

REPORT ON MACHINERY

No. 43372

Received at London Office

FRI. JUL. 30 1920

Date of writing Report 28.7.1920 When handed in at Local Office 29.7.1920 Port of Newcastle on Tyne
 No. in Survey held at South Shields Date, First Survey 4th March Last Survey 19th July 1920
 Reg. Book. on the S.S. "Heather King" ex "Hilgarven" (Number of Visits 9)
 Master Built at Middlesbrough By whom built Smiths Dock Co. Ltd. Tons { Gross 1918
 when made 1918
 gines made at Sunderland By whom made Messrs North Eastern Marine when made 1918
 ders made at Sunderland By whom made Messrs North Eastern Marine when made 1918
 Registered Horse Power Owners Glamhurst Shipping Co. Ltd. Port belonging to Cardiff
 Nom. Horse Power as per Section 28 116 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 16", 26", 44" Length of Stroke 26" Revs. per minute Dia. of Screw shaft as per rule 8.5" 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 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 48 1/2"
 Dia. of Tunnel shaft as per rule 7.95" Dia. of Crank shaft journals as per rule 8.35" Dia. of Crank pin 8 3/4" Size of Crank webs 13" x 5 1/4" Dia. of thrust shaft under
 collars 8 1/2" Dia. of screw 9'-6" Pitch of Screw 8'-6" No. of Blades 4 State whether moveable No Total surface 36 sq ft
 No. of Feed pumps 2 Main Diameter of ditto 7" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 1 Diameter of ditto 6" Stroke 6" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 1 Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2-2 1/2" Boiler Room 1-2 1/2" Tunnel 1-2 1/2" In Holds, &c. Fore peak 1-2 1/2" No. 1 Hold 1-2 1/2" No. 2 Hold 1-2 1/2"
 After Hold 1-2 1/2" 8 2 1/2"
 No. of Bilge Injections 1 sizes 6 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 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 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 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 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 Yes Is it fitted with a watertight door Yes worked from E.R. Platform

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

Total Heating Surface of Boilers 1825 sq ft Is Forced Draft fitted No No. and Description of Boilers One Single ended Multi
 Working Pressure 200 lbs. Tested by hydraulic pressure to Date of test No. of Certificate
 Can each boiler be worked separately Area of fire grate in each boiler 51.5 sq ft No. and Description of Safety Valves to
 each boiler Two Spring loaded Area of each valve 5.94 sq ft Pressure to which they are adjusted 200 lbs. Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean dia. of boilers 13'-0" Length 11'-6" Material of shell plates Steel
 Thickness 1 1/4" Range of tensile strength 28/32.5" Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. Lap
 long. seams T.R. & B. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 9 5/16" Lap of plates or width of butt straps 19"
 Per centages of strength of longitudinal joint rivets 83.8 Working pressure of shell by rules 200 Size of manhole in shell 16" x 12"
 plate 86.5 No. and Description of Furnaces in each boiler 3 Driftless Material Steel Outside diameter 3'-5 3/4"
 Size of compensating ring 2'-11 1/2" x 2'-7 1/2" x 1'-6"
 Length of plain part top Thickness of plates crown 9/16" Description of longitudinal joint Welded No. of strengthening rings
 bottom Working pressure of furnace by the rules 211 Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1"
 Pitch of stays to ditto: Sides 9" x 8 3/4" Back 8 1/4" x 8 1/2" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads Multi Working pressure by rules 207
 Material of stays Steel Area at smallest part 2.03 sq ft Area supported by each stay 78.75 sq ft Working pressure by rules 232 End plates in steam space:
 Material Steel Thickness 1 3/16" Pitch of stays 17 1/2" How are stays secured 2 Multi Working pressure by rules 218 Material of stays Steel
 Area at smallest part 5.93 sq ft Area supported by each stay 306.25 sq ft Working pressure by rules 202 Material of Front plates at bottom Steel
 Thickness 1" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 14" x 9" Working pressure of plate by rules 250
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates Steel Thickness: Front 1" Back 3/4" Mean pitch of stays 9 3/32"
 Pitch across wide water spaces 13 1/4" Working pressures by rules 204 Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 8" x 1 3/4" Length as per rule 31 1/4" Distance apart 8 1/2" Number and pitch of stays in each 2-9"
 Working pressure by rules 202 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? *no*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:— *2 Top end bolts & nuts 2 Bottom end bolts & nuts 2 Main bearing bolts*
1 Set of Coupling bolts Full set of spares for them Tail pumps Air pump Centrifugal air pump
and Ballast pumps Assorted iron bolts & nuts 1 Top end bearing 1/2 Main bearing 1 Bottom end
bearing

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *Dec 2. 1917 May 22. Jun 9. Jul 5. 12. 14. 15. 19*
{ During erection on board vessel -- }
Total No. of visits *9*

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

" " " donkey " " "

Dates of Examination of principal parts—Cylinders *14. 7. 20* Slides *14. 7. 20* Covers *14. 7. 20* Pistons *14. 7. 20* Rods *14. 7. 20*

Connecting rods *14. 7. 20* Crank shaft *14. 7. 20* Thrust shaft *14. 7. 20* Tunnel shafts *14. 7. 20* Screw shaft *✓* Propeller *4. 3. 20*

Stern tube *✓* Steam pipes tested *5/7/20* Engine and boiler seatings *12. 7. 20* Engines holding down bolts *12. 7. 20*

Completion of pumping arrangements *12. 7. 20* Boilers fixed *28. 5. 20* Engines tried under steam *19. 7. 20*

Completion of fitting sea connections Stern tube Screw shaft and propeller

Main boiler safety valves adjusted *19. 7. 20* Thickness of adjusting washers *Pat 5/16" Star 5/16"*

Material of Crank shaft *Steel* Identification Mark on Do. Material of Thrust shaft *Steel* Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes *Wrought Iron* Test pressure *600 lb. sq. in.*

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 *✓*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Ket. Glen Vessel.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery and boilers were*

built under the supervision and to the requirements of the British Corporation
The scantlings of the boiler are to a plan approved by Lloyd's Register of Shipping
on the 25 Sept 1917.

The vessel was placed in Messrs J Readhead & Son dry dock. The propeller, stern
tube, sea connections, and fastenings examined. The tail shaft was not drawn
at this time. The cylinders, slides, pistons, casings, crank, thrust, & tunnel shafting
the condenser & ballast, air, circulating, feed pumps were opened out, overhauled
and examined. The Main Boiler, its mountings doors & fastenings were examined

The scantlings of the engine & boilers were checked. One boiler had been removed from
the vessel and the position of the one now installed was altered. The seatings and fastenings
are efficient. The fan and forced-draught installation were removed. The main steam pipes
were annealed and tested after alterations. The main & auxiliary machinery were tried under
steam & the main boiler safety valves adjusted under steam.

In my opinion the vessel is eligible for record of LMC 7. 20

The amount of Entry Fee ... £ : : When applied for, *39-7-1920*
Special ... £ *10* : - :
Donkey Boiler Fee ... £ : : When received, *11/8/20*
Travelling Expenses (if any) £ : : *12*

Committee's Minute

Assigned

FRI. AUG. 16 1920

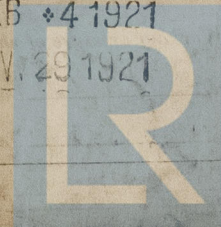
LMC 7. 20

CERTIFICATE WRITTEN

Engineer Surveyor to Lloyd's Register of Shipping.

FRI. FEB. 4 1921

TUE. NOV. 29 1921



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