

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 2/7 May 1908 When handed in at Local Office 19 Port of Falmouth
 No. in Survey held at Falmouth Date, First Survey 16th Nov 1907 Last Survey 16th May 1908
 Reg. Book T. 128 on the Twin Screw Steamer "The Mer" Cox & Co. L. S. No. 128 (Number of Visits 122)
 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
 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 Suction Beam 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 4 1/4" Material of { Steel
 as fitted 4 1/4" screw shaft)
 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 17"
 Dia. of Tunnel shaft 3 1/16" Dia. of Crank shaft journals 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 moveable 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 after compartment 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
St. Helens, Lancashire No. and Description of Boilers one cylindrical Multitubular
 Total Heating Surface of Boilers 750 sq ft Is Forced Draft fitted No 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 Lifting 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 76-4 Working pressure of shell by rules 193 Size of manhole in shell 16" x 14"
 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 4-10" Thickness of plates 1 7/32" Description of longitudinal joint Single Riveted No. of strengthening rings ✓
 Working pressure of furnace by the rules 145.2 Combustion chamber plates: Material Steel Thickness: Sides 2 1/32" Back 2 1/32" Top 2 1/32" Bottom 3 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 7/4" 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 1/4" 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 5 1/8" 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, and Two Bottom End Bolts and Nuts, Two Main Bearing Studs, Two sets of Coupling Bolts, one set of Air, Circulating, Feed, Bridge and Gudgeon Engine Valves, one A.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. Driller Tubes, 20 Condenser Tubes, and 20 Tubes, The foregoing is a correct description, 1 Safety Valve Spindle, 12 Fire Bars, 100 assorted Bolts and Nuts, 1 set of various sizes, one set of Top End and one Bottom End and Plates,*

Cox & Co Manufacturer.

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

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, Port 7/32*
 Material of Crank shaft *Phos and Bearing Steel* Identification Mark on Do. *Phos 931* Material of Thrust shaft *Steel* Identification Mark on Do. *Phos 931*
 Material of Tunnel shafts *Phos* Identification Marks on Do. *Phos 930* Material of Screw shafts *Phos* Identification Marks on Do. *Phos 931*
 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 J & J. Wise, Myers's 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 + L M C 5.08 made in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5.08. ELEC LIGHT.

The amount of Entry Fee. £ 1 : 0 : When applied for,
 Special £ 8 : 0 : 2/- 5/- 1908
 Donkey Boiler Fee £ : : When received,
 Travelling Expenses (if any) £ : : 2/- 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 *+ L M C 5.08*

MACHINERY CERTIFICATE WRITTEN.



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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.)