

# REPORT ON MACHINERY.

No. 26879

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of writing Report *11th Oct. 1913* When handed in at Local Office *Nov 6th 1913* Port of *Hull*.

in Survey held at *Hull*. Date, First Survey *Dec 16/12*. Last Survey *Nov. 4th 1913*.

Book. *67* on the steel SS. *"Silvio"* (Number of Visits *51*) Tons *1284* Gross *651* Net

ster Built at *Dundee*. By whom built *Dundee S.B. Co* When built *1913*.

ines made at *Hull*. By whom made *Amos & Smith Ltd* when made *1913*.

ilers made at *Hull*. By whom made *Amos & Smith Ltd* when made *1913*.

gistered Horse Power Owners *J. Wilson Sons & Co Ltd* Port belonging to *Hull*.

m. Horse Power as per Section 28 *196*. Is Refrigerating Machinery fitted for cargo purposes *no*. Is Electric Light fitted *yes*.

GINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*.

a. of Cylinders *18-30-50* Length of Stroke *36* Revs. per minute *11.25* Dia. of Screw shaft *11 3/4* Material of *S* screw shaft

the screw shaft fitted with a continuous liner the whole length of the stern tube *no liners* 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

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

ers are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *4'-0"*

a. of Tunnel shaft *9.3* as per rule *9.3* Dia. of Crank shaft journals *10 1/4* as per rule *10 1/4* Dia. of Crank pin *10 1/4* Size of Crank webs *20x6 5/8* Dia. of thrust shaft under

lars *10 1/4* Dia. of screw *13-6* Pitch of Screw *13-3"* No. of Blades *4* State whether moveable *no* Total surface *56 8*

a. of Feed pumps *2* Diameter of ditto *2 3/4* Stroke *18"* Can one be overhauled while the other is at work *yes*.

a. of Bilge pumps *2* Diameter of ditto *2 3/4* Stroke *18"* Can one be overhauled while the other is at work *yes*.

a. of Donkey Engines *2* Sizes of Pumps *6 1/4 x 4 3/4 x 6" 7 1/4 x 8 x 8"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *2-2 1/2" on each side of tank. 1-2 1/2" to hold.* In Holds, &c. *2-2 1/4" to No. 1 hold. 2-2 1/4" to No. 2 hold.*

*1-2 1/2" to After Hold. 1-2 1/4" to Tunnel well.*

a. of Bilge Injections *1* sizes *4 1/4"* Connected to condenser, or to circulating pump *pump* Is a separate Donkey Suction fitted in Engine room & size *yes. 3"*

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 *Forward bilge tank suction* How are they protected *Wood casing*.

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 *8.9.13*. of Stern Tube *8.9.13*. Screw shaft and Propeller *8.9.13*.

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

BOILERS, &c.—(Letter for record *S*). Manufacturers of Steel *Messrs. Phoenix & Co. Ltd. Huddersfield*.

Total Heating Surface of Boilers *3496* Is Forced Draft fitted *no*. No. and Description of Boilers *Two. Single-ended*.

Working Pressure *180 lbs.* Tested by hydraulic pressure to *360 lbs.* Date of test *1.7.13*. No. of Certificate *1995*.

Can each boiler be worked separately *yes*. Area of fire grate in each boiler *47.4* No. and Description of Safety Valves to

each boiler *Two spring loaded* Area of each valve *5.94* 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 *10"* Mean dia. of boilers *13'-6"* Length *10'-6"* Material of shell plates *S*.

Thickness *1 1/16"* Range of tensile strength *29-33*. Are the shell plates welded or flanged *no*. Descrip. of riveting: cir. seams *10R lap*.

long. seams *10BS 5 inch* Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *7 1/4"* Lap of plates or width of butt straps *15 3/8"*.

Per centages of strength of longitudinal joint *85.6* Working pressure of shell by rules *180*. Size of manhole in shell *16x12*.

Size of compensating ring *40x30x1 1/16"* No. and Description of Furnaces in each boiler *3 plain* Material *S*. Outside diameter *3-3 5/8"*.

Length of plain part *81.5* Thickness of plates *13* Description of longitudinal joint *Welded*. No. of strengthening rings *✓*

Working pressure of furnace by the rules *205*. Combustion chamber plates: Material *S*. Thickness: Sides *1 1/16"* Back *1 1/16"* Top *1 1/16"* Bottom *1 1/16"*.

Pitch of stays to ditto: Sides *9 1/4 x 9*. Back *8 7/8 x 9 1/8* Top *9 1/4 x 9*. If stays are fitted with nuts or riveted heads *nuts*. Working pressure by rules *186*.

Material of stays *S*. Diameter at smallest part *2.06 2-3/4"* Area supported by each stay *88* Working pressure by rules *20* End plates in steam space: *19 1/4 inch*.

Material *S*. Thickness *1 1/16"* Pitch of stays *17 1/4 x 17* How are stays secured *Welded*. Working pressure by rules *183*. Material of stays *S*.

Diameter at smallest part *6.1* Area supported by each stay *294* Working pressure by rules *216*. Material of Front plates at bottom *S*.

Thickness *3/32* Material of Lower back plate *S*. Thickness *7/8"* Greatest pitch of stays *14 x 9 1/8"* Working pressure of plate by rules *183*.

Diameter of tubes *3 1/4"* Pitch of tubes *4 1/8 x 4 1/16"* Material of tube plates *S*. Thickness: Front *31/32"* Back *27/32"* Mean pitch of stays *13 7/8 x 8 7/8"*.

Pitch across wide water spaces *1/4"* Working pressures by rules *184*. Girders to Chamber tops: Material *S*. Depth and

thickness of girder at centre *9 x 1 1/2"*. Length as per rule *2-7 1/16"* Distance apart *9 3/4"* Number and pitch of stays in each *3-9"*

Working pressure by rules *190*. 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

W262-0072



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
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with casing 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	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied: *Two each top & bottom connecting rod bolts nuts. Two main bearing bolts nuts. The set feed & bilge pump valves. A quantity of assorted bolts & nuts of different sizes. Main & donkey chest valves. The set of air pump valves. 6 junk ring bolts. 6 cylinder cover studs nuts. Spare Propeller. The safety valve spring. The spring for each size of escape valve.*

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

Manufacturer.

Dates of Survey while building	During progress of work in shops --	1912: Dec 16, 23, 31. 1913: Jan 21, 27, 28, Feb 5, 8, 11	Managing Director. 18, 20, 24, 28 Mar 5, 7, 8, 13, 14, 17, 19	
	During erection on board vessel ---	Apr 7, 12, 15, 22, 24, 29. May 5, 22, 28.		Jun 10, 18, 27. July 1, 8, 14, 29. Aug 13, 21, 29. Sep 5, 8, 13
	Total No. of visits	57.		

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—	Cylinders 10.6.13.	Slides 13.8.13.	Covers 13.8.13.	Pistons 10.6.13.	Rods 10.6.13.
Connecting rods	10.6.13.	Crank shaft 29.7.13.	Thrust shaft 5.9.13.	Tunnel shafts 29.7.13.	Screw shaft 5.9.13.
Propeller	8.9.13.	Stern tube 8.9.13.	Steam pipes tested 25.9.13.	Engine and boiler seatings 8.9.13.	Engines holding down bolts 23.9.13.
Completion of pumping arrangements	1.10.13.	Boilers fixed 23.9.13.	Engines tried under steam	1.10.13.	
Main boiler safety valves adjusted	1.10.13.	Thickness of adjusting washers	SB SV $\frac{9}{32}$ PY $\frac{7}{32}$ PB SV $\frac{9}{32}$ PY $\frac{7}{32}$		
Material of Crank shaft	S.	Identification Mark on Do.	1082.	Material of Thrust shaft	S.
Identification Mark on Do.	1082.	Material of Tunnel shafts	S.	Identification Marks on Do.	1082.
Material of Screw shafts	S.	Identification Marks on Do.	1082.	Material of Steam Pipes	Copper solid drawn.
Test pressure	360 lbs. hyd. press.				

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines & boilers of this vessel have been constructed under special survey in accordance with the Rules. The materials & workmanship are both good. The Boilers tested by hydraulic pressure, and with the engines secured on board & tested under steam they are now in good order & safe working condition, and respectfully submitted as being eligible in my opinion to be classed with the notation of + LMC 11.13 in the Register book.*

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 11-13.

The amount of Entry Fee	£ 2. -	When applied for,	6/11/13
Special	£ 29. 8	When received,	31/7/13
Donkey Boiler Fee	£ -		
Travelling Expenses (if any)	£ -		

Committee's Minute

TUE. NOV. 11. 1913

Assigned

+ LMC 11.13.

MACHINERY CERTIFICATE  
WRITTEN. 10/11/13



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