

# REPORT ON MACHINERY.

No. 26829

Date of writing Report 16<sup>th</sup> Oct. 1913. When handed in at Local Office

Received at London Office

WED. OCT. 22, 1913

No. in Survey held at Hull.

Reg. Book.

Port of Hull.

Date, First Survey Apr 15<sup>th</sup> Last Survey Oct 13<sup>th</sup> 1913

20 Sup. on the steel se x. "Elf King."

(Number of Visits 25)

Gross 289

Net 115

Master Selly. Built at Selly. By whom built Boehraue & Sons Ltd When built 1913.

Engines made at Hull. By whom made C. W. Holmes & Co Ltd when made 1913.

Boilers made at Hull. By whom made C. W. Holmes & Co Ltd. when made 1913.

Registered Horse Power 79. Owners J. H. Robins & Co Ltd. Port belonging to Hull.

Nom. Horse Power as per Section 28 79. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted no.

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

Dia. of Cylinders 13"-22"-36" Length of Stroke 24" Revs. per minute as per rule 7.59. Material of screw shaft as fitted 7 3/4.

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 yes. 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 yes.

If two liners are fitted, is the shaft lapped or protected between the liners yes. Length of stern bush 3'-0"

Dia. of Tunnel shaft as per rule 6.78. Dia. of Crank shaft journals as per rule 7.11. Dia. of Crank pin 7 1/4. Size of Crank web 14" x 4 7/8." Dia. of thrust shaft under collars 7 1/4.

Dia. of screw 9-3. Pitch of Screw 10'-8" No. of Blades 4. State whether moveable no. Total surface 30 sq ft.

No. of Feed pumps 1. Diameter of ditto 2 1/4. Stroke 14 1/4. Can one be overhauled while the other is at work yes.

No. of Bilge pumps 1. Diameter of ditto 2 1/2. Stroke 14 1/4. Can one be overhauled while the other is at work yes.

No. of Donkey Engines One. Sizes of Pumps 6" x 4 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two. one 2" forward, one 2" aft. In Holds, &c. One. 2" to flush well. One 2" to fore peak. One 2 1/2" ejector from all suction.

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

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 Bilge 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 31.7.13. of Stern Tube 31.7.13. Screw shaft and Propeller 31.7.13.

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

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Messrs. Phoenix Alb. Horder Verein. of Horder.

Total Heating Surface of Boilers 1295. Is Forced Draft fitted no. No. and Description of Boilers One Single-ended.

Working Pressure 200lbs. Tested by hydraulic pressure to 400lbs. Date of test 10.9.13. No. of Certificate 2012.

Can each boiler be worked separately yes. Area of fire grate in each boiler 46. No. and Description of Safety Valves to each boiler 2. Spring-loaded.

Area of each valve 4.9. Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 7" Mean dia. of boilers 13'-6" Length 10'-6" Material of shell plates S.

Thickness 1 3/16" Range of tensile strength 29 tons. Are the shell plates welded or flanged no. Descrip. of riveting: cir. seams BRD.

long. seams ABS. J.R. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8" Lap of plates or width of butt straps 16 5/8."

Per centages of strength of longitudinal joint rivets 85 1/2% Working pressure of shell by rules 203. Size of manhole in shell 16" x 12"

Size of compensating ring 7" x 1 3/16" No. and Description of Furnaces in each boiler 3 plain. Material S. Outside diameter 38"

Length of plain part top 6' 5 1/2" bottom 6' 4" Thickness of plates crown 5/16" bottom 3/16" Description of longitudinal joint Welded. No. of strengthening rings yes.

Working pressure of furnace by the rules 212. Combustion chamber plates: Material S. Thickness: Sides 23/32" Back 23/32" Top 3/4" Bottom 23/32"

Pitch of stays to ditto: Sides 10 x 8. Back 10 x 8 1/2. Top 11 x 8. If stays are fitted with nuts or riveted heads no. Working pressure by rules 212.

Material of stays S. Area at smallest part 2.4. Area supported by each stay 0.062. Working pressure by rules 213. End plates in steam space:

Material S. Thickness 1 3/16" Pitch of stays 18 x 18. How are stays secured BRMS. Working pressure by rules 206. Material of stays S.

Area at smallest part 6.33. Area supported by each stay 324. Working pressure by rule 203. Material of Front plates at bottom S.

Thickness 15/16" Material of Lower back plate S. Thickness 29/32" Greatest pitch of stays 14 1/2 x 8 1/4. Working pressure of plate by rules 204.

Diameter of tubes 3 1/2" Pitch of tubes 5 1/2 x 5. Material of tube plates S. Thickness: Front 15/16" Back 7/8." Mean pitch of stays 10"

Pitch across wide water spaces 14 3/4 x 14 3/8. Working pressures by rules 315. Girders to Chamber tops: Material S. Depth and thickness of girder at centre 10 3/4 - 1 1/4. Length as per rule 2-11 3/8." Distance apart 11" Number and pitch of stays in each 3 at 8"

Working pressure by rules 203. 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	Description of Safety
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 end connecting rod bolts nuts, two main bearing bolts nuts, one set of coupling bolts nuts, one set each feed & bilge pump valves, Iron of various sizes, a quantity of assorted bolts nuts.*

The foregoing is a correct description,  
*P. PTO* **CHARLES D. HOLMES & CO. LTD.**  
 Manufacturer.

*Arthur Holmes* DIRECTOR  
 Dates of Survey while building: During progress of work in shops - 1913 - Apr 25, May 29, July 3, 10, 12, 25, 30, 31, Aug 8, 15, 16, 18, 19, 25, 29, 30, Sep 9  
 During erection on board vessel - Sep 10, 13, 16, 18, 19, Oct 2, 7, 13  
 Total No. of visits 25

Is the approved plan of main boiler forwarded herewith *Yes* **Ref. No. 26457**  
*donkey* **don't count down.**

Dates of Examination of principal parts—Cylinders *29.8.13*, Slides *29.8.13*, Covers *18.8.13*, Pistons *13.9.13*, Rods *13.9.13*, Connecting rods *18.8.13*, Crank shaft *9.9.13*, Thrust shaft *19.9.13*, Tunnel shafts ✓, Screw shaft *12.7.13*, Propeller *12.7.13*, Stern tube *12.7.13*, Steam pipes tested *2.10.13*, Engine and boiler seatings *31.7.13*, Engines holding down bolts *2.10.13*, Completion of pumping arrangements *2.10.13*, Boilers fixed *2.10.13*, Engines tried under steam *7.10.13*, Main boiler safety valves adjusted *7.10.13*, Thickness of adjusting washers *FV 7/16" AV 7/16"*, Material of Crank shaft *J*, Identification Mark on Do. *1168*, Material of Thrust shaft *S*, Identification Mark on Do. *1168*, Material of Tunnel shafts ✓, Identification Marks on Do. ✓, Material of Screw shafts *J*, Identification Marks on Do. *1168*, Material of Steam Pipes *Copper solid drawn*, Test pressure *400 lbs. hyd. press.*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The engines & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials and workmanship are sound & good. The boiler tested by hydraulic pressure, and with the engines secured on board and tested under steam, they are now in good order and safe-working condition, and respectfully submitted as being eligible in my opinion to be classed with the notation of +LMC 10.13 in the Register book.*

It is submitted that this vessel is eligible for **THE RECORD. + LMC 10.13.**

*J.W.D.*  
*07/10/13*  
*J.P.R.*

The amount of Entry Fee .. £ 1 : : When applied for,  
 Special .. £ 11 17 6 *21-10-13*  
 Donkey Boiler Fee .. £ : : When received,  
 Travelling Expenses (if any) £ : 2 9 *31/10/13*

*J.G. Mackillop*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. OCT. 24. 1913*  
 Assigned *+ Lmb 10.13*



Certificate (if required) to be sent to Hull

The Surveyors requested not to write on or before the space for Committee's Minute.