

REPORT ON MACHINERY.

No. 69670

Received at London Office

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Date of writing Report 25th Feb 1917 When handed in at Local Office 28th Feb 1917 Port of Newcastle on Tyne
 No. in Survey held at South Shields Date, First Survey 20th Sept 1915 Last Survey 21st Feb 1917
 Reg. Book. 17 on the S.S. Harkworth (Number of Visits 94 Gross 4519 Tons Net 2908)
 Master S. Shields Built at S. Shields By whom built J. Readhead & Son Ltd When built 1917
 Engines made at S. Shields By whom made J. Readhead & Son Ltd when made 1917
 Boilers made at S. Shields By whom made J. Readhead & Son Ltd when made 1917
 Registered Horse Power _____ Owners (R. J. Dalghies) Port belonging to Newcastle
 Nom. Horse Power as per Section 28 443 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 27, 44 1/2, 74 Length of Stroke 48 Revs. per minute 63 Dia. of Screw shaft 14 1/8 Material of Iron
 as fitted 15 screw shaft

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 Yes 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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5-0

Dia. of Tunnel shaft 13-37 as per rule 13-37 Dia. of Crank shaft journals 14-03 as per rule 14-03 Dia. of Crank pin 4 1/8 Size of Crank web 18-9 1/8 Dia. of thrust shaft under

collars 14 1/2 Dia. of screw 17-9 Pitch of Screw 3 to 17-6 No. of Blades 4 State whether moveable No Total surface 95 sq ft

No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 30 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 30 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 7 1/2, 4, 7 1/2, 9, 11, 10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2 diameter In Holds, &c. Two 3 1/2 in each and one

2 1/2 in tunnel well

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes, 3 1/2

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices in Engine room bulkheads always accessible Yes

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 plates Yes

What pipes are carried through the bunkers pipes for fuel How are they protected Wood boxing

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

Dates of examination of completion of fitting of Sea Connections 3/10/16, 5/10/16, 12/5, 13/5/16, 6/10/16, 17/10/16 of Stern Tube 4/2/17 Screw shaft and Propeller 4/2/17

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record T) Manufacturers of Steel J. Spencer & Son Ltd

Total Heating Surface of Boilers 7270 sq ft Is Forced Draft fitted No No. and Description of Boilers 3 Single Ended

Working Pressure 180 lb per sq in Tested by hydraulic pressure to 360 lb per sq in Date of test 23/7/16 No. of Certificate 8377

Can each boiler be worked separately Yes Area of fire grate in each boiler 57 1/4 sq ft No. and Description of Safety Valves to

each boiler one direct spring Area of each valve 7.07 sq in Pressure to which they are adjusted 185 lb per sq in Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 7-0 Mean dia. of boilers 15.4 Length 11-6 Material of shell plates Steel

Thickness 1 1/4 Range of tensile strength 28 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR Riv

long. seams DRS 5 riv Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 9 7/16 Lap of plates or width of butt straps 21 1/4

Per centages of strength of longitudinal joint rivets 86.2 Working pressure of shell by rules 182 lb Size of manhole in shell 16" x 12"

Size of compensating ring 7" x 1 1/4" No. and Description of Furnaces in each boiler 3 Dighton Material Steel Outside diameter 46"

Length of plain part top 7 1/2 Thickness of plates bottom 9 1/16 Description of longitudinal joint Welded No. of strengthening rings Yes

Working pressure of furnace by the rules 191 Combustion chamber plates, Material Steel Thickness: Sides 23/32 Back 23/32 Top 23/32 Bottom 1"

Pitch of stays to ditto: Sides 10 x 9 1/4 Back 7 1/8 x 9 1/8 Top 10 x 9 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 187

Material of stays Iron Diameter at smallest part 2.310 Area supported by each stay 95 Working pressure by rules 218 End plates in steam space:

Material Steel Thickness 1 1/4 Pitch of stays 21 x 19 1/2 How are stays secured Double nuts Working pressure by rules 180 Material of stays Steel

Diameter at smallest part 7.24 Area supported by each stay 409 Working pressure by rules 183 Material of Front plates at bottom Steel

Thickness 7/8 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 13" Working pressure of plate by rules 204

Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 Material of tube plates Steel Thickness: Front 7/8 Back 7/8 Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14" Working pressures by rules 244 lb Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 1/4 x 1 1/4 Length as per rule 31 1/2 Distance apart 10" Number and pitch of stays in each Two 9 1/2"

Working pressure by rules 183 lb Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

separately _____ Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet

holes _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____

If stiffened with rings _____ Distance between rings _____ Working pressure by rules _____ End plates: Thickness _____ How stayed _____

Working pressure of end plates _____ Area of safety valves to superheater _____ Are they fitted with easing gear _____

RE

Port of *Am*No. in on the
Reg. Book 17 Buil

Owners

Yard No. 45

DESCRIPTION

One bow

100 lbs st

Capacity of Dyn

Where is Dynam

Position of Main

Positions of aux

contra

If fuses are fitt

circuits

If vessel is wire

Are the fuses of

Are all fuses fi

are perman

Are all switches

Total number of

A Project

B Wire

C Eng Room

D Eng Room

E Saloon

2 Mast

2

5

If arc lights, wh

hexagon

Where are the

DESCRIPTION

Main cable carry

Branch cables co

Branch cables co

Leads to lamps c

Cargo light cables

DESCRIPTION

Mains c

Machinery

Cabin Acc

Joints in cables,

Are all the joint

positions, n

Are there any j

How are the ca

IS A DONKEY BOILER FITTED? *No*If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied

Two top and two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts and nuts, one set each of fuel & bilge pump valves, assorted bolts and nuts, a few bars of iron, one propeller & one propeller shaft.

The foregoing is a correct description,
For JOHN READHEAD & SONS, LIMITED,

John Readhead

Manufacturer.

DIRECTOR

Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits

Dates of Examination of principal parts
Cylinders 15/6, 11/7/16
Connecting rods 2/6, 15/6
Crank shaft 17/7/16
Thrust shaft 17/7/16
Tunnel shafts 17/7/16
Screw shaft 17/7/16
Propeller 17/7/16
Engines holding down bolts 22/12/16
Engines tried under steam 31/1/17
Boilers fixed 9/1/17
Thicknes of adjusting washers 21/3D
Material of Thrust shaft Metal Identification Mark on Do. MR
Material of Screw shaft Metal Identification Marks on Do. 7192DDW
Material of Steam Pipes Copper
Test pressure 360 lbs per sq. in.
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?

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.) The engines & boilers of this vessel have been built under special survey, the materials and workmanship are of good quality they have been securely fitted on board & satisfactorily tried under steam. The machinery of this vessel is now in my opinion eligible for record in LMC 2.17 (in red) in the register book.

Boiler plan, invoices & 2 shafting reports now forwarded.

This vessel is fitted with wireless telegraphy.

It is submitted that
this vessel is eligible for
THE RECORD + LMC 2.17.

The amount of Entry Fee ... £ 3 : 0 :
Special ... £ 42 : 3 :
Donkey Boiler Fee ... £
Travelling Expenses (if any) £

When applied for,

2 - MAR 1917

When received,

6.3.17

Committee's Minute

Assigned

MACHINERY CERTIFICATE
WRITTEN.



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Foundation