

REPORT ON MACHINERY.

No. 17312.

Received at London Office

Date of writing Report 28 May 1918 When handed in at Local Office 6th June, 1918. Port of Greenock

No. in Survey held at 1st Hargreaves & Greenock Reg. Book.

Date, First Survey 26th July, 1916, Last Survey 3rd June, 1918.

on the Steel Steamer Ardgorm

(Number of Visits 108)

Gross 4618.49.

Net 2932.02.

When built 1918

Master J. H. Bewidge. Built at 1st Hargreaves By whom built Russell & Co.

Engines made at Greenock By whom made Rankin & Blackmac Ltd when made 1918

Boilers made at Greenock By whom made Rankin & Blackmac Ltd when made 1918

Registered Horse Power

Owners Steamship Ardgorm Co. Ltd.

Port belonging to Greenock

Nom. Horse Power as per Section 28 488

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c.—Description of Engines

Triple Compound

No. of Cylinders Three

No. of Cranks Three

Dia. of Cylinders 26-43-70

Length of Stroke 48

Revs. per minute 70

Dia. of Screw shaft

as per rule 14.5

Material of screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the after end of the liner made water tight

in the propeller boss

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 61

Dia. of Tunnel shaft

as per rule 13.03

Dia. of Crank shaft journals

as per rule 13.68

Dia. of Crank pin 13 1/4

Size of Crank webs 19.8 1/2

Dia. of thrust shaft under

collars 13 1/2

Dia. of screw 17.6

Pitch of Screw 16.0

No. of Blades 4

State whether moveable

Total surface 96 1/2

No. of Feed pumps 2

Diameter of ditto 4

Stroke 27

Can one be overhauled while the other is at work

No. of Bilge pumps 2

Diameter of ditto 4

Stroke 27

Can one be overhauled while the other is at work

No. of Donkey Engines Three

SIZES OF PUMPS 12-12-5 1/2-8-4 1/2-6

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

In Holds, &c. Light 3 1/2

Tunnel 2 1/2

No. of Bilge Injections 2

SIZES 6 1/2

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room

Size 2 1/2

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

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

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

worked from 1st Hargreaves

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel Beardmore & Co.

Total Heating Surface of Boilers 7345

Is Forced Draft fitted

No. and Description of Boilers Three Single End

Working Pressure 180 lb

Tested by hydraulic pressure to 360 lb

Date of test 14/2/18

No. of Certificate 1525

Can each boiler be worked separately

Area of fire grate in each boiler 56 1/2

No. and Description of Safety Valves to

each boiler Two

Area of each valve 11.04

Pressure to which they are adjusted 185 lb

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork 12

Mean dia. of boilers 15.0

Length 11.6

Material of shell plates

Descrip. of riveting: cir. seams

Thickness 1 1/16

Range of tensile strength 28 1/2-32

Are the shell plates welded or flanged

Pitch of rivets 9 1/8

Lap of plates or width of butt straps 18 1/2

long. seams

Diameter of rivet holes in long. seams 19 1/16

Pitch of rivets 9 1/8

Lap of plates or width of butt straps 18 1/2

Per centages of strength of longitudinal joint

rivets 92.7

plate 88.6

Working pressure of shell by rules 182 lb

Size of manhole in shell 16-12

Size of compensating ring 30 1/2-26 1/2-14 1/2

No. and Description of Furnaces in each boiler Three

Material

Outside diameter 47 1/2

Length of plain part

Thickness of plates

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules 186 lb

Combustion chamber plates: Material

Thickness: Sides 4 1/16

Back 4 1/16

Top 4 1/16

Bottom 12 1/16

Pitch of stays to ditto: Sides 8 1/2-9 1/8

Back 9 1/8-8 1/2

Top 9 1/8-8 1/2

If stays are fitted with nuts or riveted heads

Working pressure by rules 182 lb

Material of stays

Area at smallest part 1.77

Area supported by each stay 77.5

Working pressure by rules 183 lb

End plates in steam space:

Material

Thickness 1 7/16

Pitch of stays 22-18 1/2

How are stays secured

Working pressure by rules 184 lb

Material of stays

Area at smallest part 7.24

Area supported by each stay 415

Working pressure by rules 182 lb

Material of Front plates at bottom

Thickness 13 1/16

Material of Lower back plate

Thickness 13 1/16

Greatest pitch of stays 18 1/2

Working pressure of plate by rules 186 lb

Diameter of tubes 24

Pitch of tubes 4-3 3/8

Material of tube plates

Thickness: Front 13 1/16

Back 12 1/16

Mean pitch of stays 8-11 1/8

Pitch across wide water spaces 13 1/2

Working pressures by rules 222 lb

Girders to Chamber tops: Material

Depth and

thickness of girder at centre 9 1/2-1 1/2

Length as per rule 34 7/8

Distance apart 9 1/2

Number and pitch of stays in each

% of strength of joint

Working pressure by rules 181 lb

Steam dome: description of joint to shell

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

Pressure to which each is adjusted

Diameter of Safety Valve

Is Easing Gear fitted

W2620010

Lloyd's Register Foundation

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— The top end bell. The bottom end bell. The main bearing bell. The side coupling bell. One set dead pump valve. One set single pump valve. Bell. Piston. One set of cylinder escape valve & spring. One set of escape valve and spring. One set crank pin bush. Three safety valve springs. &c.

The foregoing is a correct description,

RANKIN & BLACKMORE, LTD.

H. Greenock

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 27. May 11. 14. 22. 24. 29. June 6. 8. 12. 15. 18. 22. July 3. 19. 24. Aug. 2. 14. 16. 23. Oct. 2. 8. 10. 17. 18. 23. 26. 27. 31. Nov. 5. 12. 14. 16. 21. 27. 29. Dec. 3. 6. 10. 13. 20. 26. (1918). Jan. 8. 11. 16. 18. 24. 29. Feb. 1. 5. 7. 13. 14. 15. 19. 21. 25. 27. Mar. 5. 7. 11. 14. 19. 25. 27. Apr. 1. 4. 6. 9. 11. 12. 16. 17. 25. May 2. 8. 9. 14. 18. 20. 21. 23. 24. 27. 28. 31. June 3. - Total No. of visits 108.

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

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders 26/12/17 Slides 24/2/18 Covers 26/12/17 Pistons 24/2/18 Rods 29/1/18

Connecting rods 29/1/18 Crank shaft 19/12/17 Thrust shaft 29/3/18 Tunnel shafts 29/3/18 Screw shaft 29/3/18 Propeller 14/3/18

Stern tube 4/4/18 Steam pipes tested 18.2.23-25 5/18 Engine and boiler seatings 17/4/18 Engines holding down bolts 17/5/18

Completion of pumping arrangements 17/5/18 Boilers fixed 17/5/18 Engines tried under steam 3/5/18

Completion of fitting sea connections 17/4/18 Stern tube 17/4/18 Screw shaft and propeller 17/5/18

Main boiler safety valves adjusted 27/5/18 Thickness of adjusting washers *3 1/16 5 1/16 - 3 1/16 5 1/16 - 3 1/16 5 1/16*

Material of Crank shaft *Steel* Identification Mark on Do. 272 Material of Thrust shaft *Steel* Identification Mark on Do. 272

Material of Tunnel shafts *Steel* Identification Marks on Do. 272 Material of Screw shafts *Steel* Identification Marks on Do. 272

Material of Steam Pipes *Iron* Test pressure *bars*

Is an installation fitted for burning oil fuel *Yes* 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 *—* If so, state name of vessel *—*

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

This vessel has been fitted to carry fuel oil at 150° in Ballast Tank (Double Bottom). The requirements have been carried out, with the exception of the printing. 'Synovite' a material of rubber has been fitted, owing to the inability of the Engineer to procure Brown Paper. The Bureau of Engineers has agreed to this, in this case.

The Machinery and Engines of this vessel has 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 the case is respectfully submitted for the certification + L.M.C. 6-18-F.D. to carry oil fuel in Ballast Tank at 150° in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.18. F.D.

The amount of Entry Fee ... £ 3 : 0 : When applied for, Special ... £ 4.14 : 0 : 7th June 1918. Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 8th June 1918.

Committee's Minute GLASGOW. 11 JUN 1918

Assigned + L.M.C. 6, 18

Sam. Greenock
Engineer Surveyor to Lloyd's Register of Shipping.



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