

## REPORT ON MACHINERY.

No. 22977

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Port of Hull

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No. in Survey held at *Hull & Goole* Date, first Survey *Apr 22<sup>nd</sup>* Last Survey *12<sup>th</sup> Sept 1910*  
 Reg. Book. *13* on the *Steel S. K. Tanager* (Number of Visits *28*)  
 Master *Goole* Built at *Goole* By whom built *Goole S. B. & R. Coy* Tons { Gross *192*  
 Engines made at } *Hull* By whom made } *Messrs* when made *1910*  
 Boilers made at } *Hull* By whom made } *Charles C. Ltd* when made *1910*  
 Registered Horse Power *55* Owners *Kelsall Bros & Buching Ltd* Port belonging to *Hull*  
 Nom. Horse Power as per Section 28 *55* 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 *12" ~ 21" ~ 33"* Length of Stroke *21"* Revs. per minute *130* Dia. of Screw shaft *as per rule 7.38"* Material of *Iron*  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No* 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 *Two separate liners* 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 *No* Length of stern bush *36"*  
 Dia. of Thrust shaft *as per rule 5.74"* Dia. of Crank shaft journals *as per rule 6.03"* Dia. of Crank pin *6 1/2"* Size of Crank webs *12 1/2" x 4 1/2"* Dia. of thrust shaft under  
 collars *6 1/2"* Dia. of screw *9" ~ 6"* Pitch of Screw *7" ~ 0"* No. of Blades *4* State whether moveable *No* Total surface *34 sq ft*  
 No. of Feed pumps *1* Diameter of ditto *2 1/2"* Stroke *10"* Can one be overhauled while the other is at work *—*  
 No. of Bilge pumps *1* Diameter of ditto *2 1/2"* Stroke *10"* Can one be overhauled while the other is at work *—*  
 No. of Donkey Engines *One* Sizes of Pumps *4 1/2" x 2 3/4" x 4"* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *One 2", One 2 1/2"* In Holds, &c. *One 2" to hold, Two 2" to tanks*  
 and ejector suction from these parts  
 No. of Bilge Injections *1* sizes *3 1/2"* Connected to condenser, or to circulating pump *pump* 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 *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 *tank and hold suction* How are they protected *Iron 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 *26.8.10* of Stern Tube *26.8.10* Screw shaft and Propeller *26.8.10*  
 Is the Screw Shaft Tunnel watertight *None* Is it fitted with a watertight door *—* worked from *—*

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Phoenix & Goode Westfalen*  
 Total Heating Surface of Boilers *900 sq ft* Is Forced Draft fitted *No* No. and Description of Boilers *1 cyl. Multi. Single Ended*  
 Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *8.4.10* No. of Certificate *1758*  
 Can each boiler be worked separately *—* Area of fire grate in each boiler *24.5 sq ft* No. and Description of Safety Valves to  
 each boiler *Two Spring* Area of each valve *3.14 sq in* Pressure to which they are adjusted *163 lbs* Are they fitted with easing gear *Yes*  
 Smallest distance between boilers or uptakes and bunkers or woodwork *11"* Mean dia. of boilers *10" ~ 6"* Length *9" ~ 6"* Material of shell plates *S*  
 Thickness *3/32"* Range of tensile strength *28 ~ 32* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *L. D.*  
 long. seams *D. B. S. D. R.* Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *5 3/8"* Lap of plates or width of butt straps *1 1/2"*  
 Per centages of strength of longitudinal joint *86.7* Working pressure of shell by rules *161 lbs* Size of manhole in shell *16" x 12"*  
 Size of compensating ring *4" x 3 1/2"* No. and Description of Furnaces in each boiler *Two plain* Material *S* Outside diameter *34"*  
 Length of plain part *6" ~ 4 1/2"* Thickness of plates *3/32"* Description of longitudinal joint *Welded* No. of strengthening rings *0*  
 Working pressure of furnace by the rules *176 lbs* Combustion chamber plates: Material *S* Thickness: Sides *5/8"* Back *2 1/2"* Top *5/8"* Bottom *5/8"*  
 Pitch of stays to ditto: Sides *8" x 9"* Back *9" x 10"* Top *9" x 7 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *165 lbs*  
 Material of stays *S* Diameter at smallest part *1 1/2"* Area supported by each stay *72 sq in* Working pressure by rules *196 lbs* End plates in steam space  
 Material *S* Thickness *7/8"* Pitch of stays *15" x 15"* How are stays secured *D. N* Working pressure by rules *161 lbs* Material of stays *S*  
 Diameter at smallest part *2 1/2"* Area supported by each stay *225 sq in* Working pressure by rules *194 lbs* Material of Front plates at bottom *S*  
 Thickness *7/8"* Material of Lower back plate *S* Thickness *7/8"* Greatest pitch of stays *14" x 9"* Working pressure of plate by rules *191 lbs*  
 Diameter of tubes *3"* Pitch of tubes *4 5/8" x 4 3/8"* Material of tube plates *S* Thickness: Front *7/8"* Back *13/16"* Mean pitch of stays *9"*  
 Pitch across wide water spaces *14"* Working pressures by rules *160 lbs* Girders to Chamber tops: Material *S* Depth and  
 thickness of girder at centre *7 1/2" x 1 1/2"* Length as per rule *2" ~ 3 1/2"* Distance apart *7 1/2"* Number and pitch of stays in each *Two 9"*  
 Working pressure by rules *226 lbs* Superheater or Steam chest; how connected to boiler *rust* Can the superheater be shut off and the boiler worked  
 separately *No* Diameter *2' ~ 6"* Length *2' ~ 6"* Thickness of shell plates *5/8"* Material *S* Description of longitudinal joint *L. D.* Diam. of rivet  
 holes *1* Pitch of rivets *3 1/4"* Working pressure of shell by rules *270 lbs* 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 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  
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays Plates  
 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 each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each air circulating, feed & bilge pump valves, and a quantity of assorted bolts, nuts etc  
 The foregoing is a correct description,  
 Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1910:— May 10. 23. 28. Jun 2. 7. 9. 13. 16. July 4. 5. 8. 11. 15. 18. 19. 20. 21. Aug 3. 6. 22. 24. 25  
 During erection on board vessel— Aug 26. 29 Sep. 1. 2. 7. 12.  
 Total No. of visits 28—  
 Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 20. 7. 10 Slides 20. 7. 10 Covers 20. 7. 10 Pistons 20. 7. 10 Rods 20. 7. 10  
 Connecting rods 20. 7. 10 Crank shaft 5. 7. 10 Thrust shaft 24. 8. 10 Tunnel shafts Screw shaft 24. 8. 10 Propeller 24. 8. 10  
 Stern tube 24. 8. 10 Steam pipes tested 1. 9. 10 Engine and boiler seatings 24. 8. 10 Engines holding down bolts 2. 9. 10  
 Completion of pumping arrangements 12. 9. 10 Boilers fixed 2. 9. 10 Engines tried under steam 12. 9. 10  
 Main boiler safety valves adjusted 12. 9. 10 Thickness of adjusting washers 3/8" bare

Material of Crank shaft 5 Identification Mark on Do. 2523 HOD Material of Thrust shaft 5 Identification Mark on Do. 3722 W.R.  
 Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts I Identification Marks on Do. 3722 W.R.  
 Material of Steam Pipes Solid drawn copper Test pressure 400 lbs per sq inch

General Remarks (State quality of workmanship, opinions as to class, &c. The engines and boiler of this vessel have been constructed under special survey in accordance with the Rules, the materials & workmanship are 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 L.M.C. 9. 10 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9. 10.

The amount of Entry Fee. £ 1 : : When applied for. 15. 9. 10  
 Special .. £ 8 : 5 :  
 Donkey Boiler Fee .. £ : : When received, 26. 9. 10  
 Travelling Expenses (if any) £ : 9 : 1 : 27. 9

Committee's Minute

Assigned

MACHINERY CERTIFICATE

WRITTEN.

James Barclay  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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