

## REPORT ON MACHINERY.

No. 24592

Port of Sunderland Received at London Office 11.13 SEP 1910

No. in Survey held at Sunderland Date, first Survey 1910 25th May Last Survey 2nd September 1910

Reg. Book. SS "Moorelands" (Number of Visits 1st)

on the SS "Moorelands" Tons { Gross 3600 Net 2281

Master E. R. Hind Built at Sunderland By whom built New Delford & Sons Ltd (H) When built 1910

Engines made at Sunderland By whom made New Delford & Sons Ltd (H) when made 1910

Boilers made at do By whom made do when made 1910

Registered Horse Power 331 Owners The Eskside Steam Shipping Co Port belonging to W. R. H. H.

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

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

Dia. of Cylinders 25" x 40" x 64" Length of Stroke 45" Revs. per minute 54 Dia. of Screw shaft 14 1/2" Material of high 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

Is 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 8'-2 1/2"

Dia. of Tunnel shaft 12 3/4" Dia. of Crank shaft journals 13 3/4" Dia. of Crank pin 13 1/2" Size of Crank webs 9 1/2" Dia. of thrust shaft under

collars 13 3/4" Dia. of screw 1 1/2" Pitch of Screw 20'-0" No. of Blades 4 State whether moveable No Total surface 95 ft

No. of Feed pumps 2 Diameter of ditto 4 1/4" Stroke 26" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 26" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 1 @ 6" x 4" x 6", 1 @ 4 1/2" x 2 1/2" x 4", 1 @ 9" x 9" x 9" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 @ 3 1/2" dia + 2 @ 3 1/2" in bilge room In Holds, &c. 2 @ 3 1/2" in each hold

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump C.P. 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 on 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 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 5-8-10 of Stern Tube 5-8-10 Screw shaft and Propeller 17-8-10

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top Platform

OILERS, &c.—(Letter for record John Spencer & Sons Manufacturers of Steel Newburn Steel Works

Total Heating Surface of Boilers 5224 Is Forced Draft fitted No No. and Description of Boilers Two Single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 25-7-10 No. of Certificate 2845

Can each boiler be worked separately Yes Area of fire grate in each boiler 61.2 ft No. and Description of Safety Valves to

each boiler One double spring loaded Area of each valve 12.566 ft Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 16'-6" Length 11'-0" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.

long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 19 1/4" x 1 1/2"

Per centages of strength of longitudinal joint 95% Working pressure of shell by rules 180.1 Size of manhole in 16" x 12"

Size of compensating ring Dished No. and Description of Furnaces in each boiler 3. Cor. T. H. Material Steel Outside diameter 59 1/4"

Length of plain part 19 Thickness of plates 30 Description of longitudinal joint weld No. of strengthening rings None

Working pressure of furnace by the rules 180.4 Combustion chamber plates: Material Steel Thickness: Sides 3 1/2" Back 3 1/2" Top 4 3/4" Bottom 13"

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

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 82 sq Working pressure by rules 222 lbs End plates in steam space:

Material Steel Thickness 1 1/2" Pitch of stays 19 x 18 3/8" How are stays secured D.N. Wash. Working pressure by rules 181 lbs Material of stays Steel

Diameter at smallest part 2 1/8" Area supported by each stay 348 sq Working pressure by rules 180 lbs Material of Front plates at bottom Steel

Thickness 1 1/2" Material of Lower back plate Steel Thickness 1 1/2" Greatest pitch of stays 13" Working pressure of plate by rules 182 lbs

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

Pitch across wide water spaces 13 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10 1/2" x 1 1/2" Length as per rule 36 3/4" Distance apart 9 1/2" Number and pitch of stays in each 3 @ 9"

Working pressure by rules 182 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

separately Yes Diameter 18 1/2" Length 18 1/2" Thickness of shell plates 1 1/2" Material Steel Description of longitudinal joint Diam. of rivet

holes 1 1/2" Pitch of rivets 1 1/2" Working pressure of shell by rules 185 lbs Diameter of flue 15 1/2" Material of flue plates Steel Thickness 1 1/2"

If stiffened with rings Yes Distance between rings 18 1/2" Working pressure by rules 185 lbs End plates: Thickness 1 1/2" How stayed Yes

Working pressure of end plates 182 lbs Area of safety valves to superheater 1850-0020 Are they fitted with easing gear Yes

1850-0020



VERTICAL DONKEY BOILER—Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Sa \_\_\_\_\_  
 Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_  
 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 \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_  
 Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:—2 bow rod to end bolts & nuts, 2 ditto bottom end, 2 main bearing bolts & nuts, 1 set coupling bolts & nuts, 1 set feed & bilge pump valves & seats, 1 Tail shaft & Propeller, 12 Junk ring bolts, 6 high cover studs, 30 lower ferrules & 12 tubes, 1 set Air pump valves, Assorted bolts, nuts & iron.

The foregoing is a correct description,

WILLIAM DOXFORD & SONS, Limited.

Manufacturer.

Director.

Dates of Survey while building { During progress of work in shops - - } 1910 May 25, June 8, 21, July 1, 25, Aug 5, 11, 13, 16, 18, 23, 24, 27 Sept 2  
 { During erection on board vessel - - }  
 Total No. of visits 14.

Is the approved plan of main boiler forwarded herewith

yes  
yes

Dates of Examination of principal parts—Cylinders 4-7-10 Slides 4-7-10 Covers 24-6-10 Pistons 24-6-10 Rods 4-7-10  
 Connecting rods 8-6-10 Crank shaft 24-6-10 Thrust shaft 5-8-10 Tunnel shafts 5-8-10 Screw shaft 5-8-10 Propeller 5-8-10  
 Stern tube 25-4-10 Steam pipes tested 11-8-10 & 18-8-10 Engine and boiler seatings 5-8-10 Engines holding down bolts 24-8-10  
 Completion of pumping arrangements 24-8-10 Boilers fixed 22-8-10 Engines tried under steam 24-8-10 + 2-9  
 Main boiler safety valves adjusted 24-8-10 Thickness of adjusting washers Port 1/2" Stand 3/8" Port 5/16" Stand 3/8"  
 Material of Crank shaft Steel Identification Mark on Do. 1439 H3 Material of Thrust shaft Steel Identification Mark on Do. 1426  
 Material of Tunnel shafts Steel Identification Marks on Do. 1461, 1463, 1464, 1466, 1468, 1469 Material of Screw shafts Steel Identification Marks on Do. 1427  
 Material of Steam Pipes Copper. Solid drawn, 4-5 1/2" long x 3 W.G. Test pressure 400 lbs.

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

The machinery of this vessel has been built under special survey and the material and workmanship are of good quality. The Boilers were satisfactorily tested by hydraulic pressure and their safety valves adjusted under steam. The Engines have been tried under steam and worked satisfactorily.

The machinery of this vessel is in good & safe working condition, & eligible in my opinion to be classed with record, + L.M.C. 9.10. in the Register Book.

It is submitted that  
 this vessel is eligible for  
 THE RECORD. + L.M.C. 9.10.

The amount of Entry Fee.. £ 3 : : When applied for, 12 Sept 1910  
 Special .. £ 36 : :  
 Donkey Boiler Fee .. : :  
 Travelling Expenses (if any) £ : : When received, 14.9.1910

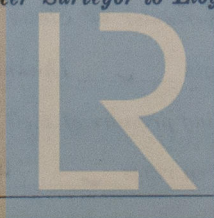
Committee's Minute

Assigned

FRI. 16 SEP 1910  
 MACHINERY CERTIFICATE  
 WRITTEN

William Butler

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



Lloyd's Register  
 Foundation