

# REPORT ON MACHINERY.

No. 17965

TUES. 5 JUN 1906

Port of Hull Received at London Office \_\_\_\_\_

No. in Survey held at Hull Date, first Survey Dec 9/05 Last Survey 30<sup>th</sup> May 1906  
 Reg. Book. \_\_\_\_\_ (Number of Visits 25)

on the Steel S.S. K. "North King" Tons { Gross 271 Net 96  
 Master \_\_\_\_\_ Built at Hull By whom built Earle's S. & C. Co. Ltd. When built 1906

Engines made at Hull By whom made Earle's S. & C. Co. Ltd. when made 1906  
 Boilers made at do By whom made do when made 1906

Registered Horse Power \_\_\_\_\_ Owners J.A. Robins & Co. Ltd. Port belonging to Hull  
 Nom. Horse Power as per Section 28 77.6 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 3/4", 22", 36" Length of Stroke 24" Revs. per minute 110 Dia. of Screw shaft as per rule 7.45 Material of screw shaft Iron  
 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 2'-10 1/2"  
 Dia. of Propeller shaft as per rule 6.7" Dia. of Crank shaft journals as per rule 7" Dia. of Crank pin 7 1/2" Size of Crank webs 14" x 4 3/8" Dia. of thrust shaft under collars 7 1/2" Dia. of screw 9'-0" Pitch of Screw 11'-6" No. of Blades 4 State whether moveable No Total surface 27 sq. ft.  
 No. of Feed pumps One Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps One Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines Two Sizes of Pumps 6" x 3" x 6" 6" x 6" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 - 2" & one 3" In Holds, &c. One each 2" to each slush well, fore hold, & aft suction from Eng. Room bilge & slush wells  
 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 & size Yes 3  
 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 Yes  
 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 hold 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 5.4.06 of Stern Tube 5.4.06 Screw shaft and Propeller 5.4.06  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**—(Letter for record (5)) Manufacturers of Steel Hoerder & Co., Germany  
 Total Heating Surface of Boilers 1260 sq. ft. Forced Draft fitted No No. and Description of Boilers One S.E. Cyl. Mult.  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 16.5.06 No. of Certificate 1443  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 44 sq. ft. No. and Description of Safety Valves to each boiler Two Spring Area of each valve 4.9 sq. in. Pressure to which they are adjusted 204 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 7' Int. dia. of boilers 13'-0" Length 10'-6" Material of shell plates Steel  
 Thickness 1 3/16" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams BR. Lap long. seams BR. 5 Straps Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 7 1/16" Lap of plates or width of butt straps 17 1/2"  
 Per centages of strength of longitudinal joint rivets 90 Working pressure of shell by rules 202 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 3'-4" x 2'-6" x 1 3/16" No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 3'-1"  
 Length of plain part top 6'-2" bottom 5'-8" Thickness of plates crown 3/4" bottom 3/4" Description of longitudinal joint welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 204 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 5/8" Top 1/16" Bottom 1/16"  
 Pitch of stays to ditto: Sides 9 1/2" x 8" Back 8" x 7 3/8" Top 8" x 7 5/8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 212 lbs  
 Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 76" Working pressure by rules 245 lbs End plates in steam space: Material Steel Thickness 1 3/16" Pitch of stays 7 3/4" x 15 1/4" How are stays secured By nuts & screwed into end plates Working pressure by rules 243 lbs Material of stays Steel diameter at smallest part 2 13/16" Area supported by each stay 270" Working pressure by rules 230 lbs Material of Front plates at bottom Steel thickness 1" Material of Lower back plate Steel Thickness 3/8" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 200 lbs  
 diameter of tubes 3 1/4" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates Steel Thickness: Front 1" Back 2 3/8" Mean pitch of stays 9 3/2"  
 pitch across wide water spaces 14" Working pressures by rules 210 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2" x 1 3/4" Length as per rule 2'-11" Distance apart 7 5/8" Number and pitch of stays in each 3 @ 8"  
 Working pressure by rules 216 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivets ✓ 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				
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 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		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, circula feed bilge pump valves, and a quantity of assorted bolts nuts etc.

The foregoing is a correct description,

FOR EARLE'S

Manufacturer.

SHIPBUILDING & ENGINEERING CO. LIMITED

*F. J. Palethorpe* SECRETARY  
 Dates of Survey while building: During progress of work in shops - 1905: Dec 9, 19, 1906: Jan 20, Feb 7, 13, 22, Mar 5, 9, 16, 22, 29, 30, Apr 5, 24.  
 During erection on board vessel - May 3, 8, 10, 15, 18, 19, 21, 23, 24, 25, 30.  
 Total No. of visits 25

Is the approved plan of main boiler forwarded herewith *yes*  
 " " " donkey " " " *✓*

Dates of Examination of principal parts—Cylinders 19/12/05 Slides Feb 7/06 Covers 7/2/06 Pistons 22/2/06 Rods 22/2/06  
 Connecting rods 22/2/06 Crank shaft 20/1/06 Thrust shaft 20/1/06 Tunnel shafts Screw shaft 20/1/06 Propeller 9/3/06  
 Stern tube 9/3/06 Steam pipes tested 22 5 06 Engine and boiler seatings 5 4 06 Engines holding down bolts 15 5 06  
 Completion of pumping arrangements 29 5 06 Boilers fixed 20 5 06 Engines tried under steam 30 5 06  
 Main boiler safety valves adjusted 24 5 06 Thickness of adjusting washers Port 5/16" Starboard 3/8"  
 Material of Crank shaft Iron Identification Mark on Do. S.A.H. 445 Material of Thrust shaft Steel Identification Mark on Do. LLOYDS N° 1361 AH 12-05 N° 46  
 Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Iron Identification Marks on Do. S.A.H. 46  
 Material of Steam Pipes Solid drawn Copper Test pressure 400 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. The engines and boiler of this vessel have been inspected during construction in accordance with the Society's Rules. The material & workmanship are good. The boilers tested by hydraulic pressure, and with the engines placed on board, & tested under steam they are now in good order & safe working condition, and respectfully submitted as being eligible in our opinion to be classed with the notation of *L.M.C. 5.06* in the Register Book.

Attached herewith, are Logg<sup>r</sup> Rpts. on crank, thrust, screw shaft letter from owners re feed pumps, and advice notes, for furnace boiler plates, engine steel castings.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 5.06

The amount of Entry Fee	£ 1 : . . . .	When applied for	
Special	£ 11 : 14 : . . . .	When received	1906
Donkey Boiler Fee	£ . . . . .		
Travelling Expenses (if any)	£ . . . . .		1906

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

Committee's Minute WED. 6 JUN 1906  
 Assigned *L.M.C. 5.06*

MACHINERY CERTIFICATE WRITTEN.

