

Received at London Office

Date of writing Report 22<sup>nd</sup> Jan'y 1920 When handed in at Local Office 26/1/1920 Port of West Hartlepool

No. in Survey held at Hartlepool & Bristol Date, First Survey 12<sup>th</sup> June 1919 Last Survey 14<sup>th</sup> Jan'y 1920

Reg. Book. s/s Annik (C. Hill & Sons M 137) (Number of Plates 63)

Master Built at Bristol By whom built C. Hill & Sons Ld. 137 When built 1920

Engines made at Hartlepool By whom made Richardsons, Westgate & Co. Ld. when made 1920

Boilers made at Hartlepool By whom made Richardsons, Westgate & Co. Ld. when made 1920

Registered Horse Power 2422 Owners Port belonging to Nanka

Nom. Horse Power as per Section 28 2422 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion (Inverted) No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 21-34-56 Length of Stroke 36 Revs. per minute 75 Dia. of Screw shaft 11 1/2 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4-2

Dia. of Tunnel shaft 10 1/2 Dia. of Crank shaft journals 10 1/4 Dia. of Crank pin 1 3/8 Size of Crank webs 7 1/2 Dia. of thrust shaft under collars 10 1/8 Dia. of screw 14-6 Pitch of Screw 13-6 No. of Blades four State whether moveable No Total surface 66 1/2

No. of Feed pumps Two Diameter of ditto 3 Stroke 21 Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 3 1/2 Stroke 21 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps Guard Remedy 10x10 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two of 3" and 1 1/2" Two of 3" In Holds, &c. No 1 two of 3" No 2 two of 3" No 3 two of 3"

No. of Bilge Injections One size 6 Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size Yes 3"

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 None

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 Four Hold Suctions How are they protected Iron casing

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 7/1/20 of Stern Tube 19-1-20 Screw shaft and Propeller 28/2/20

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

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Spencer & Sons, & Leeds Forge Co. Ld.

Total Heating Surface of Boilers 4246 Is Forced Draft fitted No No. and Description of Boilers Two Single Ended, Light & Multi

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 7/1/19 No. of Certificate 3548

Can each boiler be worked separately Yes Area of fire grate in each boiler 55-62 No. and Description of Safety Valves to each boiler Two Direct spring Area of each valve 70 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2-0 Mean dia. of boilers 15-3 Length 10-6 Material of shell plates steel

Thickness 1 1/32 Range of tensile strength 28 1/2 to 32 1/2 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap DR

Long. seams DRS-TR Diameter of rivet holes in long. seams 1 1/32 Pitch of rivets 8 3/8 Lap of plates or width of butt straps 1 1/2

Percentages of strength of longitudinal joint 84.92 Working pressure of shell by rules 182 lbs Size of manholes in shell 13x16 1/2

Size of compensating ring 7 3/4 x 1 1/2 No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 48 1/2

Length of plain part 19 Thickness of plates 32 Description of longitudinal joint Weld No. of strengthening rings —

Working pressure of furnace by the rules 193.8 Combustion chamber plates: Material steel Thickness: Sides 19 Back 19 Top 19 Bottom 3 1/4

Pitch of stays to ditto: Sides 7 1/2 x 8 3/4 Back 8 1/4 x 8 Top 7 1/2 x 8 3/4 Are stays fitted with nuts or riveted heads margin Working pressure by rules 186 lbs

Material of stays steel Diameter at smallest part 1 3/8 x 1 1/8 Area supported by each stay 8 3/4 x 7 1/2 Working pressure by rules 180 lbs End plates in steam space —

Material steel Thickness 1 1/32 Pitch of stays 19 1/2 x 19 1/8 How are stays secured DR & DR W Working pressure by rules 180 lbs Material of stays steel

Diameter at smallest part 7 1/4 Area supported by each stay 14 x 21 Working pressure by rules 211 lbs Material of Front plates at bottom steel

Thickness 31 Material of Lower back plate steel Thickness 32 Greatest pitch of stays 14 x 8 Working pressure of plate by rules 189.5

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/4 Material of tube plates steel Thickness: Front 31 Back 25 Mean pitch of stays 11 1/4 x 8 3/8

Pitch across wide water spaces 14 1/2 Working pressures by rules 181 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 x 1 3/4 Length as per rule 30 1/2 Distance apart 8 3/4 Number and pitch of stays in each Three 7 1/2

Working pressure by rules 181 lbs Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivets — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —

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 —



IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: - 2 Top end, 2 bottom end, 2 main bearing, 1 set coupling bolts & nuts, spare piston rings & bolts, sets of valves all pumps & auxiliaries, 1 main & 1 aux. check valve.

The foregoing is a correct description,  
For RICHARDSONS, WESTGARTH & Co., Limited

*S. H. Higate*  
ASSISTANT GENERAL MANAGER

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1919 June 12, July 16, 18, 28, Aug 1, 11, 12, 20, 21, 22, 25, 26, 29, Sep 2, 4, 8, 9, 12, 23, 24, 25, 29, 30, Oct 1, 3, 4, 6, 11, 13, 14, 17, 20, 21, 22, 23, 24, 27, 31, Nov 3, 4, 7, 10, 13, 14, 17, 18, 21, 26, 27, Dec 1, 2, 3, 4, 5, 8, 10, 15, 20, 24, 1920 Jan 7, 9, 13, 14, Jan 5, 19, 20, Feb 4, 28, Mar 8, 11, 12, 19, 22, 23, 29 Apr 5, 10, 12, 17, 63. Total No. of visits

Is the approved plan of main boiler forwarded herewith? *yes*

Dates of Examination of principal parts: Cylinders  $11/19$  to  $7/19$ , Slides  $3/19$  to  $10/19$ , Cores  $29/19$ , Pistons  $4/19$  to  $14/19$ , Rods  $21/19$  to  $31/19$ , Connecting rods  $3/19$  to  $21/19$ , Crank shaft  $2/19$  to  $23/19$ , Thrust shaft  $12/19$  to  $24/19$ , Tunnel shafts  $10/19$  to  $4/20$ , Screw shaft  $27/19$  to  $9/20$ , Propeller *not cast*, Stern tube  $7/20$  to  $9/20$ , Steam pipes tested (with pressure)  $14/20$ , Engine and boiler seatings 19-1-20, Engines holding down bolts 27/3/20, Completion of pumping arrangements 12-4-20, Boilers fixed 28-2-20, Engines tried under steam 17/4/20, Main boiler safety valves adjusted 12-4-20, Thickness of adjusting washers 5  $3/8$  5  $1/4$  T. 5  $1/8$  5  $1/8$ , Material of Crank shaft *Steel*, Identification Mark on Do. (6130 11/10/19), Material of Thrust shaft *steel*, Identification Mark on Do. (6130 16/12/19), Material of Tunnel shafts *iron*, Identification Marks on Do. (6130 9/1/20), Material of Screw shafts *iron*, Identification Marks on Do. (6130 9/1/20), Material of Steam Pipes *Copper & Steel*, Test pressure 360 lbs.

Is an installation fitted for burning oil fuel? *yes* 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? *yes* *Evaporator, Cook House, Mould, 1041, 50, 3/12/19*  
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 constructed under Special Survey, the material & workmanship sound & good. The Boilers have been tested by Hydraulic pressure in accordance with the Rules & have now been sent forward to the Builder of the vessel & eligible in my opinion for the notation of L.M.C. with date, 180<sup>th</sup> in the Register Book when fitted on board.

To complete survey - propeller & steam pipes to be supplied & the structure finally turned to suit boss & the whole of the machinery to install & try under steam & under load.

These Engines & Boilers have been fitted in above vessel. Boring gear fitted & safety valves adjusted to above pressure. Machinery tried under steam with oil fuel & coal. Oil fuel installation fitted in accordance with Rules & approved Plans. Ballast tanks (double bottom) for carrying oil fuel, except tanks under Engines & Boilers. This vessel's machinery is eligible for carrying oil fuel, & except tanks under Engines & Boilers. This vessel's machinery is eligible for carrying oil fuel & burning fuel oil & carrying coal & ore cargo.

The amount of Entry Fee £ 3  
Special £ 21 8/11  
Donkey Boiler Fee £ 10 14/11  
Travelling Expenses (if any) £  
27/1/1920  
27/2/20.19

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

*G. R. Dyden Toyn*

Committee's Minute THE MAY 4 1920

Assigned + L.M.C. 4.20  
Fitted for oil fuel & 20 G.P. above 150°F  
whilst carrying coal & ore cargoes

MACHINERY CERT.  
WRITTEN.

REPO

Port of *Comp*  
No. in Reg. Book  
Owners  
Yard No. 137

DESCRIPTION OF D  
*Endow*  
*wound*

Capacity of Dynamo  
Where is Dynamo fixed  
Position of Main Switch  
Positions of auxiliary

If cut outs are fitted on circuits

If vessel is wired on the

Are the cut outs of non-

Are all cut outs fitted in

are permanent ins

Are all switches and cut

Total number of lights

A *navigational*  
B *Cargo*

is submitted to  
vessel is eligible  
RECORD +  
TED FOR OIL F  
st carrying coal 800

Where are the switches

DESCRIPTION OF CA

Main cable carrying 1

Branch cables carrying

Branch cables carrying

Leads to lamps carrying

Cargo light cables carrying

DESCRIPTION OF INS

Cable maker

had cover

Joints in cables, how made

Are all the joints of cable

made in bunkers, can

Are there any joints in on

How are the cables led th