

## REPORT ON MACHINERY

No. 10603.  
SAT.FEB.14.1914

Received at London Office

of writing Report 9<sup>th</sup> Feb. 1914 When handed in at Local Office 13-2-1914 Port of Antwerp  
 in Survey held at Seraing & Hoboken Date, First Survey 20<sup>th</sup> February 1913 Last Survey 5<sup>th</sup> February 1914  
 Book. 40 on the Steel twin screw steamer "Farr Michael Theodorowitch"  
 Master B. Schaga Built at Hoboken By whom built Sr. An. John Lockwill  
 Engines made at Seraing By whom made Sr. An. John Lockwill when made 1914  
 Boilers made at Seraing By whom made Sr. An. John Lockwill when made 1914  
 Registered Horse Power Owners Russian Steam Navigation & Trading Co. Port belonging to  
 a. Horse Power as per Section 28 417 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

GINES, &c.—Description of Engines Two—triple expansion No. of Cylinders 6 No. of Cranks 6  
 No. of Cylinders 16 16 16 Length of Stroke 31 1/2 Revs. per minute 160 Dia. of Screw shaft 9 3/32 Material of screw shaft Steel  
 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 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  
 are fitted, is the shaft lapped or protected between the liners Length of stern bush 4'-1 1/4"  
 a. of Tunnel shaft as per rule 8'-2 1/2 Dia. of Crank shaft journals as per rule 8'-6 1/2 Dia. of Crank pin 8'-8 1/2 Size of Crank webs 11 1/2 x 5 1/2 Dia. of thrust shaft under  
 lars 8'-8 1/2 Dia. of screw 11'-6 Pitch of Screw 9'-0 No. of Blades 4 State whether moveable yes Total surface 40'6" x 4'6"  
 of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 11 1/2 Can one be overhauled while the other is at work yes  
 of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 11 1/2 Can one be overhauled while the other is at work yes  
 of Donkey Engines Four Sizes of Pumps 8" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 4 of 3" In Holds, &c. No. 1 hold, 2 of 3" No. 2 hold, 2 of 3" No. 3  
 hold, 3 of 3" No. 4 hold, 1 of 3" Tunnel 2 of 2 1/2", Tunnel well, 1 of 2 1/2"  
 of Bilge Injections 2 sizes 7 1/2 Connected to condenser, or to circulating pump ca. p. Is a separate Donkey Suction fitted in Engine room & size 2 of 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 none  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both valves & cocks  
 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  
 Are all pipes 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 30-10-13 of Stern Tube 6-10-13 Screw Shaft and Propeller 30-10-13

the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from platform on main deck level  
 MILLERS, &c.—(Letter for record S) Manufacturers of Steel Thyssen & Co., Mülheim (Germany) & Sr. An. John Lockwill, Seraing.

Total Heating Surface of Boilers 9041 sq. ft. Is Forced Draft fitted no No. and Description of Boilers 4 single-ended  
 Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb. Date of test 15-7-13 No. of Certificate 33

Can each boiler be worked separately yes Area of fire grate in each boiler 71 sq. ft. No. and Description of Safety Valves to  
 each boiler Two, spring loaded Area of each valve 3-14 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 9" Mean dia. of boilers 15'-5 1/2" Length 10'-7 1/2" Material of shell plates Steel  
 Thickness 1 3/4" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. riv.

Long. seams 4 in. d. riv. Diameter of rivet holes in long. seams 1 3/4" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 1'-8 1/2"  
 Percentages of strength of longitudinal joint rivets 88.7 Working pressure of shell by rules 208 lb. Size of manhole in shell 16 3/4" x 12 1/2"  
 plate 84.8

Size of compensating ring 38" x 32 1/2" No. and Description of Furnaces in each boiler 3 can. (Mansard) Material Steel Outside diameter 4'-1 1/2"  
 Length of plain part top Thickness of plates crown 5/8" Description of longitudinal joint Welded No. of strengthening rings  
 bottom Thickness 5/8"

Working pressure of furnace by the rules 186 lb. Combustion chamber plates: Material Steel Thickness: Sides 1 1/2" Back 9/16" Top 1 1/2" Bottom 5/8"  
 Pitch of stays to ditto: Sides 7 7/8" Back 7 1/8" x 7 1/8" Top 8 1/2" x 7 1/8" If stays are fitted with nuts or riveted heads none Working pressure by rules 146 lb.

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 62 sq. in. Working pressure by rules 253 lb. End plates in steam space:  
 Material Steel Thickness 1 1/2" Pitch of stays 1 1/2" x 15 1/2" How are stays secured d. rivets Working pressure by rules 182 lb. Material of stays Steel

Diameter at smallest part 2 1/2" Area supported by each stay 275 sq. in. Working pressure by rules 219 lb. Material of Front plates at bottom Steel  
 Thickness 5/8" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 11 1/2" Working pressure of plate by rules 200 lb.

Diameter of tubes 3" Pitch of tubes 4 3/8" Material of tube plates Steel Thickness: Front 5/8" Back 9/16" Mean pitch of stays 8 1/2"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 194 lb. Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 9 1/2" - 1 1/2" Length as per rule 2'-7 1/2" Distance apart 8 3/4" Number and pitch of stays in each 3 - 7 1/2" 7 3/4" 64  
 Working pressure by rules 186 lb. 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  
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

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		When made	Where fixed
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 connecting rod bolts, 2 bottom-end bolts, 2 main bearing bolts, 6 coupling bolts, 1 set feed & bilge pump valves, H.P., M.P. & L.P. piston springs, a quantity of assorted bolts and nuts, iron of various sizes, 1 section of crankshaft, 1 screw shaft, 2 propeller blades, one set bottom end bearings, 4 top end bearings, 2 guide rods, 1 piston rod, 1 slide valve spindle, 1 air pump rod, 25 condenser tubes, 2 half main bearings & several other items.

The foregoing is a correct description,  
*Société Anonyme John Cockerill*  
*Le Secrétaire, L. D. Directeur Général*  
 Manufacturer.

Dates	During progress of work in shops	During erection on board vessel	Total No. of visits
1913.	Feb. 20, 24, 27. March 12, 14, 17, 18, 25. April 2, 5, 11, 19, 22, 28. May 8, 27, 30. June 24, 30. July 2, 15, 26, 30. Aug. 9, 14, 19, 27. Sept. 3, 10, 14.	1913. Sept. 6, 30. Oct. 4. Nov. 3, 17. Dec. 1. 1914. Jan. 3, 23. Feb. 4 & 5.	31 + 10

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

Dates of Examination of principal parts	Cylinders	Slides	Covers	Pistons	Rods
Connecting rods	19-9-13	Crank shaft	15-7-10	Thrust shaft	3-9-13
Stern tube	15-7-13	Steam pipes tested	3-17-11-13	Engine and boiler seatings	4-10-13
Completion of pumping arrangements	5-2-14	Boilers fixed	3-19-13	Engines tried under steam	5-2-14
Main boiler safety valves adjusted	5-2-14	Thickness of adjusting washers	All valves - $\frac{3}{8}$ "	Forward boilers	after boilers
Material of Crank shaft	Steel	Identification Mark on Do.	LLOYD'S	Material of Thrust shaft	Steel
Material of Tunnel shafts	Steel	Identification Marks on Do.	LLOYD'S	Material of Screw shafts	Steel
Material of Steam Pipes	Lapwelded iron, riveted flanges	Test pressure	540 lbs. per sq. in.		

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

The materials and workmanship are good.  
 The machinery has been made under Special Survey.  
 The engines and boilers have been satisfactorily fitted in the vessel, and afterwards tried under steam with satisfactory results.  
 The machinery of this vessel is now eligible, in our opinion, for record \* L.M.C. in the Register Book.

It is submitted that  
 this vessel is eligible for  
 THE RECORD. + LMC 2. 14.

The amount of Entry Fee	When applied for,
Special .. £ 1030. —	12/2/1914
Donkey Boiler Fee .. £ 54. —	When received, 14/07/80
Travelling Expenses (if any) £ 296.80.	5/10/14

Committee's Minute

FRI. FEB. 27. 1914

TUE. MAR. 3. 1914

Assigned

thine 2. 14

FRI. AUG. 28. 1914

*John Cockerill*  
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 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping

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 Foundation