

Rpt. 4.

REPORT ON MACHINERY

No. 17596.

28 JAN 1920

Received at London Office

Date of writing Report 29 Dec 1919 When handed in at Local Office 22 Jan 1920 Port of Greenwich

No. in Survey held at Greenwich

Date, First Survey 17 May 1918, Last Survey 21 Jan 1920

Reg. Book.

(Number of Visits) 144.

on the *Old Diana Harmonides*Tons { Gross
NetMaster Built at *Swine* By whom built *Agnes & Sons Ltd* When built 1920Engines made at *Greenock* By whom made *John S Kincaid & Co Ltd* when made 1920Boilers made at *Greenock* By whom made *John S Kincaid & Co Ltd* when made 1920Registered Horse Power Owners Port belonging to *Shipton*Nom. Horse Power as per Section 28 517. Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*ENGINES, &c.—Description of Engines *Triple Compound* No. of Cylinders *Three* No. of Cranks *Three*Dia. of Cylinders 27-44-73 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft as per rule 1504 Material of *Steel* as fitted 152 screw shaftIs 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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *no* If twoliners are fitted, is the shaft lapped or protected between the liners *no* Length of stern bush 60 1/2

Dia. of Tunnel shaft as per rule 1333 Dia. of Crank shaft journals as per rule 1399 Dia. of Crank pin 14 1/2 Size of Crank webs 28-8 1/2 Dia. of thrust shaft under

collars 14 1/4 Dia. of screw 18-0 Pitch of Screw 18-6 No. of Blades 4 State whether moveable *no* Total surface 100-8 1/4No. of Feed pumps *Two* Diameter of ditto 4 Stroke 27 Can one be overhauled while the other is at work *yes*No. of Bilge pumps *Two* Diameter of ditto 4 Stroke 27 Can one be overhauled while the other is at work *yes*No. of Donkey Engines *Three* Sizes of Pumps 7-18 1 1/2-24 No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *From 3 1/2 and one from 3 1/2* In Holds, &c. *From 3 1/2* *From 3 1/2**Circulating Pump Separate Engines*No. of Bilge Injections *no* sizes 12 Connected to condenser, or to circulating pump *no* Is a separate Donkey Suction fitted in Engine room & size *yes* 2 1/2Are 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 *no*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 plateWhat pipes are carried through the bunkers *no* How are they protected *no*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 *Top of Stn*BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Clyde & Co*

3. S. B.

Total Heating Surface of Boilers 7668 Is Forced Draft fitted *yes* No. and Description of Boilers *Three Single Ended*Working Pressure 180 *lb* Tested by hydraulic pressure to 360 *lb* Date of test 20-27-30/4/19 No. of Certificate 1395Can each boiler be worked separately *yes* Area of fire grate in each boiler 663 1/4 No. and Description of Safety Valves toeach boiler *Two* Area of each valve 9-62 Pressure to which they are adjusted 185 *lb* Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers or woodwork 24 Mean dia. of boilers 15-6 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: *no* seams *all* withlong. seams *all* *all* Diameter of rivet holes in long. seams 19/16 Pitch of rivets 9/16 Lap of plates or width of butt straps 19 1/2Per centages of strength of longitudinal joint rivets 85-3 Working pressure of shell by rules 182 *lb* Size of manhole in shell 16-12Size of compensating ring *Hanged* No. and Description of Furnaces in each boiler *3 Deighton* Material *Steel* Outside diameter 50 1/2Length of plain part top Thickness of plates crown 19/32 Description of longitudinal joint *Welded* No. of strengthening rings *Comity*Working pressure of furnace by the rules 182 *lb* Combustion chamber plates: Material *Steel* Thickness: Sides 23/32 Back 14/16 Top 23/32 Bottom 23/32Pitch of stays to ditto: Sides 10 1/2-9 1/4 Back 9 1/2-8 3/4 Top 10 1/2-9 1/4 If stays are fitted with nuts or riveted heads *both* Working pressure by rules 180 *lb*Material of stays *Steel* Area at smallest part 2-43 1/2 Area supported by each stay 98-3 1/2 Working pressure by rules 222 *lb* End plates in steam space:Material *Steel* Thickness 1 1/2 Pitch of stays 21/4 How are stays secured *all* Working pressure by rules 181 *lb* Material of stays *Steel*Area at smallest part 8-29 1/2 Area supported by each stay 473 1/2 Working pressure by rules 182 *lb* Material of Front plates at bottom *Steel*Thickness 14/16 Material of Lower back plate *Steel* Thickness 27/32 Greatest pitch of stays 13 1/2 Working pressure of plate by rules 187 *lb*Diameter of tubes 24 1/4 Pitch of tubes 4-3 3/4 Material of tube plates *Steel* Thickness: Front 31/32 Back 12/16 Mean pitch of stays 9-8Pitch across wide water spaces 13 1/2 Working pressures by rules 181 *lb* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre 10-14 Length as per rule 35-56 Distance apart 10 1/2 Number and pitch of stays in each *Three* 9 1/4Working pressure by rules 187 *lb* 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

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

IS A DONKEY BOILER FITTED?

None

If so, is a report now forwarded? -

SPARE GEAR. State the articles supplied:—The top end bolts. The bottom end bolts. Two main bearing bolts. One set coupling bolts. One set end pump valves. One set Belge pump valves. Three main and three donkey chuck valves. Particulars of the shaft.

The foregoing is a correct description,
FOR JOHN G. KINCAID & COY., LIMITED.

Robert Green.

Manufacturer.

Dates of Survey while building { During progress of work in shops - - (1918) May 17-23-29 June 5-14 Aug. 2-19-23-28 Sep. 3-10-13-23-25-26-30 Oct. 7-14-21-23-25-31 Nov. 7-14-18-20-21-26 Dec. 5-11-12-19-23
(1919) Jan. 8-13-15-17-20-22-24-29-31 Feb. 3-5-7-10-11-13-14-18-20-21-24-25-26-28 Mar. 3-5-7-11-13-18-20-21-24-28 Apr. 1-3-4-8-10-11-16-1
During erection on board vessel - - - 18-22-25-26-30 May 3-5-7-12-14-16-19-20-23-26-28-30 June 2-4-6-9-11-13-17-18-20-23-27-30 July 1-2-23-25-31 August 4-8-12-13-15
Total No. of visits 144.

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders 26/8/19 Slides 23/10/19 Covers 26/8/19 Pistons 26/8/19 Rods 26/8/19
Connecting rods 3/2/19 Crank shaft 4/4/19 Thrust shaft 4/4/19 Tunnel shafts 17/6/19 Screw shaft 17/6/19 Propeller 23/10/19

Stern tube 22/9/19 Steam pipes tested 5-12-15-17/12/19 Engine and boiler seatings 14/11/19 Engines holding down bolts 9/12/19

Completion of pumping arrangements 9/12/19 Boilers fixed 9/12/19 Engines tried under steam 24/12/19

Completion of fitting sea connections Stern tube Screw shaft and propeller 4/12/19
Main boiler safety valves adjusted 24/12/19 Thickness of adjusting washers P 1/16 5 9/16" - P 9/32 5 7/32" - P 19/64 5 1/2"

Material of Crank shaft S 12m Identification Mark on Do. 335 Material of Thrust shaft S 12m Identification Mark on Do. 335

Material of Tunnel shafts S 12m Identification Marks on Do. 335 Material of Screw shafts S 12m Identification Marks on Do. 335

Material of Steam Pipes S 12m Test pressure 600 lb

Is an installation fitted for burning oil fuel No 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 Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel —

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

The Machinery and Boilers of this Steamer have been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and report duly submitted for the Intimation T. D. and LMC 1. 20. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. 1-20. F.D.

29/1/20.

The amount of Entry Fee ... £ 3 : 0
Special ... £ 45 : 17
Donkey Boiler Fee ... £ 17 :
Travelling Expenses (if any) £ :
When applied for, 22-1-19-20.
When received, 28/2/20.

Committee's Minute GLASGOW 28 JAN 1920

Assigned + LMC 1, 20

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



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Foundation