

REPORT ON MACHINERY.

Port of *Sunderland*

Received at London Office

No. in Survey held at *Sunderland* Date, first Survey *30 July 1900* Last Survey *25 April 1907*
Reg. Book. on the *Screw Steamer "Segontian"* (Number of Visits *11*) (Gross *1171.4*) (Net *736.8*)
Master *W Evans* Built at *Middlesbrough* By whom built *Harkers & Sons* When built *1901*
Engines made at *Sunderland* By whom made *Mac Coll & Pollock* when made *1901*
Boilers made at *Sunderland* By whom made *Mac Coll & Pollock* when made *1901*
Registered Horse Power Owners *Segontian S.S. Co Ltd* Port belonging to *Cardiff*
Nom. Horse Power as per Section 28 *131.0* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *no*

GINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
Dia. of Cylinders *17-28½-46* Length of Stroke *33* Revs. per minute *70* Dia. of Screw shaft as per rule *9"* Lgh. of stern bush *3'-1¾"*
Dia. of Tunnel shaft as per rule *8.1"* Dia. of Crank shaft journals as per rule *8.6"* Dia. of Crank pin *9"* Size of Crank webs *6½x13* Dia. of thrust shaft under
Halls *9"* Dia. of screw *12'-0"* Pitch of screw *14'-3" mean* No. of blades *4* State whether moveable *no* Total surface *57.2 sq ft*
No. of Feed pumps *2* Diameter of ditto *2½"* Stroke *17½"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* Diameter of ditto *2½"* Stroke *17½"* Can one be overhauled while the other is at work *yes*
No. of Donkey Engines *2* Sizes of Pumps *Feed 6x4x6 Ballast 6x8½x8* No. and size of Suctions connected to both Bilge and Donkey pumps
Engine Room *2-2" dia by Bilge 2-2" stokehold Bilge* In Holds, &c. *Main Hold Two 2' dia*
after peak & after well 2¼" dia *Aft Hold Two 2' dia*
No. of bilge injections *1* sizes *3¾"* Connected to condenser, or to circulating pump *C-P* Is a separate donkey suction fitted in Engine room & size *yes 3" 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 *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 *✓* 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*
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *new vessel* Is the screw shaft tunnel watertight *Apparently*
Is it fitted with a watertight door *yes* worked from *Upper Stating*

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *2025.72 sq ft* Is forced draft fitted *no*
No. and Description of Boilers *one Single Ended Multitubular Cyl* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*
Date of test *24 4 01* Can each boiler be worked separately *✓* Area of fire grate in each boiler *59 sq ft* No. and Description of safety valves to
each boiler *two direct Spring* Area of each valve *5.93 sq in* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *yes*
Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers *15'-0"* Length *10-6* Material of shell plates *Steel*
Thickness *1½"* Range of tensile strength *29/32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *8 Riv Lap* long. seams *Hi R. D. B. S*
Diameter of rivet holes in long. seams *1½"* Pitch of rivets *9½"* Length of plates *16¾"* (Ronne, Batt Chalk) (Scalloped)
Percentages of strength of longitudinal joint plate *90.10* Working pressure of shell by rules *180 lbs* Size of manhole in shell *15½"x12"* (Hi R. D. B. S)
Size of compensating ring *none Flanged* No. and Description of Furnaces in each boiler *3 Dightons* Material *Steel* Outside diameter *4'-0"*
Length of plain part top *9½"* Thickness of plates bottom *9½"* Description of longitudinal joint *Weld* No. of strengthening rings *✓*
Working pressure of furnace by the rules *183 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *19"* Back *19"* Top *19"* Bottom *7½"*
Pitch of stays to ditto: Sides *9x7½"* Back *8¾x7½"* Top *7x7½"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *180 lbs*
Material of stays *Steel* Diameter at smallest part *1.5"* Area supported by each stay *66.76 sq in* Working pressure by rules *180 lbs* End plates in steam space:
Material *Steel* Thickness *6"* Pitch of stays *15"x15"* How are stays secured *DN & W* Working pressure by rules *181 lbs* Material of stays *Steel*
Area at smallest part *4.1 sq in* Area supported by each stay *225 sq in* Working pressure by rules *182 lbs* Material of Front plates at bottom *Steel*
Thickness *3¼"* Material of Lower back plate *Steel* Thickness *5"* Greatest pitch of stays *14"* Working pressure of plate by rules *180 lbs*
Diameter of tubes *3¼"* Pitch of tubes *4½x4½"* Material of tube plates *Steel* Thickness: Front *13"* Back *13"* Mean pitch of stays *9x13½"*
Pitch across wide water spaces *14"* Working pressures by rules *187 lbs* Girders to Chamber tops: Material *Steel* Depth and
thickness of girder at centre *6¾x20 13/16"* Length as per rule *27"* Distance apart *7½"* Number and pitch of Stays in each *two 7" pitch*
Working pressure by rules *181 lbs* Superheater or Steam chest; how connected to boiler *none* 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 *✓*

DONKEY BOILER— No. *one*. Description *Patent Vertical (No 2834)*
 Made at *Aumau* By whom made *Cochran & Co* When made *1901* Where fixed *Stokehold*
 Working pressure *90lb* tested by hydraulic pressure to *180lb* No. of Certificate *5718* Fire grate area *20½ sq ft* Description of safety valves *direct Spring*
 No. of safety valves *one* Area of each *2.0* Pressure to which they are adjusted *90lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *no*
 Dia. of donkey boiler *6'-6"* Length *14'-0"* Material of shell plates *Steel* Thickness *½"* Range of tensile strength *27/32* Descrip. of riveting long. seams *double* Dia. of rivet holes *27/32* Whether punched or drilled *drilled* Pitch of rivets *2 3/4*
 Lap of plating *4 1/8"* Per centage of strength of joint Rivets *69.1%* Thickness of shell crown plates *7/16"* Radius of do. *3'-3"* No. of Stays to do. *none*
 Dia. of stays. *✓* *Radius* Diameter of furnace Top *2'-7½"* Bottom *✓* Length of furnace *✓* Thickness of furnace plates *17/32* Description of joint *Riveted* Thickness of furnace crown plates *17/32* Stayed by *✓* Working pressure of shell by rules *103lb*
 Working pressure of furnace by rules *101 lb* Diameter of *tube* *tube* Thickness of *11/16 + 13/16* Thickness of *stay* tubes *1/4"*

SPARE GEAR. State the articles supplied:— *Top & bottom end bolts & nuts. Two main bearing bolts & nuts. Set of coupling bolts. Set of feed. Bilge, air & circulating pump valves. Assorted iron bolts & nuts. (Share propeller supplied)*

The foregoing is a correct description,

Macle & Petch Manufacturer.

Dates { During progress of work in shops— 1900— July 30. Dec 14. 1901— Jan 15. Feb 1. 14. 23. 26. March 14. 18. Apr 17. 25.
 of Survey { During erection on board vessel — (Indb) March 29. May 9. 14
 while building { Total No. of visits 11 Sea. 3 Indb
 Is the approved plan of main boiler forwarded herewith *yes*
 retained for duplicate *no*
 " " " donkey " " " " " " " " " " " "

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

Material of screw shaft *Steel* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no*
 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 *✓*
 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 *no, paint only.*

The machinery of this vessel constructed under Special Survey.

The material and workmanship good and efficient Boilers and steam pipe tested under hydraulic pressure to 360 lbs and found sound and efficient in every respect at that pressure

The Engines tried under steam at their working pressures and found satisfactory.

In our opinion this vessel is worthy of the notation
 ✠ L. M. C. 5:01 to be made in the Register Book —

It is submitted that this vessel is eligible for THE RECORD. + L M C 5,01

P.S.A.
 28.5.01

The amount of Entry Fee. £ 2: 19: 13: } When applied for, 6.5.01
 Special £ } When received, 13.5.01
 Donkey Boiler Fee £
 Travelling Expenses (if any) £

Committee's Minute

Assigned

TUES. MAY 28 1901

+ L.M.C. 5.01

MACHINERY CERTIFICATE WRITTEN.

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



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Gunderland

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