6.07  
 Travelling Expenses (if any) £ : :  
 Committee's Minute  
 Assigned

*J. D. Stoddart*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

TUES. 18 JUN 1907  
 + L.M.C. 5.07  
 F.D. Elec light  
 MACHINERY CERTIFICATE WRITTEN.



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