

REPORT ON MACHINERY.

No. 39547
WED. FEB. 4 - 1920

Received at London Office

of writing Report

19

When handed in at Local Office

26. 1.

1920

Port of Glasgow

Survey held at Coatbridge.

Date, First Survey 27. 5. 19.

Last Survey

20. 1. 1920

on the Machinery for S.S. "Pentland Firth".

(Number of Visits 25.

Gross 638

Tons Net 296.

When built 1919.

ter T. Black.

Built at Ardrossan.

By whom built Ardrossan Ship Co. Ltd. 306

nes made at Coatbridge.

By whom made Wm Beardmore 1300 HP 545.

when made 1919.

er made at Paisley

By whom made Fleming & Ferguson

when made 1919.

tered Horse Power

Owners

Gillie & Co

Port belonging to Glasgow

Horse Power as per Section 28 99.

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

INES, &c.—Description of Engines

Triple Expansion

No. of Cylinders 3

No. of Cranks 3

of Cylinders 14" 23" 38"

Length of Stroke 27"

Revs. per minute 103

Dia. of Screw shaft

as per rule 8.08"

Material of M.S.

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

propeller boss

Yes

If the liner is in more than one length are the joints burned

Yes

If the liner does not fit tightly at the part

on the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

Yes

If two

are fitted, is the shaft lapped or protected between the liners

Length of stern bush 36"

of Tunnel shaft

as per rule 7.119"

Dia. of Crank shaft journals

as per rule 7.44"

Dia. of Crank pin 7.625"

Size of Crank webs 15" x 4 1/2"

Dia. of thrust shaft under

s 7.625"

Dia. of screw 10" - 0"

Pitch of Screw 11" - 0"

No. of Blades 4

State whether moveable No

Total surface 33 1/2 sq ft

of Feed pumps 2

Diameter of ditto 3"

Stroke 13 1/2"

Can one be overhauled while the other is at work Yes

of Bilge pumps 2

Diameter of ditto 2 1/2"

Stroke 13 1/2"

Can one be overhauled while the other is at work Yes

of Donkey Engines Two

Sizes of Pumps

6 x 4 1/4 x 6 Feed

7 x 8 x 8 Ballant

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

Engine Room 2 @ 2 1/2" 2 @ 2"

In Holds, &c. Fore peak 1 @ 2 1/2" No. 1 2 @ 2 No. 2 2 @ 2

ter peak 1 @ 2 1/2"

Bilge Injections 1

sizes 3 1/2"

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Yes 2 1/2"

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

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

Yes

Are they Valves or Cocks

Both

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

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

pipes are carried through the bunkers

Forward Suction

How are they protected

Wood casing

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

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

Yes

of examination of completion of fitting of Sea Connections

20/8/19

of Stern Tube

20/8/19

Screw shaft and Propeller 20/8/19

Screw Shaft Tunnel watertight

No tunnel

Is it fitted with a watertight door

Yes

worked from

ERS, &c.—(Letter for record

Manufacturers of Steel

Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

ing Pressure

Tested by hydraulic pressure to

Date of test

No. of Certificate

each boiler be worked separately

Area of fire grate in each boiler

No. and Description of Safety Valves to

boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

est distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

Leak

Material of shell plates

ness Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

seams Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

entages of strength of longitudinal joint

rivets

Working pressure of shell by rules

Size of manhole in shell

f compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

h of plain part

top

Thickness of plates

crown

Description of longitudinal joint

No. of strengthening rings

ing pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

ial of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space

ial

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

ter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

ness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

ter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

across wide water

Working pressures by rules

Girders to Chamber tops: Material

Depth and

ess of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

ing pressure by rules

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

ely

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

ened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

ing pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Lloyd's Register

Foundation

W240-0038

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description	When made	Where fixed
Made at	By whom made	No. of Certificate	Fire grate area
Working pressure	tested by hydraulic pressure to	Date of test	Date of adjustment
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long. seams
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey

SPARE GEAR. State the articles supplied:— *Two connection rod top end bolts & nuts, Two bottom end bolts & nuts, Two main bearing bolts & nuts, one set feed bilge pump valves, one set coupling bolts & nuts, Assorted iron & bolts & nuts*

The foregoing is a correct description,

WILLIAM BEARDMORE & CO., LIMITED. Manufacturer. *per R. Sneddon*

Dates of Survey while building
 During progress of work in shops — 1919 May 24 June 10-12-14-19-23 July 8-28 Aug. 11-15-20-26 Sept 2-15-19-23 Oct 1-7-10-31
 During erection on board vessel — 1920 Jan 20
 Total No. of visits 25

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 11-8-19 Slides 15-8-19 Covers 11-8-19 Pistons 11-8-19 Rods 11-8-19 Material of Connecting rods 15-8-19 Crank shaft 28-4-19 Thrust shaft 11-8-19 Tunnel shafts *none* Screw shaft 11-8-19 Propeller 11-8-19 Stern tube 11-8-19 Steam pipes tested 29-12-19 Engine and boiler seatings 10/12/19 Engines holding down bolts 10/12/19 Completion of pumping arrangements 20-1-20 Boilers fixed 27-12-19 Engines tried under steam 20-1-20 Main boiler safety valves adjusted 20-1-20 Thickness of adjusting washers *Port Valve 3/8 Starb Valve 3/8* Identification Mark on Do. *HP 2453* Material of Crank shaft M. S. Identification Mark on Do. *HP 28719* Material of Thrust shaft M. S. Identification Marks on Do. *HP 28719* Material of Tunnel shafts *none* Identification Marks on Do. *—* Material of Screw shafts M. S. Identification Marks on Do. *—* Material of Steam Pipes *Solid drawn copper* Test pressure *360 lb.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery has been built under Special Survey and in accordance with the Rules of the Society. The Machinery has been dispatched to Glasgow to be fitted on board.*

The engines and boiler have now been securely fitted on board the vessel and tried under steam with satisfactory results. The machinery is eligible in our opinion to have notification of +LMC 1-20 in the Register Book

It is submitted that this vessel is eligible for THE RECORD +LMC 1-20

The amount of Entry Fee .. £ 1 : :
 Special .. £ 14 : 17 :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 3/2/20.
 When received, 8/4/20

Committee's Minute **GLASGOW 3-FEB-1920**

Assigned **+LMC 1,20**

MACHINERY CERT,
 WRITTEN 4-2-20

John Barr. R. W. Coombe
 Engineer Surveyor to Lloyd's Register of British & Foreign



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