

## REPORT ON MACHINERY.

No. 5311

Received at London Office *London 12 1922*

Date of writing Report *Apr. 29th. 22* When handed in at Local Office *Hong Kong* 10 Port of *Hong Kong*

No. in Survey held at *Hong Kong* Date, First Survey *Jan. 10th. 1921* Last Survey *Apr. 28th. 1922*

Reg. Book. *on the Steel Screw Steamer "PLANORBIS"* (Number of Visits *128*) Tons { Gross *5818.86* Net *3491.36*

Master *Hong Kong* Built at *Hong Kong* By whom built *Hongkong & Whampoa Dock Co. Ltd.* When built *1922*

Engines made at *Hong Kong* By whom made *Hongkong & Whampoa Dock Co. Ltd.* when made *1922*

Boilers made at *Hong Kong* By whom made *Hongkong & Whampoa Dock Co. Ltd.* when made *1922*

Registered Horse Power *Anglo-Saxon Petroleum Co. Ltd.* Port belonging to *Hong Kong*

Nom. Horse Power as per Section 28 *517* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple Surface Condensing* No. of Cylinders *3* No. of Cranks *3*

Dia. of Cylinders *27", 44", 73"* Length of Stroke *48"* Revs. per minute *78* Dia. of Screw shaft *14 1/2"* Material of *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

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

tween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *-* If two

vers are fitted, is the shaft lapped or protected between the liners *-* Length of stern bush *5'-3"*

Dia. of Tunnel shaft *None* Dia. of Crank shaft journals *13.99"* Dia. of Crank pin *14 1/2"* Size of Crank webs *28"x9"* Dia. of thrust shaft under

bars *14 1/2"* Dia. of screw *17'-9"* Pitch of Screw *16'-9"* No. of Blades *4* State whether moveable *Fixed* Total surface *96 sq. ft.*

No. of Feed pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *15* Sizes of Pumps *See Note* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *2-3 1/2" in well; 2-3 1/2" in Stokehold 1-3 1/2" In Holds, &c.* In aft well (Aft Cofferdam two 3 1/2"; Main Pump room

forward Pump room one 2"; Hold two 2"; Chain locker one 2" all connected to donkey. (two 2 1/2"; Forward cofferdam two 3 1/2";

No. of Bilge Injections *1* sizes *10"* Connected to condenser, or to circulating pump *Cir. Pp* Is a separate Donkey Suction fitted in Engine room & size *Yes, 3 1/2"*

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 *-*

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 *below*

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*

That pipes are carried through the bunkers *Aft cofferdam Bilge Suctions* How are they protected *Steel Plates*

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 *None* Is it fitted with a watertight door *-* worked from *-*

DILERS, &c.—(Letter for record *25/8/30* Manufacturers of Steel *Wm. Beardmore & Co.*

Total Heating Surface of Boilers *7662* Is Forced Draft fitted *Yes* No. and Description of Boilers *Three Cylindrical Multitubular*

Working Pressure *180 lbs.* Tested by hydraulic pressure to *320 lbs.* Date of test *25-1-22* No. of Certificate *25, 126, 127*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *63.6 sq. ft.* No. and Description of Safety Valves to

each boiler *Two double spring* Area of each valve *9.6* Pressure to which they are adjusted *180 lbs.* Are they fitted with easing gear *Yes*

loaded *3 1/2"* Smallest distance between boilers or uptakes and bunkers or woodwork *1'-5"* Mean dia. of boilers *15'-6"* Length *11'-7"* Material of shell plates *Steel*

Thickness *1 1/4"* Range of tensile strength *28-32 Tons* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *Double lap*

ong. seams *Triple Butt* Diameter of rivet holes in long. seams *1, 5/16"* Pitch of rivets *9 1/8"* Lap of plates or width of butt straps *19 1/2"*

Per centages of strength of longitudinal joint *88.3%* Working pressure of shell by rules *182 lbs.* Size of manhole in shell *16" x 12"*

Size of compensating ring *34"x38"x1 1/4"* No. and Description of Furnaces in each boiler *Three Deighton* Material *Steel* Outside diameter *48 1/2"*

Length of plain part *top - bottom -* Thickness of plates *crown 9/16" bottom -* Description of longitudinal joint *Welded* No. of strengthening rings *-*

Working pressure of furnace by the rules *180.7 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *25/32"* Back *Gr. 1"* Top *25/32"* Bottom *25/32"*

Pitch of stays to ditto: Sides *9" x 9"* Back *9x9 1/2"* Top *9x9 1/2"* If stays are fitted with nuts or riveted heads *Yes* Working pressure by rules *182 lbs.*

Material of stays *Steel* Area at smallest part *2.03* Area supported by each stay *446.6* Working pressure by rules *193 lbs.* Material of stays *Steel*

Material *Steel* Thickness *1, 11/32"* Pitch of stays *20 1/2"x21 1/2"* How are stays secured *Nuts* Working pressure by rules *181 lbs.* Material of stays *Steel*

Area at smallest part *8.29* Area supported by each stay *446.6* Working pressure by rules *193 lbs.* Material of Front plates at bottom *Steel*

Thickness *31/32"* Material of Lower back plate *Steel* Thickness *7/8"* Greatest pitch of stays *14 1/2"* Working pressure of plate by rules *186 lbs*

Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2"x4 1/2"* Material of tube plates *Steel* Thickness: Front *31/32"* Back *13/16"* Mean pitch of stays *13 1/2"x9"*

Pitch across wide water spaces *14 1/2"* Working pressures by rules *182 lbs.* Space *189* Orders to Chamber tops: Material *Steel* Depth and

Thickness of girder at centre *10 1/4"x 1 1/2"* (2 off) Length as per rule *2'-9 1/2"* Distance apart *9 1/2"* Number and pitch of stays in each *Three 9"*

Working pressure by rules *214 lbs.* Steam dome: description of joint to shell *-* % of strength of joint *-*

Diameter *-* Thickness of shell plates *-* Material *-* Description of longitudinal joint *-* Diam. of rivet holes *-*

Pitch of rivets *-* Working pressure of shell by rules *-* Crown plates *-* Thickness *-* How stayed *-*

PERHEATER. Type *-* Date of Approval of Plan *-* Tested by Hydraulic Pressure to *-*

Date of Test *-* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *-*

Diameter of Safety Valve *-* Pressure to which each is adjusted *-* Is Easing Gear fitted *-*

MS57-0044



IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes

SPARE GEAR. State the articles supplied:— See List attached

The foregoing is a correct description,  
 ADVISING & WHARF DOCK Co., Ltd.

R. M. Day

Manufacturer.

1921 Jan. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Mar. 1, 2, 4, 7, 10, 16, 24, 29, Apr. 15, 19, 25, 28, May 2, 4, 6, 11, 13, 14, 26, Jun. 2, 6, 11, 15, 16, 23, 24, Jul. 1, 6, 7, 8, 11, 12, 13, 20, 23, 25, 27, 29, Aug. 2, 3, 5, 8, 11, 13, 15, 18, 20, 25, 31, Sept. 1, 2, 5, 7, 8, 9, 10, 14, 19, 23, 27, 29, 30, Oct. 3, 7, 10, 11, 12, 13, 14, 22, 25, 26, 28, 31, Nov. 2, 4, 5, 7, 10, 14, 15, 16, 18, 22, 24, 25, 28, 30, Dec. 5, 7, 12, 13, 17, 21, 1922 Jan. 4, 9, 11, 13, 17, 21, 25, Feb. 6, 13, 14, 21, 22, 23, 25, Mar. 8, 9, 16, 25, 27, 30, Apr. 10, 14, 16, 18, 22, 23, 26 & 28th.

Dates of Survey while building: During progress of work in shops -- During erection on board vessel -- Total No. of visits

Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts—Cylinders 8/9/21 Slides 12/10/21 Covers 12/10/21 Pistons 12/10/21 Rods 23/12/21

Connecting rods 12/10/21 Crank shaft 11/5/21 Thrust shaft 27/9/21 Tunnel shafts None Screw shaft 4/11/21 Propeller 6/7/21

Stern tube 29/12/21 Steam pipes tested 16/4/22 Engine and boiler seatings 13/2/22 Engines holding down bolts 30/3/22

Completion of pumping arrangements 22/4/22 Boilers fixed 10/4/22 Engines tried under steam 26/4/22

Completion of fitting sea connections 17/1/22 Stern tube 22/2/22 Screw shaft and propeller 25/2/22

Main boiler safety valves adjusted 18/4/22 Thickness of adjusting washers Ford. S. 1/8" Port S. 1/32" St. S. 1/32"

Dky. " " " 28/4/22 " " " 3/8" both

Material of Crank shaft Steel Identification Mark on Do. LLOYD'S 6598 A.P. Material of Thrust shaft Steel Identification Mark on Do. 235 HKg

Material of Tunnel shafts None Identification Marks on Do. " " " " 240 HKg

Material of Steam Pipes Solid Drawn Steel Test pressure 540 lbs.

" feed " Solid Drawn Copper 450 lbs.

Is an installation fitted for burning oil fuel Yes 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. "PALUDINA" Rpt. 5242 and S.S. "PETRICOLA" Rpt. 5284

General Remarks (State quality of workmanship, opinions as to class, &c. The workmanship is good and it is recommended that the vessel be classed with Lloyd's Machinery Certificate and the record of M.C. 4,1922 be made in the Register Book. Fitted for oil fuel 4,1922 F.P. above 150°F.

## IDENTIFICATION MARKS ON BOILERS:—

No. 125 HKg.  
 LLOYD'S TEST  
 320 lbs.  
 W.P. 180 lbs.  
 16-1-22  
 T.S.M.

No. 126 HKg.  
 LLOYD'S TEST  
 320 lbs.  
 W.P. 180 lbs.  
 25-1-22  
 T.S.M.

No. 127 HKg.  
 LLOYD'S TEST  
 320 lbs.  
 W.P. 180 lbs.  
 9-3-22  
 T.S.M.

## NOTE:— SIZES OF DONKEY PUMPS:—

ENGINE ROOM:— Two Weir's feed 8" x 10½" x 21"; General Service 5½" x 7½" x 15"; Centrifugal Circulating 14"; Ballast 8" x 9" x 10" Horiz. Duplex; Donkey Boiler Feed 6" x 4" x 6"

Two Fan engines 7" x 5".

FORWARD PUMP ROOM:— Ballast 8" x 6" x 10"; Transfer 8" x 6" x 10".

MAIN PUMP ROOM:— Two cargo 14" x 12" x 14" duplex. Drain Pump 6" x 4½" x 6".

STOKEHOLD:— Transfer pump in stokehold 6" x 4½" x 6"; Oil fuel pumps for main boilers 4" x 6" (two off) with heaters; One oil fuel pump with heater for donkey boiler 2½" x 3½"

The amount of Entry Fee ... \$ 96.00 :  
 Special ... \$ 1614.00 :  
 Donkey Boiler Fee ... \$ 67.00 :  
 Travelling Expenses (if any) \$ 209.00 :  
 Electric Light \$ 256.00 :  
 Sunday fees Apr. 16, 23 \$ 40.00 :  
 Committee's Minute

When applied for, 28/4 1922

When received, 7/5 1922

Assigned

L. M. C. 4.22  
 F. D. C. L.

Listed for oil fuel 4.22  
 F.P. above 150°F.



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 Foundation