

# REPORT ON MACHINERY.

No. 3994-1

WED. MAY 12 1920

Received at London Office

Date of writing Report

19

When handed in at Local Office

8. 5. 1920. Port of Glasgow

No. in Survey held at

Dalmuir

Date, First Survey 15. 5. 19. Last Survey 30. 4. 1920.

Reg. Book.

on the S.S. "Setter"

(Number of Visits 34)

Tons Gross Net

Master

Built at Dalmuir

By whom built Wm Beardmore & Co. (613) When built 1920

Engines made at Dalmuir

By whom made Wm Beardmore & Co. (613) when made 1920

Boilers made at Dalmuir

By whom made Wm Beardmore & Co. (613) when made 1920.

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28 265

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

## ENGINES, &c.—Description of Engines Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 23" 36" 58" Length of Stroke 42" Revs. per minute 90. Dia. of Screw shaft as per rule 11.9" Material of screw shaft as fitted 12 1/2" 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 length 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 59"

Dia. of Tunnel shaft as per rule 11.2" Dia. of Crank shaft journals as per rule 11.79" Dia. of Crank pin 12 1/2" Size of Crank webs 17 1/2" x 8" Dia. of thrust shaft under collars 12 1/2" Dia. of screw 13.0" Pitch of Screw 17 0" No. of Blades 4 State whether moveable no Total surface 62 1/2"

No. of Feed pumps 2 Diameter of ditto 4 Stroke 24" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps (1. General Service) (1. Donkey feed) (1. Duplex 6" x 8") (1. Duplex 4" x 5") No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room (3) 2 1/4" in stokehold (1) 2 1/4" In Holds, &c. No. 1 (B) 2 1/4" after hold (1) 2 1/4"

tunnel well (1) 2 1/4"

No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 3"

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the stoves on Engine room bulkheads always accessible none

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 feed bilge suction How are they protected under floor

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 platform

## BOILERS, &c.—(Letter for record (S) Manufacturers of Steel Wm Beardmore & Co.)

Total Heating Surface of Boilers 4424 Is Forced Draft fitted no No. and Description of Boilers 2 Single ended

Working Pressure 175 Tested by hydraulic pressure to 315 Date of test 8/12/19 No. of Certificate 15722

Can each boiler be worked separately yes Area of fire grate in each boiler 61.5 No. and Description of Safety Valves to each boiler 1 pair direct spring Area of each valve 18.56 Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 11" Mean dia. of boilers 14.6" Length 12.6" Material of shell plates steel

Thickness 1 3/16" Range of tensile strength 28 to 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double top

long. seams table butt Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 1/2"

Per centages of strength of longitudinal joint rivets 87.75 plate 85.7 Working pressure of shell by rules 183 Size of manhole in shell 16" x 12"

Size of compensating ring 37" x 30" x 1 3/16" No. and Description of Furnaces in each boiler 3 Leighton Material steel Outside diameter 44"

Length of plain part top Thickness of plates crown 33 bottom 34 Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 175 Combustion chamber plates: Material steel Thickness: Sides 3/8" Back 5/8" Top 5/8" Bottom 3/8"

Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8" x 8 1/2" Top 8 1/2" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays steel Area at smallest part 1.726 Area supported by each stay 742 Working pressure by rules 185 End plates in steam space:

Material steel Thickness 1 1/16" Pitch of stays 18" x 19 3/4" How are stays secured 2 x 1/2" Working pressure by rules 177 Material of stays steel

Area at smallest part 6.1 Area supported by each stay 359 1/2 Working pressure by rules 177 Material of Front plates at bottom steel

Thickness 1 3/16" Material of Lower back plate steel Thickness 3/8" Greatest pitch of stays 14 3/4 Working pressure of plate by rules 188

Diameter of tubes 3 3/4" Pitch of tubes 5" x 5" Material of tube plates steel Thickness: Front 1 3/16" Back 3/4" Mean pitch of stays 10"

Pitch across wide water spaces 15 3/4" Working pressures by rules 207 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 10" x 3 1/4" Length as per rule 34 5/8" Distance apart 9" Number and pitch of stays in each (3) 8 1/4"

Working pressure by rules 195 Steam dome: description of joint to shell none % 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 none Date of Approval of Plan Tested by Hydraulic Pressure to

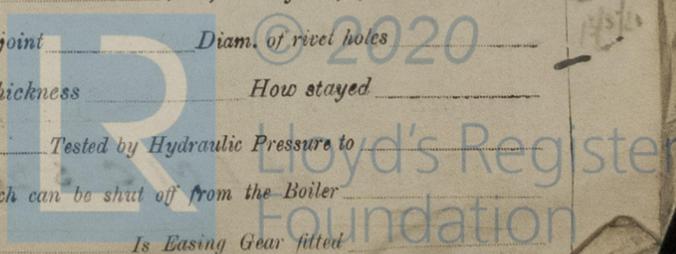
Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

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

If not, state whether, and when, one will be sent

Is a Report also sent on the Hull of the Ship?

007865-007873-002A



IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded? *yes*

SPARE GEAR. State the articles supplied:— *2 top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of coupling bolts & nuts, feed & budge pipes, valves, iron, bolts, & nuts, of various sizes*

The foregoing is a correct description,  
FOR WILLIAM BEARDMORE & CO., LIMITED

*W. D. Wilson*

Manufacturer.

Dates of Survey while building: During progress of work in shops -- *1919 May 15-26-30 June 27 July 1-3 Aug 1-11-19 Sept 9-16-23 Oct 2-3-14-28*  
During erection on board vessel -- *Dec 20-10-22 1920 Jan 12-19-27 Feb 2-5 Mar 1-9-17-10 Apr 1-9-30-15-21*  
Total No. of visits *34 38*

Dates of Examination of principal parts—Cylinders *3/10/19* Slides *28/10/19* Covers *3/10/19* Pistons *28/10/19* Rods *28/10/19*  
Connecting rods *28/10/19* Crank shaft *28/10/19* Thrust shaft *19/1/20* Tunnel shafts *19/8/19* Screw shaft *2/12/19* Propeller *2/12/19*  
Stern tube *28/10/19* Steam pipes tested *17/3/20* Engine and boiler seatings *19/1/20* Engines holding down bolts *1/3/20*  
Completion of pumping arrangements *30/4/20* Boilers fixed *9/4/20* Engines tried under steam *30/4/20*  
Completion of fitting sea connections *19/1/20* Stern tube *19/1/20* Screw shaft and propeller *19/1/20*  
Main boiler safety valves adjusted *9/4/20* Thickness of adjusting washers *Pat. tube 1/16 2/32 SD tube 2/32 3/32*  
Material of Crank shaft *steel* Identification Mark on Do. *see below* Material of Thrust shaft *steel* Identification Mark on Do. *see below*  
Material of Tunnel shafts *steel* Identification Marks on Do. *see below* Material of Screw shafts *steel* Identification Marks on Do. *see below*  
Material of Steam Pipes *lap welded iron* Test pressure *525 lbs*  
Is an installation fitted for burning oil fuel *no* 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.)  
*Tunnel shafts Nos. 3287, 3296, 3291, 3288. 12 mark 19/5/19.*  
*These engines & boilers have been built under special Survey. The materials & workmanship are of good description. They have been well fitted on board & tried under steam. This machinery is now in my opinion eligible for notification of + L.M.C. 5. 20. in the Register.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 5. 20.

*J.W.D. 13/5/20 G.R.*

The amount of Entry Fee ... £ 2 : :  
Special ... £ 33 : 5 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, *10/5/20*  
When received, *22/6/20*

*A. McLeod*  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 11 MAY 1920

Assigned + L.M.C. 5. 20  
MACHINERY UNIT  
WHITTEN  
*11.5.20*



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*Edinburgh*  
*5.5.20*

The Surveyors are requested not to write on or below the space for Committee's Minute.