

# REPORT ON MACHINERY.

No. 60765

Date of writing Report 10 When handed in at Local Office JUL 29 1911 Port of NEWCASTLE ON TYNE  
 Received at London Office NOV 11 1911  
 No. in Survey held at NEWCASTLE ON TYNE Date, First Survey 9<sup>th</sup> May 1907 Last Survey 28<sup>th</sup> July 1911  
 Reg. Book. 1273 on the Machinery of the S.S. *Mogileff* (Number of Visits) Gross 4630  
 Master Built at Newcastle By whom built Armstrong Whitworth & Co. Ltd. Net 2980  
 Engines made at Wallsend By whom made Wallsend Shipway & Eng. Co. when built 1911  
 Boilers made at " By whom made " when made 1907  
 Registered Horse Power Owners Russian Volunteer Fleet Acc. Port belonging to Odessa  
 Nom. Horse Power as per Section 28 478 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 27", 45" & 75" Length of Stroke 48" Revs. per minute 67 Dia. of Screw shaft as per rule 14.87 as fitted 15.32 Material of screw shaft 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 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 Length of stern bush 5'-5"  
 Dia. of Tunnel shaft as per rule 12.64 as fitted 13.4 Dia. of Crank shaft journals as per rule 13.27 as fitted 14.07 Dia. of Crank pin 14 1/2" Size of Crank webs 9 3/4" x 22" Dia. of thrust shaft under collars 14 1/2" Dia. of screw 18'-0" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable Yes Total surface 110 sq ft  
 No. of Feed pumps 4 Diameter of ditto 7 x 9 1/2" Stroke 21" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 3/4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 3 Sizes of Pumps 8 x 9 x 8", 7 x 4 1/2 x 7 1/2 x 3 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 of 3 1/2" In Holds, &c. No. 1, 2, & 3 two of 3 1/2" No. 4 two of 3 1/2"  
 one of 3" in tunnel one of 3"  
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump & pumps 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 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 20/4/11 of Stern Tube 20/4/11 Screw shaft and Propeller 20/4/11  
 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 J. & S. Penner & Sons  
 Total Heating Surface of Boilers 6504 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 21/6/07 No. of Certificate 7517  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 58 1/2 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 11.04 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 1'-5" Mean dia. of boilers 14'-3 3/8" Length 11'-6" Material of shell plates steel  
 Thickness 1 5/16" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double rivet long. seams tub d. rivets Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/16" Lap of plates or width of butt straps 20 1/8"  
 Per centages of strength of longitudinal joint rivets 89.6 plate 85.4 Working pressure of shell by rules 206 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring McNeil No. and Description of Furnaces in each boiler 3 Horisons Material steel Outside diameter 3'-9 7/8"  
 Length of plain part top bottom Thickness of plates crown 9 1/16" bottom Description of longitudinal joint welded No. of strengthening rings  
 Working pressure of furnace by the rules 192 lbs Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1 5/16"  
 Pitch of stays to ditto: Sides 8 2/7" Back 8 2/7" Top 7 1/2" x 7 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 220 lbs  
 Material of stays steel Diameter at smallest part 1.45" Area supported by each stay 59 sq in Working pressure by rules 193 lbs End plates in steam space: Material steel Thickness 1 1/16" Pitch of stays 15 1/2" x 14" How are stays secured d. nuts Working pressure by rules 230 lbs Material of stays steel  
 Diameter at smallest part 5.27" Area supported by each stay 210 sq in Working pressure by rules 250 lbs Material of Front plates at bottom steel  
 Thickness 1" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 13 3/16" Working pressure of plate by rules 217 lbs  
 Diameter of tubes 2 1/2" Pitch of tubes 3 1/16" x 3 5/8" Material of tube plates steel Thickness: Front 1" Back 3/4" Mean pitch of stays 7 1/16"  
 Pitch across wide water spaces 13" Working pressures by rules 212 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 1/2" x 1 1/2" Length as per rule 30 1/16" Distance apart 7 1/2" Number and pitch of stays in each 3" of 7 1/4"  
 Working pressure by rules 188 lbs 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

**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
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
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:— 2 top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, 1 set of piston springs, a quantity of assorted bolts, nuts and iron. Spare propeller shaft 2 top end & 1 bottom end bearing &c.

The foregoing is a correct description,

FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED,

Manufacturer.

*Andrew Linn*

Dates of Survey while building	During progress of work in shops—	1907	May 9. 10. 13. 15. 27. 29. Jun. 3. 4. 12. 13. 19. 20. 21. Jul. 2. 4. 8. 11. Aug. 1. 9. 26. Sep. 3. 4. 24. Nov. 13. Dec.
	During erection on board vessel—	1908	Jan. 17. Feb. 26. Jun. 5. 15. Sep. 14. Nov. 5. Mar. 19. Apr. 20. 26. May 2. 4. 16. 20. Jun. 9. 10. 29. Jul. 5. 24. 25
	Total No. of visits	45	

Is the approved plan of main boiler forwarded herewith  Yes

Dates of Examination of principal parts—	Cylinders 3/6 & 4/7/07	Slides 4/7/07	Covers 11/7/07	Pistons 4/7/07	Rods 4/7 & 13/11/07
Connecting rods	4/7 & 13/11/07	Crank shaft 3/9/07 & 7/11/08	Thrust shaft 4/9/07 & 7/11/08	Tunnel shafts 26/8/07	Screw shaft 17/1/08
Propeller	26/2/08	Stern tube 26/2/08	Steam pipes tested 14/4/11	Engine and boiler seatings 2/5/11	Engines holding down bolts 16/5/11
Completion of pumping arrangements	29/6/11	Boilers fixed 4/5/11	Engines tried under steam 29/5/11		
Main boiler safety valves adjusted	29/5/11	Thickness of adjusting washers S 5 3/8" P 5/2" C 5 3/8" P 5/2" P S 3 3/8" P 5 1/2"			
Material of Crank shaft	Steel	Identification Mark on Do.	4/8/07 JTF	Material of Thrust shaft	Steel
Material of Tunnel shafts	Steel	Identification Marks on Do.	26/8/07	Material of Screw shafts	Steel
Material of Steam Pipes	Wrought iron	Test pressure	540 lbs	Identification Marks on Do.	26/11/07 JTF

**General Remarks** (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under special survey, the materials used are good and the workmanship is satisfactory. The engines and boilers have been properly fitted on board and secured, the safety valves have been adjusted and the engines tried under steam. In my opinion this vessel is eligible to have the record of + L.M.C. 7, 11.

The engines & boilers were built in 1907, before being fitted on board the engines and boilers were opened up examined and overhauled, in my opinion the machinery may be considered as new now.

After the trial trip, the vessel was placed in dry dock one broken blade of propeller removed, opposite blade to that found broken also renewed.

The amount of Entry Fee	£ 3	When applied for,	
Special	£ 43: 18	When received,	JUL 29 1911
Donkey Boiler Fee	£ 46: 18		
Travelling Expenses (if any)	£ :		578/19

*Charles Cooper & J. T. Fenby*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
Assigned  
FRI. AUG. 4 - 1911  
+ L.M.C. 7, 11



NEWCASTLE ON TYNE

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

ENGINEERING CERTIFICATE WRITTEN