

REPORT ON MACHINERY

No. 61982

FRI. MAR. 22. 1912

Date of writing Report 21st March 1912 When handed in at Local Office 21st March 1912 Port of Newcastle on Tyne
 No. in Survey held at South Shields Date, First Survey 4th Oct. 1911 Last Survey 20th March 1912
 Reg. Book. 49 on the Scrub Lug Dreadful (Number of Visits 59) Gross 250
 Tons Net 92

Master S Shields Built at Shields By whom built Hepple & Co Ld When built 1912

Engines made at S Shields By whom made Hepple & Co Ld when made 1912

Boilers made at Hebburn By whom made Palmer & Co & Iron Works when made 1912

Registered Horse Power 107 Owner Canadian Western Lumber Co Port belonging to British

Nom. Horse Power as per Section 28 107 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 15, 23 1/2, 38 Length of Stroke 30 Revs. per minute 100 Dia. of Screw shaft 8 1/2 Material of Steel
 as per rule 8 1/2 as fitted 9 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 4 1/2

Dia. of Tunnel shaft 7 1/2 as per rule 7 1/2 Dia. of Crank shaft journals 8 as per rule 8 Dia. of Crank pin 8 Size of Crank webs 14 1/2 x 5 1/2 Dia. of thrust shaft under

collars 8 Dia. of screw 1 1/2 Pitch of Screw 13-0 No. of Blades 4 State whether moveable No Total surface 37 sq ft

No. of Feed pumps 2 Diameter of ditto 2 1/2 Stroke 15 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 2 1/2 Stroke 15 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 7 1/2 x 5 1/2, 6 x 6, 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room One 2" diam In Holds, &c. Four 2" diameter

No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes, 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 Yes

Are all connections with the sea direct on the skin of the ship Yes Are the 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 None 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

Dates of examination of completion of fitting of Sea Connections 20/12/11 of Stern Tube 11/1/12 Screw shaft and Propeller 27/2/12

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record S) Manufacturers of Steel See attached report on boiler

Total Heating Surface of Boilers 1970 sq ft Is Forced Draft fitted No No. and Description of Boilers One, Single Ended

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 21/12/11 No. of Certificate 8253

Can each boiler be worked separately Yes Area of fire grate in each boiler 63 sq ft No. and Description of Safety Valves to

each boiler No, direct spring Area of each valve 7.07 sq ft Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers 16" Mean dia. of boilers 15-0 Length 12-0 Material of shell plates Steel

Thickness 1/2" Range of tensile strength 40,000 lb Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams

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

Per centages of strength of longitudinal joint 85% Working pressure of shell by rules 180 lb Size of manhole in shell

Size of compensating ring 12" No. and Description of Furnaces in each boiler One Material Steel Outside diameter

Length of plain part 12" Thickness of plates 1/2" Description of longitudinal joint Butt No. of strengthening rings

Working pressure of furnace by the rules 180 lb Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"

Pitch of stays to ditto: Sides 12" Back 12" Top 12" If stays are fitted with nuts or riveted heads Yes Working pressure by rules

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 12 sq ft Working pressure by rules 180 lb End plates in steam space:

Material Steel Thickness 1/2" Pitch of stays 12" How are stays secured By nuts Working pressure by rules 180 lb Material of stays

Diameter at smallest part 1 1/2" Area supported by each stay 12 sq ft Working pressure by rules 180 lb Material of Front plates at bottom

Thickness 1/2" Material of Lower back plate Steel Thickness 1/2" Greatest pitch of stays 12" Working pressure of plate by rules

Diameter of tubes 1 1/2" Pitch of tubes 12" Material of tube plates Steel Thickness: Front 1/2" Back 1/2" Mean pitch of stays

Pitch across wide water spaces 12" Working pressures by rules 180 lb Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 12" Length as per rule 12" Distance apart 12" Number and pitch of stays in each

Working pressure by rules 180 lb Superheater or Steam chest; how connected to boiler By pipe Can the superheater be shut off and the boiler worked

separately Yes Diameter 12" Length 12" Thickness of shell plates 1/2" Material Steel Description of longitudinal joint Butt Diam. of rivet

holes 1 1/8" Pitch of rivets 4" Working pressure of shell by rules 180 lb Diameter of flue 12" Material of flue plates Steel Thickness

If stiffened with rings Yes Distance between rings 12" Working pressure by rules 180 lb End plates: Thickness 1/2" How stayed

Working pressure of end plates 180 lb Area of safety valves in superheater 12 sq ft Are they fitted with easing gear Yes

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *None* Description *None*

Made at *None* By whom made *None* When made *None* Where fixed *None*

Working pressure tested by hydraulic pressure to *None* Date of test *None* No. of Certificate *None* Fire grate area *None* Description of Safety *None*

Valves *None* No. of Safety Valves *None* Area of each *None* Pressure to which they are adjusted *None* Date of adjustment *None*

If fitted with easing gear *None* If steam from main boilers can enter the donkey boiler *None* Dia. of donkey boiler *None* Length *None*

Material of shell plates *None* Thickness *None* Range of tensile strength *None* Descrip. of riveting long. seams *None* Rivets *None*

Dia. of rivet holes *None* Whether punched or drilled *None* Pitch of rivets *None* Lap of plating *None* Per centage of strength of joint *None* Plates *None*

Working pressure of shell by rules *None* Thickness of shell crown plates *None* Radius of do. *None* No. of stays to do. *None* Dia. of stays *None*

Diameter of furnace Top *None* Bottom *None* Length of furnace *None* Thickness of furnace plates *None* Description of joint *None*

Working pressure of furnace by rules *None* Thickness of furnace crown plates *None* Stayed by *None*

Diameter of uptake *None* Thickness of uptake plates *None* Thickness of water tubes *None* Dates of survey *None*

SPARE GEAR. State the articles supplied:— *Propeller, propeller shaft, 2 top end brasses, one set of air pump valves, 2 top & 2 bottom end bolts & nuts, one set coupling bolts & nuts, one set of feed & bilge pump valves, assorted bolts & nuts & rivets, 10 condenser tubes etc.*

The foregoing is a correct description,

W. J. Hepple & Co. Ltd

Manufacturer.

Dates of Survey while building *1911* During progress of work in shops *Oct. 4-12-13-14-16-18-20-24-26 Nov. 3-6-9-14-15-21-22-23-24 Dec. 4-13-19-20-21-22-27-28-30*

During erection on board vessel *1912* *Jan. 5-8-10-11-15-17-19-22-24-29-30-31 Feb. 2-5-7-12-14-21-22-23-26-27-28-29 Mar. 1-4-6-7-11-12-16-20*

Total No. of visits *58* Is the approved plan of main boiler forwarded herewith *Yes.*

Dates of Examination of principal parts *14/11, 21/11* Cylinders *21/11, 27/11* Slides *21/11, 27/11* Covers *21/11, 27/11* Pistons *21/11, 27/11* Rods *21/11, 27/11*

Connecting rods *21/11, 27/11* Crank shaft *21/11, 27/11* Thrust shaft *21/11, 27/11* Tunnel shafts *21/11, 27/11* Screw shaft *21/11, 27/11* Propeller *21/11, 27/11*

Stern tube *13/12, 20/12/11* Steam pipes tested *14/2/12* Engine and boiler seatings *5/10/11, 19/2/12* Engines holding down bolts *5/10/11, 19/2/12*

Completion of pumping arrangements *18/3/12* Boilers fixed *28/30/12/11* Engines tried under steam *7/3/12*

Main boiler safety valves adjusted *7/3/12* Thickness of adjusting washers *13/32" & 14/32"*

Material of Crank shaft *2891* Identification Mark on Do. *W.D.H.* Material of Thrust shaft *2891* Identification Mark on Do. *W.D.H.*

Material of Tunnel shafts *2891* Identification Marks on Do. *W.D.H.* Material of Screw shaft *2891* Identification Marks on Do. *W.D.H.*

Material of Steam Pipes *Copper* Test pressure *360 lb per sq. in.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under special survey, the materials & workmanship are of good quality, it & the boiler have been securely fitted on board and satisfactorily tested under steam.*

In my opinion this vessel is now eligible for record of L.M.C. 3-12 in register book.

Boiler plan, 3 forging reports, boiler invoices & opt on boiler now attached.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.12.

J.W.D. 21/3/12

George Hurdock
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ *2 : 0 :* When applied for, *MAR 20 1912*

Special .. £ *16 : 0 :* When received, *26-11-12*

Donkey Boiler Fee .. £ *2 : 0 :*

Travelling Expenses (if any) £ *2 : 0 :*

Committee's Minute *TUE. MAR. 26. 1912*

Assigned *+ L.M.C. 3.12.*

MACHINERY CERTIFICATE
WRITTEN