

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 4 March 1918 When handed in at Local Office 8 March 1918 Port of Greenock

No. in Survey held at Greenock Date, First Survey 25th June, 1914 Last Survey 8 March 1918
Reg. Book. on the *SS A. G. A. "Richard"* (Number of Visits 80)

Master Built at Dumfries By whom built A. McMillan & Son Tons Gross Net When built 1918

Engines made at Greenock By whom made John & Kincaid & Co Ltd when made 1918

Boilers made at Greenock By whom made John & Kincaid & Co Ltd when made 1918

Registered Horse Power Owners British Admiralty Port belonging to

Nom. Horse Power as per Section 28 141 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Trippe Compound No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 15-25 1/2-41 Length of Stroke 30 Revs. per minute 100 Dia. of Screw shaft 9 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 No 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 No

If two liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 36

Dia. of Tunnel shaft 8 1/2 Dia. of Crank shaft journals 8 1/4 Dia. of Crank pin 8 1/2 Size of Crank webs 15 1/2-5 1/2 Dia. of thrust shaft under collars 8 1/2

Dia. of screw 10 1/8 Pitch of Screw 10 1/8 No. of Blades 4 State whether moveable No Total surface 36.5 sq ft

No. of Feed pumps Two Diameter of ditto 5 Stroke 15 Can one be overhauled while the other is at work No

No. of Bilge pumps Two Diameter of ditto 2 1/2 Stroke 15 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps One 5-15-8-10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 2 1/2 In Holds, &c. One 2 1/2

No. of Bilge Injections One Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 2 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 stokehold plates Yes Are the Discharge Pipes above or below the deep water line Both

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 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

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Harland & Wolff Ltd

Total Heating Surface of Boilers 2202 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Two single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 19/10/17 No. of Certificate 1812

Can each boiler be worked separately Yes Area of fire grate in each boiler 7 sq ft No. and Description of Safety Valves to each boiler Two

Smallest distance between boilers or uptakes and bunkers or woodwork 8 1/2 Mean dia. of boilers 10 3/8 Length 11 1/2 Material of shell plates Steel

Thickness 29/32 Range of tensile strength 28 1/2-32 1/2 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams

long. seams Diameter of rivet holes in long. seams 3/16 Pitch of rivets 7/16 Lap of plates or width of butt straps 15

Per centages of strength of longitudinal joint Working pressure of shell by rules 193 lbs Size of manhole in shell 16-12

Size of compensating ring No. and Description of Furnaces in each boiler Two Material Steel Outside diameter 59 1/2

Length of plain part Thickness of plates Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules 193 lbs Combustion chamber plates: Material Steel Thickness: Sides 10/16 Back 29/32 Top 10/16 Bottom 12/16

Pitch of stays to ditto: Sides 9 1/2-7 1/2 Back 8 1/2 Top 9 1/2-7 1/2 If stays are fitted with nuts or riveted heads Working pressure by rules 184 lbs

Material of stays Steel Area at smallest part 1.73 Area supported by each stay 76.56 Working pressure by rules 184 lbs End plates in steam space:

Material Steel Thickness 1 Pitch of stays 15 1/2 How are stays secured Working pressure by rules 180 lbs Material of stays Steel

Area at smallest part 7.85 Area supported by each stay 38.6 Working pressure by rules 211 lbs Material of Front plates at bottom Steel

Thickness 1 Material of Lower back plate Steel Thickness 1 Greatest pitch of stays 13 1/2 Working pressure of plate by rules 267 lbs

Diameter of tubes 5 Pitch of tubes 4 1/8 Material of tube plates Steel Thickness: Front 1 Back 29/32 Mean pitch of stays 9 1/2

Pitch across wide water spaces 13 1/2 Working pressures by rules 187 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2-14 1/8

Length as per rule 27 7/8 Distance apart 9 1/2 Number and pitch of stays in each

Working pressure by rules 189 lbs Steam dome: description of joint to shell % 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 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

Material of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *100 lbs and bolts, 1000 Bolts and bolts, 4 main bearing bolts, one set coupling bolts, one set feed pump valves, one set ridge pump valves, Air pump Rod, one set Air pump links, one eccentric clip and rod, Satchell shaft 1/2 Port Crank shaft, Piston rod, main bearing link, one set thrust cover valve spindle, Propeller 16 condenser tubes 50 Journals, one set air pump valves and an specification*

The foregoing is a correct description, for and on behalf of JOHN G. KINCAID & COY., LIMITED.

J. M. Mignani Director Manufacturer.

Dates of Survey while building: During progress of work in shops (1917) June 15, July 2, 18, 20, 23, 26, 30, Aug. 2, 7, 8, 10, 13, 14, 16, 21, 23, 28, 29, 30, 31, Sep. 3, 5, 26, 27, Oct. 1, 4, 5, 8, 9, 11, 12, 17, 18, 22, 24, 25, 26, 27, 30, Nov. 2, 6, 7, 12, 13, 14, 16, 19, 21, 22, 26, 28, 30, Dec. 3, 6, 10, 17, 19, 21 (1918) Jan. 7, 10, 12, 15, 21, 24, 28, 29, 30, Feb. 4, 5, 8, 14, 20, 21, 22, 25, 28, Mar. 1, 2, 8, 10, 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Apr. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Jun. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Jul. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Sep. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 1918. Total No. of visits 80.

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

Dates of Examination of principal parts—Cylinders *30/10/17* Slides *22/11/17* Covers *16/11/17* Pistons *3/12/17* Rods *30/11/17*
Connecting rods *4/11/17* Crank shaft *4/10/17* Thrust shaft *26/11/17* Tunnel shafts *26/11/17* Screw shaft *2/11/17* Propeller *7/11/17*
Stern tube *4/11/17* Steam pipes tested *24/1/18* Engine and boiler seatings *19/12/17* Engines holding down bolts *21/12/17*
Completion of pumping arrangements *2/3/18* Boilers fixed *14/2/18* Engines tried under steam *14/2/18*
Completion of fitting sea connections *+* Stern tube *x* Screw shaft and propeller *x See Enk Rpt*
Main boiler safety valves adjusted *14/2/18* Thickness of adjusting washers *7 13/32 - 5 1/32 - 7 9/16 - 8 1/32*
Material of Crank shaft *Steel* Identification Mark on Do. *247* Material of Thrust shaft *Steel* Identification Mark on Do. *247*
Material of Tunnel shafts *Steel* Identification Marks on Do. *247* Material of Screw shafts *Steel* Identification Marks on Do. *247*
Material of Steam Pipes *Steel* Test pressure *600 lb*
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 *+* If so, state name of vessel *+*

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

The Engines and Boilers of this Steamer have been constructed under Special Survey and placed on land in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the certification + L.M.C. 3-18 in the Register Book. Fitted for oil fuel F.P. above 150°.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.18. F.D. Fitted for oil fuel 3.18. F.P. above 150°F.

J.W.D. 21/3/18
J.P.R.

The amount of Entry Fee ... £ : : When applied for, 24th March 1918.
Special ... £ 69:9 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When received, 26/10/18 29/10/18

James Jones Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW. 19 MAR. 1918

Assigned + L.M.C. 3.18 F.D.

MACHINERY CERTIFICATE WRITTEN 20.3.18

Fitted for oil fuel 3.18. F.P. above 150°F.



Greenock

Certificate (if required) to be sent to The Surveyors are requested not to write on or below the space for Committee's Minute.

L.A. 1/13/18