

# REPORT ON MACHINERY.

Received at London Office

Date of writing Report 2/7 May 1908 When handed in at Local Office 1908 Port of Falmouth  
 No. in Survey held at Falmouth Date, First Survey 16<sup>th</sup> Nov 1904 Last Survey 16<sup>th</sup> May 1908  
 Reg. Book Falmouth (Number of Visits 122)  
76 on the Twin Screw Ferry Boat "The Mer" Cox & Co L. S. No. 128  
 Master J. Boxell Built at Falmouth By whom built Cox & Co Tons { Gross 117.00  
 Engines made at Falmouth By whom made Cox & Co when made 1908 Net 52.65  
 Boilers made at Falmouth By whom made Cox & Co when made 1908 When built 1908-4  
 Registered Horse Power 60 Owners Great Western Railway Co Port belonging to London  
 Nom. Horse Power as per Section 28 36.5 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Inverted Compound Surface Condensing No. of Cylinders 2 No. of Cranks 2  
 Dia. of Cylinders 10", 20" Length of Stroke 12" Revs. per minute 180 Dia. of Screw shaft as per rule 4 1/4" Material of screw shaft Steel  
 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 Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 14"  
 Dia. of Tunnel shaft as per rule 3 1/16" Dia. of Crank shaft journals as per rule 3 7/8" Dia. of Crank pin 4 1/4" Size of Crank webs 8" x 2 1/2" Dia. of thrust shaft under  
 collars 4 1/4" Dia. of screw 4-8" Pitch of Screw 9-6" No. of Blades 3 State whether moceable No. Total surface 9 1/2 sq ft  
 No. of Feed pumps one Diameter of ditto 4" Stroke 8" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps Two Diameter of ditto 1 3/8" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines one Duplex Sizes of Pumps 3" Diam 5" Stroke No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3. 2" In Holds, &c. 2-2" one to the fore, and one to  
the after compartments and connected to the main and donkey engines  
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size Yes, 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 Yes  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves & Cocks  
 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 8-5-08 of Stern Tube 2-5-08 Screw shaft and Propeller 2-5-08  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Deck

BOILERS, &c.—(Letter for record AT) Manufacturers of Steel Plate, Iron, Brass, &c. Limited  
Plate, Lancashire Steel Co. Farnworth  
 Total Heating Surface of Boilers 750 sq ft Is Forced Draft fitted No. No. and Description of Boilers one cylindrical Multitubular  
 Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbs Date of test 30-3-08 No. of Certificate 128  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 26 sq ft No. and Description of Safety Valves to  
 each boiler Two, One's Lipped Spring Area of each valve 3.976 Pressure to which they are adjusted 130 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 5" Mean dia. of boilers 7-3" Length 10.6" Material of shell plates Steel  
 Thickness 5/8" Range of tensile strength 28 to 32 Tons Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Double Riveted  
 long. seams Double Riveted Diameter of rivet holes in long. seams 7/8" Pitch of rivets 3 3/4" Lap of plates or width of butt straps 9"  
 Per centages of strength of longitudinal joint rivets 76.4 Working pressure of shell by rules 193 Size of manhole in shell 16" x 14"  
 plate 76.70  
 Size of compensating ring See Skils No. and Description of Furnaces in each boiler Two, Plain Material Steel Outside diameter 3-0  
 Length of plain part top 4-10" Thickness of plates crown 17/32" Description of longitudinal joint Double Riveted No. of strengthening rings ✓  
 bottom 17/32" Working pressure of furnace by the rules 145.2 Combustion chamber plates: Material Steel Thickness: Sides 2 1/32" Back plate 2 1/32" Top 2 1/32" Bottom 2 3/32"  
 Pitch of stays to ditto: Sides 12 3/4 x 8" Back 12 3/4 x 8" Top 12 3/4 x 8" If stays are fitted with nuts or riveted heads each end Working pressure by rules 137.8  
 Material of stays Steel Diameter at smallest part 1 7/8" Area supported by each stay 2 3/4 x 4 1/2" Working pressure by rules 138 End plates in steam space:  
 Material Steel Thickness 1 1/16" Pitch of stays 15" x 13" How are stays secured Double Riveted Working pressure by rules 135 Material of stays Steel  
 Diameter at smallest part 2.09 Area supported by each stay 15" x 12" Working pressure by rules 175 Material of Front plates at bottom Steel  
 Thickness 1 1/16" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays Back tube plate Working pressure of plate by rules  
 Diameter of tubes 2" Pitch of tubes 3" x 2 1/8" Material of tube plates Steel Thickness: Front 1 1/16" Back 5/8" Mean pitch of stays 8 13/16"  
 Pitch across wide water spaces ✓ Working pressures by rules ✓ Girders to Chamber tops: Material ✓ Depth and  
 thickness of girder at centre ✓ Length as per rule ✓ Distance apart ✓ Number and pitch of stays in each ✓  
 Working pressure by rules ✓ 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 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 Connecting Rods Top, and Two Bottoms and Bolts and Nuts, Two Main Bearing Studs, Two sets of Coupling Bolts, one set of Air, Circulating, Feed, Bridge and Gears, Landing Engine Valves, one H.P. Bucket and Rod, one L.P. Bucket and Rod, one Feed Pump Bucket and Rod, one set of Piston Packing Rings for the H.P. and L.P. Pistons, 10 Boiler Tubes, 20 Condenser Tubes, and Fessulas, The foregoing is a correct description, 1 Safety Valve Spair, 12 Fire Bars, 100 assorted Bolts and Nuts, 1 set of various sizes, one set of Top End and one Bottom End of various sizes, one set of bottom end plates,*  
*Coo & Co* Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *From the 16<sup>th</sup> November 1907 to 2<sup>nd</sup> April 1908*  
 { During erection on board vessel - - } *From the 2<sup>nd</sup> April to the 16<sup>th</sup> May 1908*  
 Total No. of visits *122* Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " *✓*

Dates of Examination of principal parts—Cylinders *1-4-08* Slides *1-4-08* Covers *1-4-08* Pistons *1-4-08* Rods *30-3-08*  
 Connecting rods *30-3-08* Crank shaft *2-4-08* Thrust shaft *2-4-08* Tunnel shafts *2-4-08* Screw shaft *2-4-08* Propeller *2-5-08*  
 Stern tube *2-5-08* Steam pipes tested *22-4-08* Engine and boiler seatings *31-3-08* Engines holding down bolts *14-4-08*  
 Completion of pumping arrangements *28-3-08* Boilers fixed *5-5-08* Engines tried under steam *6-5-08*  
 Main boiler safety valves adjusted *29-4-08* Thickness of adjusting washers *Standard 1/32, Pist 7/32*  
 Material of Crank shaft *Pin and Bearing Steel* Identification Mark on Do. *Standard 930* Material of Thrust shaft *Steel* Identification Mark on Do. *S. No 930*  
 Material of Tunnel shafts *Iron* Identification Marks on Do. *S. No 930* Material of Screw shafts *Iron* Identification Marks on Do. *S. No 930*  
 Material of Steam Pipes *Standard Copper* Test pressure *Steam Pipes 350 lbs, Feed Pipes 400 lbs,*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Steam and Feed Pipes have been tested in my presence to 350 and 400 lbs per inch, The Safety Valves are set to relieve at 130 lbs pressure with no apparent accumulation, At the trial the Engines worked well and efficiently with no signs of heated Bearings, The Condenser, Air and Circulating Pumps have been supplied by Washington Duplex Pump by Hayward Lylos & Co Feed Pump by G & J. Wise, Myers Patent Propellers have been fitted, The Piston Rods are packed with the United States Metallic Packing, Every thing being fitted in accordance with the Rules and Instructions I am of opinion that the Machinery is fit for classification in the Society's Register Book, and beg to Recommend for the Committee's approval that a Machinery Certificate be granted and the notation of **+LMC 5.08** made in the Register Book.*)

It is submitted that this vessel is eligible for THE RECORD. **+LMC 5.08.** ELEC LIGHT.

The amount of Entry Fee. £ 1 : 0 : \_\_\_\_\_ When applied for, \_\_\_\_\_  
 Special . . . . . £ 8 : 0 : *21-5-1908*  
 Donkey Boiler Fee . . . . . £ : : \_\_\_\_\_ When received, \_\_\_\_\_  
 Travelling Expenses (if any) £ : : *21-5-1908*

*P. H. Cooper* 25.5.08  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 26 MAY 1908**

Assigned *Home 5.08*

MACHINERY CERTIFICATE WRITTEN.



© 2020

Lloyd's Register Foundation

Certificate (if required) to be sent to this Office (The Surveyors are requested not to write on or below the space for Committee's Minute.)