

Rpt. 4.

## REPORT ON MACHINERY.

No. 25369

Date of writing Report 3-8-1912 When handed in at Local Office 6-8-1912 Port of Sunderland  
 No. in Survey held at Sunderland Date, First Survey 29 February Last Survey 2-8-1912  
 Reg. Book. on the Mackay Bros & Co. steel S/S "NESTOR" (Number of Visits 23)  
 Master I. Prahm Built at Alloa By whom built Mackay Bros Tons Gross 1120 Net 862  
 Engines made at Sunderland By whom made Macboll & Pollock Ltd (No 234) when made 1912  
 Boilers made at Sunderland By whom made Macboll & Pollock Ltd (No 234) when made 1912  
 Registered Horse Power Owners Port belonging to Bremen  
 Nom. Horse Power as per Section 28 153 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 18", 29", 48" Length of Stroke 33" Revs. per minute 75 Dia. of Screw shaft as per rule 10.45" as fitted 11" Material of screw shaft steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liner Is the after end of the liner made water tight in 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 liners are fitted, is the shaft lapped or protected between the liners bedwood gland fitted ✓ Length of stern bush 3'-9 3/4"  
 Dia. of Tunnel shaft as per rule 8.35" 8.95" as fitted 9.4" Dia. of Crank shaft journals as per rule 8.45" 8.39" as fitted 9.5" Dia. of Crank pin 9 5/8" Size of Crank webs 13 1/2" x 6 3/8" Dia. of thrust shaft under collars 9 5/8" Dia. of screw 13.0" Pitch of Screw 14.6" No. of Blades 4 State whether moveable no Total surface 62.6 #  
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 14 1/2" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 14 1/2" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps Ballast 6 1/2" x 8 1/2" x 8" Feed 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two @ 2 1/4" S.D. One @ 2 1/4" Port & 10 1/2" In Holds, &c. Forehold - 2 @ 2 1/4" After hold - 2 @ 2 1/4" & 1 @ 2 1/2" in well Tunnel well - 1 @ 2 1/2" Dry Tank (centre) 1 @ 2 1/2"  
 No. of Bilge Injections 1 sizes 4 1/2" Connected to condenser, or to circulating 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 brch  
 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 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 31.5.12 of Stern Tube 14.7.12 Screw shaft and Propeller 14.7.12  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform

OILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons Limited  
 Total Heating Surface of Boilers 2484 # Is Forced Draft fitted no No. and Description of Boilers One single ended  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 14.7.12 No. of Certificate 3029  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 65.6 # No. and Description of Safety Valves to each boiler two direct spring Area of each valve 9.62 # Pressure to which they are adjusted 185 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 16.3" Length 10.9" Material of shell plates steel  
 Thickness 1 3/8" Range of tensile strength 28.2-35 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR  
 Long. seams TR, DBS Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20 7/8"  
 Percentages of strength of longitudinal joint rivets 92.4 plate 84.8 Working pressure of shell by rules 195 Size of manhole in shell 16 x 12  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Weymouth Material steel Outside diameter 4.4"  
 Length of plain part top 15" bottom 15" Thickness of plates crown 5/8" Description of longitudinal joint welded No. of strengthening rings 3  
 Working pressure of furnace by the rules 193 Combustion chamber plates: Material steel Thickness: Sides 5/8" centre 5/8" Back 5/8" Top 5/8" Bottom 15/16"  
 Pitch of stays to ditto: Sides 7 1/2" x 9 1/4" Back 8 x 8 Top 8 x 8 If stays are fitted with nuts or riveted heads nuts in ends Working pressure by rules 212  
 Material of stays steel Diameter at smallest part 1 1/2" Area supported by each stay 68.25" Working pressure by rules 181 & 195 End plates in steam space: Material steel Thickness 1 1/8" Pitch of stays 14 x 15 3/8" How are stays secured Weymouth Working pressure by rules 228 Material of stays steel  
 Diameter at smallest part 5/16" Area supported by each stay 2610" Working pressure by rules 205 Material of Front plates at bottom steel  
 Thickness 7/8" Material of Lower back plate steel Thickness 13/16" Greatest pitch of stays 13 1/8" x 8" Working pressure of plate by rules 83  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 7/8" Back 13/16" Mean pitch of stays 11 1/4"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 253 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 2 @ 7 1/4" x 13/16" Length as per rule 28 1/2" Distance apart 8" Number and pitch of stays in each 2 @ 8"  
 Working pressure by rules 198 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 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

W198-0221



# 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 \_\_\_\_\_ 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 connecting rods top and bottom end bearings, bolts and nuts. Two main bearing bolts and nuts. One set of coupling bolts and nuts. One set of feed and bilge pump valves. Half set of air and circulating pump valves & quarter set for each donkey pump. Iron and bolts of various sizes. One propeller. One air and one circulating pump rod one slide rod and one front and one back pump link.

The foregoing is a correct description,

**WILL & POLLOCK LTD**

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1912 Feb. 29 Mar. 18, 25 Apr. 24 May 6, 13, 29 Jun 9, 10, 12, 18, 19, 24 Jul 2, 3, 10, 7

{ During erection on board vessel -- } 20, 23, 26, 30, 31 Aug 2.

Total No. of visits 23

Is the approved plan of main boiler forwarded herewith

yes  
yes

Dates of Examination of principal parts—Cylinders 25-3-12 Slides 3-7-12 Covers 13-5-12 Pistons 20-5-12 Rods 10-6-12

Connecting rods 26-6-12 Crank shaft 6-3-12 Thrust shaft 13-5-12 Tunnel shafts 13-5-12 Screw shaft 29-5-12 Propeller 29-5-12

Stern tube 10-7-12 Steam pipes tested 23-7-12 Engine and boiler seatings 31-5-12 Engines holding down bolts 23-7-12

Completion of pumping arrangements 30-7-12 Boilers fixed 26-7-12 Engines tried under steam 31-7-12

Main boiler safety valves adjusted 2-8-12 Thickness of adjusting washers both 1/2"

Material of Crank shaft Steel Identification Mark on Do. 2451HS Material of Thrust shaft Steel Identification Mark on Do. 7370KH

Material of Tunnel shafts Steel Identification Marks on Do. 7368-9-11KH Material of Screw shafts Steel Identification Marks on Do. 7367KH

Material of Steam Pipes lapwelded steel 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 and is eligible in our opinion for classification, and the record + LMC 8.12

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.12

The amount of Entry Fee .. £ 2 : - : When applied for, 29/7/12

Special .. £ 22 : 19 : When received, 12/8/12

Donkey Boiler Fee .. £ : : 12/8/12

Travelling Expenses (if any) £ : 12 : 24/9/12

Committee's Minute FRI. AUG. 16. 1912

Assigned

**Lewis & Davis**

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



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Lloyd's Register Foundation

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