

REPORT ON MACHINERY.

No. 64228

Received at London Office

WED. MAY 21. 1913

Date of writing Report

19

When handed in at Local Office

MAY 20 1913

Port of

NEWCASTLE-ON-TYNE.

No. in Survey held at

South Shields

Date, First Survey

2nd Dec 1912

Last Survey

9th May 1913

Reg. Book.

(Number of Visits

40

97th in the

S.S.

Trevider

Master

Built at South Shields

By whom built

John Readhead & Sons Ltd.

When built

1913

Engines made at

South Shields

By whom made

John Readhead & Sons Ltd.

when made

1913

Boilers made at

South Shields

By whom made

John Readhead & Sons Ltd.

when made

1913

Registered Horse Power

Owners Hain S.S. Co. Ltd. (E. Hain & Son Mgrs)

Port belonging to

H. J. J. J.

Nom. Horse Power as per Section 28

385

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

No.

ENGINES, &c.—Description of Engines Triple Expansion Surface Condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 26" - 42" - 69" Length of Stroke 48" Revs. per minute 144 Dia. of Screw shaft 14.4" Material of screw shaft Iron
 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 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 4'-10"
 Dia. of Tunnel shaft as per rule 12.97 as fitted 13 Dia. of Crank shaft journals as per rule 13.61 as fitted 13.61 Dia. of Crank pin 13.61 Size of Crank webs 18"x9" Dia. of thrust shaft under collars 14.5" Dia. of screw 17'-6" Pitch of Screw 16'-6"/18'-6" No. of Blades 4 State whether moveable No. Total surface 87 sq ft
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 3/8" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 13 1/2"x9"x13" 7 1/2"x5"x6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 - Port 3 1/2", Centre 3 1/2", Starboard 3 1/2" In Holds, &c. Two in each hold, port 3 1/2", starboard 3 1/2"
 Tunnel well suction 2 1/2"
 No. of Bilge Injections 1 sizes 5 1/2" Connected to condenser, or to circulating pump pump 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
 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
 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 8-4-13 of Stern Tube 8-4-13 Screw shaft and Propeller 8-4-13
 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. 7.) Manufacturers of Steel John Spencer & Sons Ltd.

Total Heating Surface of Boilers 6330 sq ft Is Forced Draft fitted No. No. and Description of Boilers Two single-ended multitubular
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 4-4-13 No. of Certificate 8471
 Can each boiler be worked separately Yes Area of fire grate in each boiler 66 sq ft No. and Description of Safety Valves to each boiler Two Spring-loaded Area of each valve 7.07 sq 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 1'-6" Mean dia. of boilers 17'-1 3/4" Length 11'-6" Material of shell plates Steel
 Thickness 1 7/8" Range of tensile strength 28/32 tons Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Both Lap long. seams Both butt straps Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 3/32" Lap of plates or width of butt straps 1'-9 3/4"
 Per centages of strength of longitudinal joint rivets 85-38 2a plate 88-38 2a Working pressure of shell by rules 182 lbs Size of manhole in shell 16"x12"
 Size of compensating ring 7"x1 3/8" No. and Description of Furnaces in each boiler 3-motion Material Steel Outside diameter 4'-3"
 Length of plain part top 19" bottom 32" Thickness of plates crown 19" bottom 32" Description of longitudinal joint weld No. of strengthening rings 1
 Working pressure of furnace by the rules 185 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 3/32" Top 3/32" Bottom 1"
 Pitch of stays to ditto: Sides 10"x9 1/4" Back 9 1/4"x9 1/4" Top 10"x9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 193 lbs
 Material of stays Iron Diameter at smallest part 1 3/8" Area supported by each stay 930" Working pressure by rules 186 lbs End plates in steam space: Material Steel Thickness 1 7/16" Pitch of stays 25"x21" How are stays secured On wedges Working pressure by rules 185 lbs Material of stays Steel
 Diameter at smallest part 3.53" Area supported by each stay 528" Working pressure by rules 194 lbs Material of Front plates at bottom Steel
 Thickness 7/8" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 13"x9 1/16" Working pressure of plate by rules 211 lbs
 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 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/4"x2" Length as per rule 30.5" Distance apart 10" Number and pitch of stays in each 2-9"
 Working pressure by rules 247 lbs 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

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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 Safety
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 feed the donkey boiler	Dia. of donkey boiler	Length		
Material of shell plates	Thickness	Range of inside length	Descrip. of riveting along 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	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:— Propeller, propeller shaft - 3rd crank shaft - two top end bolts - two bottom end bolts - two main bearing bolts - one set of coupling bolts - one set each of feed & large pump valves - one set each air & circulating pump valves, as needed bolts & nuts & various other

The foregoing is a correct description,

John Headhead Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1912 Dec. 24-6-17-30 Jan 3-7-14-20-23-25 Feb 4-6-10-13-17-22-28 Mar 5-9-19-25-26-27-28-31
	During erection on board vessel - - -	Apr 1-3-4-8-10-14-16-21-22-25-29-30 May 1-9
	Total No. of visits	40

Is the approved plan of main boiler forwarded herewith ☒ Yes

Dates of Examination of principal parts—	Cylinders	6 th Feb	Slides	22 nd Feb	Covers	10 th Feb	Pistons	17 th Feb	Rods	13 th Feb	
Connecting rods	5-3-13	Crank shaft	5-3-13	Thrust shaft	8 th Apr	Tunnel shafts	8 th Apr	Screw shaft	8 th Apr	Propeller	19 th Mar
Stern tube	1 st Apr	Steam pipes tested	25 th April	Engine and boiler seatings	14 th Apr	Engines holding down bolts	30 th April				
Completion of pumping arrangements	29 th April	Boilers fixed	21 st April	Engines tried under steam	1 st May						
Main boiler safety valves adjusted	1 st May	Thickness of adjusting washers	Port Blk 1 st May 2 nd May 3 rd May 4 th May 5 th May 6 th May 7 th May 8 th May 9 th May 10 th May 11 th May 12 th May 13 th May 14 th May 15 th May 16 th May 17 th May 18 th May 19 th May 20 th May 21 st May 22 nd May 23 rd May 24 th May 25 th May 26 th May 27 th May 28 th May 29 th May 30 th May 31 st May								
Material of Crank shaft	Steel	Identification Mark on Do.	2415 MB	Material of Thrust shaft	Steel	Identification Mark on Do.	8190 K				
Material of Tunnel shafts	Steel	Identification Marks on Do.	5150 R.L.A	Material of Screw shafts	Steel	Identification Marks on Do.	5150 R.L.A				
Material of Steam Pipes	Copper	5 th Feb 10 th Feb 15 th Feb 20 th Feb 25 th Feb 30 th Feb 5 th Mar 10 th Mar 15 th Mar 20 th Mar 25 th Mar 30 th Mar 5 th Apr 10 th Apr 15 th Apr 20 th Apr 25 th Apr 30 th Apr 5 th May 10 th May 15 th May 20 th May 25 th May 30 th May 5 th Jun 10 th Jun 15 th Jun 20 th Jun 25 th Jun 30 th Jun 5 th Jul 10 th Jul 15 th Jul 20 th Jul 25 th Jul 30 th Jul 5 th Aug 10 th Aug 15 th Aug 20 th Aug 25 th Aug 30 th Aug 5 th Sep 10 th Sep 15 th Sep 20 th Sep 25 th Sep 30 th Sep 5 th Oct 10 th Oct 15 th Oct 20 th Oct 25 th Oct 30 th Oct 5 th Nov 10 th Nov 15 th Nov 20 th Nov 25 th Nov 30 th Nov 5 th Dec 10 th Dec 15 th Dec 20 th Dec 25 th Dec 30 th Dec 5 th Jan 10 th Jan 15 th Jan 20 th Jan 25 th Jan 30 th Jan 5 th Feb 10 th Feb 15 th Feb 20 th Feb 25 th Feb 30 th Feb 5 th Mar 10 th Mar 15 th Mar 20 th Mar 25 th Mar 30 th Mar 5 th Apr 10 th Apr 15 th Apr 20 th Apr 25 th Apr 30 th Apr 5 th May 10 th May 15 th May 20 th May 25 th May 30 th May 5 th Jun 10 th Jun 15 th 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