

# REPORT ON MACHINERY.

No. 57380

Port of *Newcastle on Tyne*

Received at London Office **TUES. 28 SEP 1909**

To. in Survey held at *S. Shields*

Date, first Survey *14<sup>th</sup> May '09* Last Survey *21<sup>st</sup> Sept 1909*

Book. on the *S.S. "No. 73"*

(Number of Hoists *20*)

Tons } Gross  
          } Net

Built at *Heddingfield* By whom built *Van Vleet and Co.* When built *1909.*

Lines made at *S. Shields* By whom made *G. T. Gray* when made *1909.*

Welders made at *ditto* By whom made *J. J. Cunningham & Co.* when made *1909*

Registered Horse Power *82* Owners *Shipping Investments Ltd.* Port belonging to *London*

Horse Power as per Section 28 *82* Is Refrigerating Machinery fitted for cargo purposes *ho* Is Electric Light fitted *ho*

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

No. of Cylinders *13-21-34* Length of Stroke *24"* Revs. per minute *130.* Dia. of Screw shaft *as per rule 7.62* Material of *Iron*  
*as fitted 7 3/4* screw shaft)

Is the screw shaft fitted with a continuous liner the whole length of the stern tube *ho* Is the after end of the liner made water tight  
the propeller boss *✓* 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 *✓* Length of stern bush *32"*

Dia. of Tunnel shaft *as per rule 6.44* Dia. of Crank shaft journals *as per rule 6.76* Dia. of Crank pin *6 7/8* Size of Crank webs *13 1/4 x 6 1/2* of thrust shaft under  
*as fitted 6 1/2* Dia. of screw *9-0"* Pitch of Screw *10-3"* No. of Blades *4* State whether moveable *ho* Total surface *31 sq. ft.*

No. of Feed pumps *2* Diameter of ditto *2 1/4"* Stroke *13"* Can one be overhauled while the other is at work *Yes ✓*

No. of Bilge pumps *2* Diameter of ditto *2 3/8"* Stroke *13"* Can one be overhauled while the other is at work *Yes ✓*

No. of Donkey Engines *Two.* Sizes of Pumps *5 1/4 x 3 1/2 x 5 & 6 x 7 x 8* No. and size of Suctions connected to both Bilge and Donkey pumps  
in Engine Room *Thin. 2" Bore.* In Holds, &c. *Fore Hold. Two - 2" Bore*

No. of Bilge Injections *1* sizes *2 3/4"* Connected to condenser, or to circulating pump *C.P.* 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 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 *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 ✓*

Dates of examination of completion of fitting of Sea Connections *6.8.09* of Stern Tube *6.8.09* Screw shaft and Propeller *6.8.09*

Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Top Platform.*

## BOILERS, &c.—(Letter for record *(5)*) Manufacturers of Steel *J. P. Pinner & Sons Ltd.*

Total Heating Surface of Boilers *1550 sq. ft.* Is Forced Draft fitted *ho* No. and Description of Boilers *One. Cyl. built. S. End.*

Working Pressure *180 lb.* Tested by hydraulic pressure to *360 lb.* Date of test *14.7.09.* No. of Certificate *7870*

Can each boiler be worked separately *✓* Area of fire grate in each boiler *45 sq. ft.* No. and Description of Safety Valves to  
each boiler *2. Spring* Area of each valve *4.9 sq. in.* Pressure to which they are adjusted *180 lb.* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *10"* Mean dia. of boilers *15 1/2"* Length *10-4* Material of shell plates *S.*

Thickness *1 3/16* Range of tensile strength *28 3/4/32 T.* Are the shell plates welded or flanged *ho* Descrip. of riveting: cir. seams *LOR.*  
long. seams *DBS - TR.* Diameter of rivet holes in long. seams *1 7/16* Pitch of rivets *7 7/8* Lap of plates or width of butt straps *20 1/8*

Per centages of strength of longitudinal joint rivets *89.0* Working pressure of shell by rules *205 lb.* Size of manhole in shell *16" x 12"*  
plate *82.7*

Size of compensating ring *7 1/2 x 1 1/4* No. and Description of Furnaces in each boiler *3. Plain* Material *S.* Outside diameter *38"*

Length of plain part top *7 1/2* Thickness of plates crown *23/32* Description of longitudinal joint *O.B.S.* No. of strengthening rings *One*  
bottom *7 1/2* bottom *23/32*

Working pressure of furnace by the rules *186 lb.* Combustion chamber plates: Material *S.* Thickness: Sides *2 1/32* Back *1 1/16* Top *2 1/32* Bottom *2 3/32*

Pitch of stays to ditto: Sides *9 7/8 x 8* Back *9 1/2 x 9 1/2* Top *9 1/2 x 8* If stays are fitted with nuts or riveted heads *nut.* Working pressure by rules *190 lb.*

Material of stays *S.* Diameter at smallest part *1 1/8* Area supported by each stay *84 sq. in.* Working pressure by rules *211 lb.* End plates in steam space:  
Material *S.* Thickness *1 1/16* Pitch of stays *17 1/2 x 16 3/8* How are stays secured *O.N.W.* Working pressure by rules *182 lb.* Material of stays *S.*

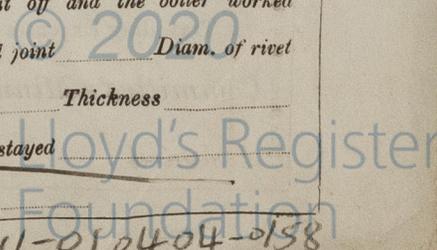
Diameter at smallest part *2 25/32* Area supported by each stay *295 sq. in.* Working pressure by rules *216 lb.* Material of Front plates at bottom *S.*

Thickness *2 1/32* Material of Lower back plate *S.* Thickness *29/32* Greatest pitch of stays *15 x 9 1/8* Working pressure of plate by rules *184 lb.*

Diameter of tubes *3 1/4* Pitch of tubes *4 1/2* Material of tube plates *S.* Thickness: Front *3/32* Back *2 3/32* Mean pitch of stays *11 1/4 x 9"*

PLEASE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

610391-010404-0138



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

*Particulars given in the attached plan.*

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:— *Two top and bottom & nuts, Two bottom end bolts, Two main bearing nuts, one nut coupling bolts, one nut work air, circulating fuel and Bilge Pump Valves. Assorted bolts & nuts.*

The foregoing is a correct description, *Approved & true*  
 Manufacturer of Engines *W. H. Bell* Jno. J. Whittingham Esq  
 manufacturer of boiler.

1909

Dates of Survey while building { During progress of work in shops - - } *May 15-24-25 Jun 7-8-15 Jul 1-10-19-23-30-31 Aug 6-10-19-24-27 Sep 6-8-21.*

{ During erection on board vessel - - }

Total No. of visits *20* Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *15-7-09* Slides *1-7-09* Covers *1-7-09* Pistons *15-7-09* Rods *26-8-09*

Connecting rods *28-5-09* Crank shaft *3-5-09* Thrust shaft *11-5-09* Tunnel shafts *10-7-09* Screw shaft *1-7-09* Propeller *10-7-09*

Stern tube *10-7-09* Steam pipes tested *30-8-09* Engine and boiler seatings *6-8-09* Engines holding down bolts *19-8-09*

Completion of pumping arrangements *17-9-09* Boilers fixed *6-9-09* Engines tried under steam *8-9-09*

Main boiler safety valves adjusted *8-9-09* Thickness of adjusting washers *P 3/8" 5 3/8"*

Material of Crank shaft *S. Y. S.* Identification Mark on Do. *ATG* Material of Thrust shaft *S. Y. S.* Identification Mark on Do. *ATG*

Material of Tunnel shafts *Pump* Identification Marks on Do. *W. L.* Material of Screw shafts *Pump* Identification Marks on Do. *W. L.*

Material of Steam Pipes *Copper* Test pressure *360 lb sq*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The above machinery has been constructed under special order. The materials and workmanship employed in its manufacture are sound and good. It has now been fitted on board the above vessel in a satisfactory manner. The vessel is eligible, in our opinion, for service + L.M.C. 9.09*)

See Memorandum on page 107

*THIS vessel is eligible for THE BOARD + L.M.C. 9.09*

*W. H. Bell*  
*28/9/09*

The amount of Entry Fee.. £ 1 : 0 : 0 When applied for, \_\_\_\_\_

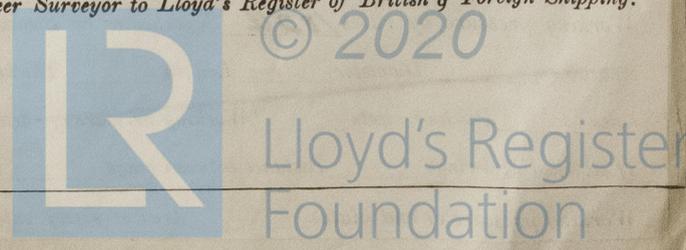
Special .. .. . £ 12 : 6 : 0 *27 SEP 1909*

Donkey Boiler Fee .. .. . £ \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ When received, \_\_\_\_\_

Travelling Expenses (if any) £ \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ *28.9.09*

*Charles Cooper & W. Lane*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned *+ L.M.C. 9.09*  
 TUES. 28 SEP 1909  
 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.)