

REPORT ON MACHINERY.

No. 27514

Received at London Office

SAT. 17 MAY. 1919

Date of writing Report 10-5-1919 When handed in at Local Office 16 MAY 1919 Port of Sunderland
No. in Survey held at Sunderland Date, First Survey 4-12-18 Last Survey 9-5-1919
Reg. Book. on the Machinery of the new Steel S.S. POLO (Number of Visits 43)
Master Bean Built at Sunderland By whom built Swan Hunter & Wigham Richardson Ltd. When built 1919
Engines made at Sunderland By whom made Richardsons Westgarth & Co. Ltd. (Nº 2149) when made 1919
Boilers made at Sunderland By whom made Richardsons Westgarth & Co. Ltd. (Nº 2149) when made 1919
Registered Horse Power Owners Ellerman & Wilson Line Ltd. Port belonging to Hull
Nom. Horse Power as per Section 28 324 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 22-36-59 Length of Stroke 39 Revs. per minute 70 Dia. of Screw shaft as per rule 12-15 Material of Screw shaft as fitted 12-3/8
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 If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 4-3
Dia. of Tunnel shaft as per rule 10-85 Dia. of Crank shaft journals as per rule 11-39 Dia. of Crank pin 12 Size of Crank webs 22 1/2 x 1 1/4 Dia. of thrust shaft under collars 12 Dia. of screw 14-9 Pitch of Screw 15-6 No. of Blades 4 State whether moveable No Total surface 71 1/2
No. of Feed pumps 2 Diameter of ditto 3 Stroke 24 Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work Yes
No. of Donkey Engines 2 Sizes of Pumps 6 x 4 1/4 x 6, 8 x 9 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 @ 2 3/4 In Holds, &c. No. 1-2 @ 2 3/4; No. 2-2 @ 2 3/4
No. 3-(aft) of E.R. 2 @ 2 3/4; No. 4-2 @ 2 3/4; T.W. 1 @ 2 3/4
No. of Bilge Injections 1 sizes 9 1/2 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes, 3.
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
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 below
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
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Platform.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons Ltd. David Colville & Sons Ltd.
Total Heating Surface of Boilers 4960 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers 3 Single ended marine
Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 15-3-19, 19-3-19 No. of Certificate 3547, 3548.
Can each boiler be worked separately Yes Area of fire grate in each boiler 41 sq. ft. No. and Description of Safety Valves to each boiler 2 Direct spring Area of each valve 8-29 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 20 Mean dia. of boilers 12-6 Length 11-6 Material of shell plates Steel
Thickness 1 1/2 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.
long. seams T.R., D.B.S. Diameter of rivet holes in long. seams 1 3/32 Pitch of rivets 7 3/4 Lap of plates or width of butt straps 14 1/2
Per centages of strength of longitudinal joint rivets 87-4 plate 85-9 Working pressure of shell by rules 183 Size of manhole in shell 16 x 12
Size of compensating ring flanged No. and Description of Furnaces in each boiler 2 Deighton Material Steel Outside diameter 3-11 7/8
Length of plain part top Thickness of plates crown 9 bottom 7 Description of longitudinal joint Welded No. of strengthening rings
Working pressure of furnace by the rules 184 Combustion chamber plates: Material Steel Thickness: Sides 11/16 Back 21/32 Top 11/16 Bottom 29/32
Pitch of stays to ditto: Sides 10 x 8 1/2 Back 9 x 9 Top 10 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 184
Material of stays Steel Area at smallest part 1-73 Area supported by each stay 81 Working pressure by rules 192 End plates in steam space:
Material Steel Thickness 1 1/16 Pitch of stays 16 x 17 How are stays secured Nuts & washers Working pressure by rules 185 Material of stays Steel
Area at smallest part 5-05 Area supported by each stay 242 Working pressure by rules 185 Material of Front plates at bottom Steel
Thickness 29/32 Material of Lower back plate Steel Thickness 1 Greatest pitch of stays 13 1/2 x 9 Working pressure of plate by rules 262
Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/4 Material of tube plates Steel Thickness: Front 29/32 Back 3/4 Mean pitch of stays 7 1/2
Pitch across wide water spaces 13 1/2 Working pressures by rules 185 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 2 @ 9 x 3/4 Length as per rule 30 1/2 Distance apart 10 Number and pitch of stays in each 2 @ 8 1/2
Working pressure by rules 193 Steam dome: description of joint to shell None % of strength of joint
Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

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

IS A DONKEY BOILER FITTED? *No.*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:— *Two Connecting rod top & bottom end bolts & nuts, two main bearing bolts, one set of coupling bolts, one set of feed & Bilp. pump valves, iron, bolts, & nuts of various sizes.*

The foregoing is a correct description,
FOR RICHARDSONS, WESTGARTH & CO. LTD

Richard Russell

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1918. Dec. 25, 6, 11, 14, 17, 19, 21, 22, Jan. 10, 15, 18, 20, 25, Feb. 15, 18, 20, 24, 25, 26, 27, Mar. 3, 5, 12, 19, 22, 27, Apr. 12, 24, 29, 15
During erection on board vessel -- } 16, 24, May 28, 31
Total No. of visits { *43* }

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

" " " donkey " " " " " "

Dates of Examination of principal parts—Cylinders 25-1-19 Slides 25-1-19 Covers 18-1-19 Pistons 18-1-19 Rods 25-1-19

Connecting rods 15-2-19 Crank shaft 23-10-18 Thrust shaft 27-2-19 Tunnel shafts 24-2-19 Screw shaft 24-2-19 Propeller 26-2-19

Stern tube 24-2-19 Steam pipes tested 3-4-19 Engine and boiler seatings 25-2-19 Engines holding down bolts 1-4-19

Completion of pumping arrangements 2-5-19 Boilers fixed 3-4-19 Engines tried under steam 5-4-19

Completion of fitting sea connections 25-2-19 Stern tube 27-2-19 Screw shaft and propeller 13-3-19

Main boiler safety valves adjusted 5-4-19 Thickness of adjusting washers *Port boiler P¹ S¹ 1/4, C. boiler P⁵ S¹ 1/8, St. boiler P¹ S¹ 1/8*

Material of Crank shaft *S.M. Steel* Identification Mark on Do. *23-10-18 AB* Material of Thrust shaft *Cast Steel* Identification Mark on Do. *27-2-19 E.W.R.*

Material of Tunnel shafts *Scrap Iron* Identification Marks on Do. *24-2-19 E.W.R.* Material of Screw shafts *Scrap Iron* Identification Marks on Do. *24-2-19 E.W.R.*

Material of Steam Pipes *Steel - lap welded* Test pressure *540 lbs. sq.*

Is an installation fitted for burning oil fuel *No.* 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 *Yes* If so, state name of vessel *C.S. Type*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Materials and Workmanship are good.

The Machinery has been Constructed under Special Survey, has been tried under steam, is in safe and efficient working condition, and eligible in my opinion for Classification and the record + L.M.C. 5-19.

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 5. 19. F.D.

W.D.
19.5.19. *W.D.*

The amount of Entry Fee ... £ : :
Special ... £ 43: 6 8
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 16 MAY 1919
When received, 27.6.19

Ed. W. Rutter

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 23 MAY 1919

Assigned

+ L.M.C. 5. 19 F.D.

MAJORITY CERTIFICATE
WRITTEN.



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Foundation