

## REPORT ON MACHINERY.

Port of Newcastle

MUR. 16 OCT 1902

No. in Survey held at Newcastle Date, first Survey Sep 17 Last Survey Sep 19 1902  
 Reg. Book. on the S/S. "New York" (Number of Visits 59)  
 Master R. Buty Built at Jarrow By whom built Palmer's S.B. & S.C. Co. Ltd Tons { Gross 7050  
 Engines made at Jarrow By whom made Palmer's S.B. & S.C. Co. Ltd Net 4638  
 Boilers made at " By whom made " When built 1902  
 Registered Horse Power " when made 1902  
 Owners American Petroleum Co Port belonging to Rotterdam  
 Nom. Horse Power as per Section 28 564 Is Refrigerating Machinery fitted no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines In E.P. R.

Dia. of Cylinders 28" 46" 44" Length of Stroke 54" No. of Cylinders 3 No. of Cranks 3  
 Dia. of Tunnel shaft as per rule Dia. of Crank shaft journals as per rule Revs. per minute 70 Dia. of Screw shaft as per rule Lgth. of stern bush 5'6 3/4"  
 collars 15 1/2" Dia. of screw 19 1/2" Pitch of screw 19 1/2" Dia. of Crank pin 15 1/2" Size of Crank webs 11" x 22 1/2" Dia. of thrust shaft under  
 No. of Feed pumps 2 Diameter of ditto 5 1/4" Stroke 30" No. of blades 4 State whether moveable yes Total surface 110 sq. ft.  
 No. of Bilge pumps 2 Diameter of ditto 6" Stroke 30" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 4 Sizes of Pumps 7 1/2 x 6" 7 1/2 x 4 1/2 x 10" 6 x 8 1/2 x 6" Can one be overhauled while the other is at work yes  
 In Engine Room 3 of 3 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Holds, &c.

No. of bilge injections 1 sizes 1" Connected to condenser, or to circulating pump E.P. Is a separate donkey suction fitted in Engine room & size yes 5"  
 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 none How are they protected yes  
 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 none  
 Is it fitted with a watertight door yes worked from yes

BOILERS, &c.— (Letter for record B) Total Heating Surface of Boilers 9960 sq. ft. Is forced draft fitted no  
 No. and Description of Boilers 4 single ended Multitubular Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs  
 Date of test 25/3/02 Can each boiler be worked separately yes Area of fire grate in each boiler 64 sq. ft. No. and Description of safety valves to  
 each boiler 2 Spring Area of each valve 7.06 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 about 15" Mean dia. of boilers 16' 3" Length 11 1/2" Material of shell plates S.  
 Thickness 1 1/16" Range of tensile strength 29,100 lbs Are they welded or flanged both Descrip. of riveting: cir. seams drill lap long. seams T. & B. butt  
 Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9 1/4" Lap of plates or width of butt straps 20 1/2"  
 Per centages of strength of longitudinal joint rivets 86 1/2% plate 85 1/2% Working pressure of shell by rules 188 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Material S. Outside diameter 4' 1 3/4"  
 Length of plain part top 5' 8" Thickness of plates bottom 5' 8" Description of longitudinal joint welded No. of strengthening rings yes  
 Working pressure of furnace by the rules 200 lbs Combustion chamber plates: Material S. Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1/2"  
 Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8 1/2" x 8 1/2" Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184 1/2 lbs  
 Material of stays S. Diameter at smallest part 1 1/8" Area supported by each stay 7225 sq. in. Working pressure by rules 2226 lbs End plates in steam space:  
 Material are Thickness 1 1/8" Pitch of stays 19 1/2" x 16 1/2" How are stays secured Drum Working pressure by rules 1955 lbs Material of stays S.  
 Diameter at smallest part 6' 3" Area supported by each stay 3158 sq. in. Working pressure by rules 194 lbs Material of Front plates at bottom S.  
 Thickness 3/4" Material of Lower back plate S. Thickness 1" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 245 1/2 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates S. Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9"  
 Pitch across wide water spaces 15 1/2" Working pressures by rules 244 1/2 lbs Girders to Chamber tops: Material S. Depth and  
 thickness of girder at centre 9" x 2" Length as per rule 34" Distance apart 82" Number and pitch of Stays in each 3 @ 8 1/4"  
 Working pressure by rules 3135 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
 separately yes 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. 1 Description *Cylindrical Multitubular.*  
Made at *London* By whom made *Palmer & Co. Ltd* When made *1902* Where fixed *Main deck*  
Working pressure *100 1/2* Tested by hydraulic pressure to *200 1/2* No. of Certificate *6276* Fire grate area *30 1/2* Description of safety valves *Spring*  
No. of safety valves *2* Area of each *4.9* Pressure to which they are adjusted *105 1/2* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*  
Dia. of donkey boiler *9 ft.* Length *9 ft.* Material of shell plates *S.* Thickness *3/8* Range of tensile strength *32 tons* Descrip. of riveting long. seams *1/2 R lap.* Dia. of rivet holes *7/8* Whether punched or drilled *D.* Pitch of rivets *3 1/2*  
Lap of plating *6 1/8* Per centage of strength of joint *80.5* Rivets *43.7* Thickness of shell crown plates *3/4* Radius of do. — No. of Stays to do. *6*  
Dia. of stays *2.66* Diameter of furnace Top *2.9* Bottom — Length of furnace *6 ft.* Thickness of furnace plates *7* Description of joint *Stitch* Thickness of furnace crown plates *3* Stayed by *1 3/8* Stays *29 x 8 1/2* Working pressure of shell by rules *104 1/2*  
Working pressure of furnace by rules *118 1/2* Diameter of uptake *3* Thickness of uptake plates *5 1/2* Thickness of water tubes *1/2*

SPARE GEAR. State the articles supplied: *1/3 Crank shaft. for bellcrank shaft. 1 set connecting rod bolts & nuts. 1 set main bearing bolts & nuts. 1 set coupling bolts & nuts. 1 set feed & bilge pump valves. 3. nuts bolts & various sizes of iron rods plates &c.*  
The foregoing is a correct description, *Palmer Shipbuilding & Iron Co. Ltd.*  
Manufacturer.

Engine Works *London*  
Dates of Survey while building  
During progress of work in shops — *1901. Sep. 17. Oct. 25. 31. Nov. 5. 6. 7. 8. 11. 12. 13. 14. 29. Dec. 3. 5. 11. 16. 18. 19. 23. 1902. Jan. 23. 27. 29. Feb. 3. 6. 10. 11. 21. 24.*  
During erection on board vessel — *27. 28. Mch. 1. 12. 14. 19. 24. 25. Apr. 8. 9. 24. 30. May 14. 22. 29. June 3. 14. 6. 9. 10. 23. Aug. 19. 20. 26. Sep. 1. 10. 17. 18. 19.*  
Total No. of visits *59.* Is the approved plan of main boiler forwarded herewith *yes*  
" " " donkey " " " *yes*

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

Material of screw shaft *Iron* 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 —  
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 —

*Machinery and boilers constructed under Special Survey materials and workmanship good. Engines & boilers examined under steam & found satisfactory*  
*In my opinion this vessel is eligible for the record of L.M.C. 9/02 in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD - L.M.C. 9.02 etc. Light.*  
*16.10.02*

The amount of Entry Fee.. £ *2* : : : When applied for, *15 OCT 1902*  
Special .. .. £ *48* : : :  
Donkey Boiler Fee .. .. £ : : : When received, *17 OCT 1902*  
Travelling Expenses (if any) £ : : :  
Committee's Minute  
Assigned *17 OCT 1902*

