

REPORT ON MACHINERY.

No. 74752
TUE. 20 SEP. 1921

Date of writing Report 10th Sept 1921 When handed in at Local Office 15th Sept 1921 Port of Newcastle on Tyne
 No. in Survey held at Jarrow on Tyne & Amble Date First Survey 7 Jan Last Survey 15th Sept 1921
 Reg. Book. 36143 on the D.S. Anglo-Mex. 301 (Number of Visits 68)
 Master Amble Built at Amble By whom built Amble S B Co Ltd Tons { Gross 170
 Engines made at Jarrow By whom made Palmer's Shipbuilding & Iron Co Ltd When built 1921
 Boilers made at do By whom made do when made 1921
 Registered Horse Power 114 Owners Anglo Mexican Petroleum Co Ltd Port belonging to Rio de Janeiro
 Nom. Horse Power as per Section 28 114 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 13 1/2" 22" & 36" Length of Stroke 24" Revs. per minute 120 Dia. of Screw shaft 7 1/2" 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 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 31 1/2"
 Dia. of Tunnel shaft 7 1/8" Dia. of Crank shaft journals 6 9/16" Dia. of Crank pin 7 1/8" Size of Crank web 13 1/8" x 4 1/2" Dia. of thrust shaft under collars 7 1/8" Dia. of screw 9" 9" Pitch of Screw 8" 6" No. of Blades 4 State whether moveable no Total surface 40 sq ft
 No. of Feed pumps 2 Diameter of ditto 2" Stroke 12" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 2" Stroke 12" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 1 Sizes of Pumps 8" x 5" x 12", 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps one 2" in CR & one 2" in boiler room
 In Engine Room one 2" in CR & one 2" in boiler room In Holds, &c. one 2" forward, one 2" aft and one 2" in each oil well.
 No. of Bilge Injections 1 sizes 4 1/2" Connected to condenser, or to circulating pump yes 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 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
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door yes worked from yes

BOILERS, &c.—(Letter for record 8) Manufacturers of Steel J. Spence & Son Ltd
 Total Heating Surface of Boilers 1901 sq ft Is Forced Draft fitted yes No. and Description of Boilers One, Single Ended.
 Working Pressure 180 lb per sq in Tested by hydraulic pressure to 320 lb per sq in Date of test 4/5/21 No. of Certificate 9558
 Can each boiler be worked separately yes Area of fire grate in each boiler 49 sq ft No. and Description of Safety Valves to each boiler one direct spring Area of each valve 8.29 sq in Pressure to which they are adjusted 185 lb per sq in Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 14" 3" Length 10" 9" Material of shell plates Steel
 Thickness 1 7/32" Range of tensile strength 28,000 to 30,000 lb per sq in Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R Lap
 long. seams 5 R straps Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Length or width of butt straps 18 7/16"
 Per centages of strength of longitudinal joint 88.6 Working pressure of shell by rules 188 lb Size of manhole in shell 16" x 12"
 Size of compensating ring 4 1/2" x 33" x 1 7/32" No. and Description of Furnaces in each boiler 3, Dighton Material Steel Outside diameter 43 1/2"
 Length of plain part top 19 1/32" Thickness of plates bottom 19 1/32" Description of longitudinal joint Welded No. of strengthening rings yes
 Working pressure of furnace by the rules 198 Combustion chamber plates: Material Steel Thickness: Sides 2 3/32" Back 1 1/16" Top 2 3/32" Bottom 1 1/16"
 Pitch of stays to ditto: Sides 10 1/2" x 5 1/2" Back 10 1/2" x 5 1/2" Top 10" x 10" If stays are fitted with nuts or riveted heads yes Working pressure by rules 181
 Material of stays Steel Area at smallest part 2 7/8 sq in Area supported by each stay 97 sq in Working pressure by rules 181 End plates in steam space: yes
 Material Steel Thickness 1 1/4" Pitch of stays 21" x 21" How are stays secured Double nuts Working pressure by rules 185 Material of stays Steel
 Area at smallest part 7.24 sq in Area supported by each stay 441 sq in Working pressure by rules 182 Material of Front plates at bottom Steel
 Thickness 15/16" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 15 1/2" x 9 7/8" Working pressure of plate by rules 185
 Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 1/4" Material of tube plates Steel Thickness: Front 15/16" Back 25/32" Mean pitch of stays 10 5/8"
 Pitch across wide water spaces 14 1/4" Working pressures by rules 182 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/4" x 1 1/2" Length as per rule 30 23/32" Distance apart 10" Number and pitch of stays in each yes 10"
 Working pressure by rules 191 lb Steam dome: description of joint to shell None % of strength of joint -
 Diameter yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes
 Pitch of rivets yes Working pressure of shell by rules yes Crown plates yes Thickness yes How stayed yes

SUPERHEATER. Type None Date of Approval of Plan Tested by Hydraulic Pressure to
 Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
 Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted yes

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

SPARE GEAR.

State the articles supplied:— 2 top and 2 bottom end bolts & nuts, 2 main bearing and one set of coupling bolts & nuts, one set of fuel & bilge pump valves, one set of HP piston rings & springs, one pair of top and one pair bottom end brasses, one eccentric strap one L valve spindle, one cylinder cover & 6 junk ring studs & nuts, one HP piston spring, one HP piston spring, one piston valve spring, one escape valve spring for each engine fitted, one set of safety valve springs, one set of fuel check valves, a few bars of iron and a quantity of assorted bolts & nuts.

For The foregoing is a correct description,

Palmer Shipbuilding & Iron Co., Ltd.

D. Kemp

Manufacturer.

General Manager, Engine Works.

Dates of Survey while building
During progress of work in shops -- 1921 Jan 7-10 17-24 26-31 Feb 2-4 21-24 28-Mar 3-5 15-16 23-31 Apr 1-7 12-13 15-18 21-25 26-28 May 3-6 12-25 27-31 Jun 2-3 9-7 9-17 30-Jul 2-13 15-20 22-27 28-Aug 3-4 8-9 10-11 12-15 18-19 22-23 25-26 27-Sep 1-7 12-13 14-15
During erection on board vessel ---
Total No. of visits *68*

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders *13/4, 21/4, 26/4* Slides *13/4, 21/4* Covers *21/4, 29/4* Pistons *15/4, 21/4* Rods *21/2, 24/2*
Connecting rods *21/2, 24/2* Crank shaft *15/4, 21/4* Thrust shaft *13/4, 21/4* Tunnel shafts *13/4, 21/4* Screw shaft *7/4, 14/4* Propellers *2/5, 2/6, 7/6*
Stern tube *7/6, 24/6, 21/6* Steam pipes tested *12/5, 21/5, 17/6* Engine and boiler seatings *3/8, 21/8* Engines holding down bolts *15/5, 18/5, 21/5*
Completion of pumping arrangements *27/8, 21* Boilers fixed *18/8, 26/8, 21* Engines tried under steam *27/8, 21*
Completion of fitting sea connections *8/7, 21* Stern tube *8/7, 21* Screw shaft and propeller *8/7, 21*
Main boiler safety valves adjusted *27/8, 21* Thickness of adjusting washers *7/16" & 3/8"*

Material of Crank shaft *Stul* Identification Mark on Do. *15/8, 21 G.M.* Material of Thrust shaft *Stul* Identification Mark on Do. *15/8, 21 G.M.*
Material of Tunnel shafts *do* Identification Marks on Do. *do* Material of Screw shafts *do* Identification Marks on Do. *do*
Material of Steam Pipes *Stul & Copper* Test pressure *520 & 360 lb pro. respectively*

Is an installation fitted for burning oil fuel *yes* Is the flash point of the oil to be used over 150°F. *yes*

Have the requirements of Section 49 of the Rules been complied with *yes*

Is this machinery duplicate of a previous case *No* If so, state name of vessel *Small*

General Remarks (State quality of workmanship, opinions as to class, & *The machinery of this vessel has been*

built under special survey, the materials & workmanship are of good quality, it has been securely fitted on board and satisfactorily tested under full steam pressure.

In my opinion the machinery of this vessel is now eligible for record in L.M.C. 9.21 (in red) F.D. 180 lb pro; fitted for oil burning, flash point above 150°F. in the register book.

Plan of boiler and plan of oil fuel burning arrangements, 2 forging reports, report on evaporator and invoices for mild steel tubes and boiler plates & bars now forwarded.

It is submitted that this vessel is eligible for + L.M.C. 9.21. F.D. C.L. Fitted for oil fuel 9.21. F.P. above 150°F

Recd 21/9/21

The amount of Entry Fee ... £ 3 : 0 :
Special ... £ 28 : 10 :
Donkey Boiler Fee ... £ ✓ :
Travelling Expenses (if any) £ ✓ :
When applied for *19/9/21*
When received *26-10-19*

Committee's Minute *FRI. 23 SEP. 1921*

Assigned *+ L.M.C. 9.21. F.D. C.L. Fitted for oil fuel 9.21. F.P. above 150°F*

George Spedden
Engineer Surveyor to Lloyd's Register of Shipping.



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