

# REPORT ON MACHINERY.

No. 17502

Port of Knull

Received at London Office JAN 23 1906

No. in Survey held at Knull & Goole Date, first Survey June 15<sup>th</sup> Last Survey Jan 16<sup>th</sup> 1906  
 Reg. Book. 31 on the Screw Trawler "Raven" (Number of Visits 22) Tons { Gross 172 Net 52  
 Master Goole Built at Goole By whom built Goole S & R Co. Ltd. When built 1906  
 Engines made at Knull By whom made Earle's S & G. Co. Ltd. when made 1906  
 Boilers made at do By whom made do when made 1906  
 Registered Horse Power 51 Owners Kelsall Bros & Beeching, Ltd. Port belonging to Knull  
 Nom. Horse Power as per Section 28 51 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 12, 18, 30" Length of Stroke 21" Revs. per minute 105 Dia. of Screw shaft 6.8" Material of screw shaft 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 ✓ 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 Yes Length of stern bush 2-9 1/2"  
 Dia. of Tunnel shaft 5.56" as per rule 5.85" Dia. of Crank shaft journals 6" as per rule 6" Dia. of Crank pin 6" Size of Crank webs 12x3 3/4" Dia. of thrust shaft under collars 6 1/2" Dia. of screw 8-6" Pitch of screw 10-0" No. of blades 4 State whether moveable No Total surface 24 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" x 2 3/4" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room One 2" dia. In Holds, &c. One 2" dia.  
Ejector suction from all bilges & discharge on deck.  
 No. of bilge injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump Cond. Is a separate donkey suction fitted in Engine room & sized 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 ✓  
 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 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  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launch the screw shaft tunnel watertight None  
 Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.— (Letter for record (5)) Total Heating Surface of Boilers 900 sq. ft. Is forced draft fitted No  
 No. and Description of Boilers One S.E. Cyl. Mult. Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs  
 Date of test 19.12.05 Can each boiler be worked separately ✓ Area of fire grate in each boiler 24 1/2 sq. ft. No. and Description of safety valves to each boiler Two direct spring Area of each valve 3.14" Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Ext. dia. of boilers 10-6" Length 9-6" Material of shell plates Steel  
 Thickness 27/32" Range of tensile strength 28-32 Are they welded or flanged No Descrip. of riveting: cir. seams DR Lap long. seams DR S.S. Rivets  
 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 5 3/8" Lap of plates or width of butt straps 11 1/2"  
 Per centages of strength of longitudinal joint rivets 87.6 Working pressure of shell by rules 160 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 2-6" x 2-4" x 27/32" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 2-10"  
 Length of plain part top 6-4 1/2" bottom 5-11" Thickness of plates crown 2 1/32" bottom 2 1/32" Description of longitudinal joint Welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 177 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 2/32" Top 5/8" Bottom 5/8"  
 Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 10" x 9" Top 8 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 165 lbs  
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 72 1/4" Working pressure by rules 194 lbs End plates in steam space:  
 Material Steel Thickness 7/8" Pitch of stays 15" x 15" How are stays secured Nuts Working pressure by rules 161 lbs Material of stays Steel  
 Diameter at smallest part 2 5/16" Area supported by each stay 225" Working pressure by rules 187 lbs Material of Front plates at bottom Steel  
 Thickness 7/8" Material of Lower back plate Steel Thickness 2 3/4" Greatest pitch of stays 16" x 10" Working pressure of plate by rules 278 lbs  
 Diameter of tubes 3" Pitch of tubes 4 5/8" x 4 3/8" Material of tube plates Steel Thickness: Front 7/8" Back 13/16" Mean pitch of stays 9 1/4" x 8 3/4"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 161 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 1/4" x 1 1/2" Length as per rule 2-2" Distance apart 7 1/2" Number and pitch of Stays in each 2 @ 8 1/2"  
 Working pressure by rules 228 lbs Superheater or Steam chest; how connected to boiler Riveted 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 Steel Description of longitudinal joint DR Lap Diam. of rivet holes 1" Pitch of rivets 3 1/4" Working pressure of shell by rules 343 lbs Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
 If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness 5/8" How stayed Dished  
 Working pressure of end plates 280 lbs Area of safety valves to superheater ✓ Are they fitted with easing gear ✓



**DONKEY BOILER—** No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_  
 No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ 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 \_\_\_\_\_ Plates \_\_\_\_\_ 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 \_\_\_\_\_  
 Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied: *Two top & two bottom-end connecting rod bolts & nuts. Two main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Main & donkey feed check valves. Assorted bolts & nuts &c.*

The foregoing is a correct description,

*F. H. Palthorpe* Manufacturer.

SECRETARY  
 Dates of Survey while building { During progress of work in shops - - } 1905: June 15. 23. Sep. 5. 12. 14. 25. Oct. 2. 4. 18. 20. 28. Nov. 6. 10. 21. 28. Dec. 1.  
 { During erection on board vessel - - } Dec. 8. 19. 21. 22. 1906: Jan. 9. 16.  
 Total No. of visits 22

Is the approved plan of main boiler forwarded home with R/L no. 17405  
 " " " donkey " " " (P. Reeve)

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

*The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in my opinion eligible to have the notation of + L M C 1.06 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD H L M C 1.06.

*P. H. S.*  
 23.1.06.  
*R. S.*  
 23.1.06

Certificate (if required) to be sent to \_\_\_\_\_

The amount of Entry Fee. £ 1 : - : - :  
 Special . . . . . £ 8 : - : - :  
 Donkey Boiler Fee . . . . . £ - : - : - :  
 Travelling Expenses (if any) £ - : 3 : - :  
 When applied for, 20/1/06  
 When received, 6/3/06

*B. R. Stewart*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute \_\_\_\_\_ FRI. 26 JAN 1906  
 Assigned \_\_\_\_\_ + L M C 1.06

MACHINERY CERTIFICATE WRITTEN.



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