

REPORT ON MACHINERY.

No. 66117
SAT. MAY. 23. 1914

Date of writing Report 14th May 1914 When handed in at Local Office MAY 22 1914 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at Newcastle Date, First Survey 11th Feb. 1913 Last Survey 18th May 1914
 Reg. Book. 88(Dup) on the V. S. Motor vessel "Arum" (Number of Visits 130)
 Master Davis Built at Newcastle By whom built Iwan Hunter & Wigham Richardson When built 1914
 Engines made at Newcastle By whom made Iwan Hunter & Wigham Richardson when made 1914
 Boilers made at Newcastle By whom made Iwan Hunter & Wigham Richardson when made 1914
 Registered Horse Power 302 Owners Lower Motor Co Port belonging to London
 Nom. Horse Power as per Section 28 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Two Cycle single acting Diesel motors No. of Cylinders 8 No. of Cranks 8
 Dia. of Cylinders 4 1/8" Length of Stroke 8 3/8" Revs. per minute 125 Dia. of Screw shaft 9 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
 Is 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 38 1/2"
 Dia. of Tunnel shaft 9 1/4" Dia. of Crank shaft journals 11" Dia. of Crank pin 11" Size of Crank webs 6 1/2" x 18 1/2" Dia. of thrust shaft under
 collars 9 3/8" Dia. of screw 10" - 3" Pitch of Screw 9" - 6" No. of Blades 4 State whether moceable No Total surface 36 sq ft
 No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 10" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 10" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 5 Sizes of Pumps (6x6x6) (6x6x6) (8x8x8) (4x2 1/2x4 1/2) No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room 2 - 3 1/2" & 1 - 2" connected to oil pump In Holds, &c. 8 of 3 1/2"
 No. of Bilge Injections 1 sizes 5" Connected to Ballast condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"
 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 stowhold 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 Yes 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 28. 10. 13 of Stern Tube 28. 10. 13 Screw shaft and Propeller 26. 3. 14
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record) Manufacturers of Steel
 Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers
 Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate
 Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to
 each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear
 Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates
 Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams
 Long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
 Percentages of strength of longitudinal joint Working pressure of shell by rules Size of manhole in shell
 Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter
 Length of plain part Thickness of plates Description of longitudinal joint No. of strengthening rings
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
 Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:
 Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
 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
 plates 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

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IS A DONKEY BOILER FITTED? *Yes. Two Cochran. If so, is a report now forwarded? Yes*

SPARE GEAR. State the articles supplied:— *1 Working Cylinder, 1 Guide Shoe, 15 Cyl. Studs & nuts, 1 Working Piston complete, 10 Bottom Cyl. Studs & nuts, 1 Working Cyl. cover, 1 Fuel valve complete, 3 Fuel valve spindles 6 Fuel valves, 1 Fuel valve lever, 1 Scav. Piston valve, 1 Scav. Ecc. strap, 1 Scav. Ecc. shaft & block, 8 Scav. Piston rings, 1 Connecting Rod, 1 Pair of top and brasses, 1 Pair of Bottom end brasses, 1 Set of large main bearings, 1 Set of small main bearings, 1 Cam shaft complete with cam, 2 Pairs of Cam shaft brasses, 1 Fuel pump complete, 1 Suction & discharge valve for water pumps, 3 Thrust shafts, 1 Propeller shaft, 2 P.S. propellers, 1 Set of Coupling bolts & nuts, 1 Set of valves for each pump fitted Assorted bolts, nuts & lock of white metal etc.*

The foregoing is a correct description,

SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

G.F. Sweet

Manufacturer.

1913 DIRECTOR

Dates of Survey while building	During progress of work in shops	Feb. 11-17-21-25. Mar. 11-20-27. Apr. 3-7-11-15-17-23-29. May 2-6-9-15-16-20-21-23-27-28. Jun. 2-4-9-11-17
	During erection on board vessel	20. Feb. 1-4-8-10-16-21-24. Aug. 1-6-12-14-18-25-28-29. Sep. 3-10-15-19-26. Oct. 3-9-13-14-16-17-21-27-28-29.
	Total No. of visits	130.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 3, 11, 13 Slides 24, 2, 14 Covers 3, 11, 13 Pistons 3, 11, 13 Rods 24, 2, 14

Connecting rods 24, 2, 14 Crank shafts 10, 9, 13 Thrust shafts 9, 3, 14 Tunnel shafts 9, 3, 14 Screw shafts 9, 3, 14 Propellers 8, 11, 14

Stern tubes 16, 10, 13 Steam pipes tested ✓ Engine and boiler seatings 28, 10, 13 Engines holding down bolts 30, 3, 4, 20, 4, 14

Completion of pumping arrangements 30, 4, 14 Boilers fixed ✓ Engines tried under ^{oil} steam 30, 4, 14

Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓

Material of Crank shaft: *Steel* Identification Mark on Do. *4644 H* Material of Thrust shafts: *Steel* Identification Mark on Do. *2757 MB*

Material of Tunnel shafts: *Steel* Identification Marks on Do. *2787 MB* Material of Screw shafts: *Steel* Identification Marks on Do. *2756 MB*

Material of Steam Pipes ✓ Test pressure ✓

Is an installation fitted for burning oil fuel *Oil only* 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 ✓

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel, has been built under special survey the material & workmanship are good. It has been efficiently fitted on board and tried under working conditions at full & manoeuvring powers ahead and astern and found satisfactory. The approximate speed of the vessel is 10 1/2 knots; maximum revs: 125 ahead 130 astern and the minimum number of revs: at which the engines will run is 40.*

In our opinion the vessel is eligible to have the notation

L.M.C. 5.14

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 5.14.

Oil engines: 8 Cy. 16 1/2 - 33 7/8" 2 SC. 5A.
2 DB. 100 lb.

G.F.S.
Annual Survey

The amount of Entry Fee	£ 3 : 0	When applied for.	MAY 18 1914
Special	£ 35 : 2	When received.	MAY 21 1914
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute

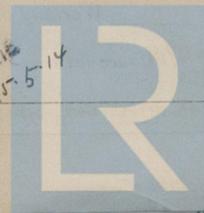
TUE. MAY 26. 1914

Assigned

+ L.M.C. 5.14 Oil Engines

J.W.D.
23/5/14
Wm. Coomber & P.W. Coomber
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE
WRITTEN 25-5-14



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Lloyd's Register Foundation

Rpt. 5b.

Date of writing

No. in Reg. Book.

841 Port.

We re...
van Hunter &...
Specially Surveyed

We here...

For boilers
Horse Power,
above 200. The
than £2 2s.

MEM.—In
all cases where
to be defrayed

No. 6112.

This request is made
Foreign Shipping, and
while the Committee is
advised that neither the
port or certificate issued
is for any error of judgment.

21 FEB. 1913
Secretary,
Lloyd's Register

GENERAL

The

842 Port.

We re...
van Hunter &...
Specially Surveyed

We here...

For boilers
Horse Power
above 200. The
than £2 2s.

MEM.—In
all cases where
to be defrayed

No. 6113.

This request is made
Foreign Shipping, and
while the Committee is
advised that neither the
port or certificate issued
is for any error of judgment.

REGISTER OF SHIP
Secretary, 1913
Lloyd's Register
GLASGOW

Surveyor
Travel

(The Surveyors are requested not to...)

Comm

Assigne