

REPORT ON MACHINERY.

No. 70543

Date of writing Report 10th Dec 1917 When handed in at Local Office 13th Dec 1917 Port of Callington

Received at London Office SAT. DEC. 22 1917

No. in Survey held at Reg. Book. 43 on the Date, First Survey 3rd July 1915 Last Survey 12th Dec 1917

(Number of Voids 126)

Master Built at Hebburn By whom built Palmers & Co Ltd Tons Gross 12000 Net 7670

Engines made at Farron By whom made Palmers & Co Ltd when made 1917

Boilers made at do By whom made do when made 1917

Registered Horse Power Owners Anglo American Oil Co Ltd Port belonging to British

Nom. Horse Power as per Section 28 793 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Duplex Expansion No. of Cylinders four No. of Cranks 4

Dia. of Cylinders 28 1/2, 41, 58 & 84 Length of Stroke 54 Revs. per minute 72 Dia. of Screw shaft as per rule 16 9/8 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 Yes 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 Yes Length of stern bush 5-9"

Dia. of Tunnel shaft as per rule 15 2/6 Dia. of Crank shaft journals as per rule 16 0 7/8 Dia. of Crank pin 16 1/4 Size of Crank webs 22 3/4 Dia. of thrust shaft under

collars 16 1/4 Dia. of screw 20-6 Pitch of Screw 18-9 No. of Blades 4 State whether moveable Yes Total surface 120 sq

No. of Feed pumps 2 Diameter of ditto 5 1/2 Stroke 27 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5 1/2 Stroke 27 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 Sizes of Pumps 8 x 10 1/2 & 5 x 6 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Five 3 1/2" diameter In Hold, on top of dup tank one 2" P.S.

and one 2 1/2" P.S. hand pump No. of Bilge Injections One size 12" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes, 6"

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 None How are they protected Yes

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 30/2/17 of Stern Tube 30/2/17 Screw shaft and Propeller 30/2/17

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

OILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Son Ltd

Total Heating Surface of Boilers 11392 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Four, Single Ended

Working Pressure 220 lb per sq in Tested by hydraulic pressure to 240 lb Date of test 25/5/16 No. of Certificate 8891

Can each boiler be worked separately Yes Area of fire grate in each boiler 74 sq ft No. and Description of Safety Valves to

each boiler Two, direct spring Area of each valve 8.29 sq in Pressure to which they are adjusted 225 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 24" outside Mean dia. of boilers 16-3" Length 12-0" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 292-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR Lap

Long. seams 5 rivets Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" Lap of plates or width of butt straps 21 1/2"

Percentage of strength of longitudinal joint rivets 89.5 Working pressure of shell by rules 220 lb Size of manhole in shell 16 x 12"

Size of compensating ring McKillop No. and Description of Furnaces in each boiler 4 Mousins Material Steel Outside diameter 43 3/8"

Length of plain part top 15 1/8 Thickness of plates crown 1 5/8 Description of longitudinal joint Welded No. of strengthening rings 4

Working pressure of furnace by the rules 230 Combustion chamber plates Material Steel Thickness: Sides 3/16" Back 1/16" Top 3/32" Bottom 1"

Pitch of stays to ditto: Sides 8 1/2 x 7 1/2 Back 9 x 5 1/8 Top 8 1/2 x 7 1/2 Stays are fitted with nuts or riveted heads Nuts Working pressure by rules 222

Material of stays Steel Diameter at smallest part 2.030 Area supported by each stay 730 Working pressure by rules 250 End plates in steam space

Material Steel Thickness 1 1/32 Pitch of stays 17 1/2 x 5 1/2 How are stays secured S. nuts Working pressure by rules 225 Material of stays Steel

Area at smallest part 6.10 Area supported by each stay 276 Working pressure by rules 230 Material of Front plates at bottom Steel

Thickness 1 1/32 Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 256

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 Material of tube plates Steel Thickness: Front 1 1/32 Back 25/32 Mean pitch of stays 9 1/8"

Pitch across wide water space 13 1/2 Working pressures by rules 222 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 34 Distance apart 8 1/2 Number and pitch of stays in each Three, 7 1/2"

Working pressure by rules 220 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

W370-0027

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:-

Two top & 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, one set of coupling bolts & nuts, one set of feed & bidge pump valves, assorted bolts & nuts, a few bars of iron, one propeller shaft, one set of bottom end bushes, one counter-shafts one centrifugal pump one shaft, four propeller blades etc.

The foregoing is a correct description,

Palmer's Shipbuilding & Iron Co., Ltd.,

D. Kemp.

Manufacturer.

Manager, Engine Dept.

Dates of Survey while building: During progress of work in shops... During erection on board vessel... Total No. of visits... Is the approved plan of main boiler forwarded herewith?

Total No. of visits... 126

Dates of Examination of principal parts: Cylinders, Slides, Covers, Pistons, Rods, Connecting rods, Crank shaft, Thrust shaft, Tunnel shafts, Screw shaft, Propeller, Stern tube, Steam pipes tested, Engine and boiler seatings, Engines holding down bolts, Completion of pumping arrangements, Boilers fixed, Engines tried under steam, Main boiler safety valves adjusted, Thickness of adjusting washers, Material of Crank shaft, Identification Mark on Do., Material of Thrust shaft, Identification Mark on Do., Material of Tunnel shaft, Identification Marks on Do., Material of Screw shaft, Identification Marks on Do., Material of Steam Pipes, Test pressure, Is an installation fitted for burning oil fuel, Is the flash point of the oil to be used over 150°F., Have the requirements of Section 49 of the Rules been complied with, Is this machinery duplicate of a previous case?

General Remarks: The machinery of this vessel has been constructed under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tested under steam, three of the boilers burning oil & the four star boilers burning coal, the oil burning fittings have now been removed as it is intended to burn coal on the outward passage.

Although the requirements of the rules have been carried out for burning oil below 150° flash point, the Owners desire that the vessel be classed for burning oil fuel above 150° and the Superintendent (Mr Morton) states that this Society will be given due notice should the Owners at some future time desire to carry oil of a flash point below 150° so that the discharge pipe line to deep tank may be removed.

The machinery of this vessel is now in my opinion eligible for record: LMC 12.17 (used) for burning oil above 150° for Main boilers plan, steel test monies, 14 forging & casting reports and 2 plans of oil burning arrangements.

The amount of Entry Fee... £ 3 0 0 Special... £ 59 13 6 Donkey Boiler Fee... £ Travelling Expenses (if any) £ Committee's Minute Assigned + LMC 12.17

F.D. Fitted for oil fuel 12.17 above 150°F.