

# REPORT ON MACHINERY.

No. 27315

Date of writing Report 19 When handed in at Local Office 20.3.14 Port of Hull  
 No. in Survey held at Hull Date, First Survey Oct. 31<sup>st</sup> Last Survey Mar 9<sup>th</sup> 1914  
 Reg. Book. 97 sub. on the Hull S. K. "ANGELUS" (Number of Visits 20)  
 Master Built at Selby By whom built Goddard & Sons Ltd. Tons Gross 304 Net 158  
 Engines made at Hull By whom made Messrs. Charles R. Adams & Co. Ltd. when made 1914  
 Boilers made at Hull By whom made Messrs. Charles R. Adams & Co. Ltd. when made 1914  
 Registered Horse Power Owners White & Willows - Port belonging to Grimsby -  
 Nom. Horse Power as per Section 28 84 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 13 $\frac{1}{2}$ " - 23" - 34" Length of Stroke 26" Revs. per minute 111 Dia. of Screw shaft as per rule 7.96" Material of screw shaft as fitted 8 $\frac{1}{2}$ "  
 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 Length of stern bush 40"  
 Dia. of Tunnel shaft as per rule 7.152" as fitted 7 $\frac{1}{2}$ " Dia. of Crank shaft journals as per rule 4.5" as fitted 4 $\frac{3}{4}$ " Dia. of Crank pin 4 $\frac{3}{4}$ " Size of Crank webs 4 $\frac{3}{8}$ " x 14 $\frac{1}{2}$ " Dia. of thrust shaft under collars 2 $\frac{3}{4}$ " Dia. of screw 9 $\frac{1}{2}$ " Pitch of Screw 11-3" No. of Blades 4 State whether moveable No. Total surface 34 ft<sup>2</sup>  
 No. of Feed pumps 1 Diameter of ditto 3" Stroke 14 $\frac{3}{4}$ " Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 1 Diameter of ditto 3" Stroke 14 $\frac{3}{4}$ " Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 6" x 4" x 6" duplex, 3.5" x 2 $\frac{3}{4}$ " x 5" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2" - one forward & one aft. In Holds, &c. One 2" to aft stow well, one 2" to middle stow well, one 2" to fore stow well, one 2" to open fish room, one 2" to fore hold. Total suction from these  
 No. of Bilge Injections 1 sizes 3 $\frac{1}{2}$ " Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 3" injection  
 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 No  
 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 Hold suction pipes How are they protected Wood 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 15.12.13 of Stern Tube 15.12.13 Screw shaft and Propeller 15.12.13  
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Messrs. Phoenix Ltd. Hilda Irving of Hilda  
 Total Heating Surface of Boilers 1420 ft<sup>2</sup> Is Forced Draft fitted No No. and Description of Boilers One cyl. mult. simple mild.  
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 29.1.14 No. of Certificate 2052  
 Can each boiler be worked separately Area of fire grate in each boiler 42 ft<sup>2</sup> No. and Description of Safety Valves to each boiler Two Spring Area of each valve 490" Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 6" Mean dia. of boilers 13-9" Length 10-6" Material of shell plates S  
 Thickness 1/32" Range of tensile strength 29,000 lbs. Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams R. B. S. & P. long. seams R. B. S. & P. Diameter of rivet holes in long. seams 1/32" Pitch of rivets 8 1/16" Lap of plates or width of butt straps 1 1/2"  
 Per centages of strength of longitudinal joint rivets 88% plate 85% Working pressure of shell by rules 203 lbs. Size of manhole in shell 16" x 12"  
 Size of compensating ring 4" x 1 1/2" No. and Description of Furnaces in each boiler 3 plain Material S Outside diameter 39"  
 Length of plain part top 6-6" bottom 6-3" Thickness of plates crown 3/16" Description of longitudinal joint field No. of strengthening rings 3 1/2" x 3 1/2" x 1/2" on bottom  
 Working pressure of furnace by the rules 206 lbs. Combustion chamber plates: Material S Thickness: Sides 3/16" Back 1/16" Top 1/16" Bottom 3/16"  
 Pitch of stays to ditto: Sides 10" x 8 1/2" Back 8 1/2" x 9 1/4" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads Yes Working pressure by rules 206 lbs.  
 Material of stays S Diameter at smallest part 20 1/4" Area supported by each stay 78.6250 Working pressure by rules 219 lbs. End plates in steam space: Material S Thickness 1/32" Pitch of stays 19 1/2" x 17" How are stays secured R. B. S. & P. Working pressure by rules 211 lbs. Material of stays S  
 Diameter at smallest part 7.50" Area supported by each stay 33.50 Working pressure by rules 235 lbs. Material of Front plates at bottom S  
 Thickness 3/32" Material of Lower back plate S Thickness 3/32" Greatest pitch of stays 14" x 9 1/4" Working pressure of plate by rules 201 lbs.  
 Diameter of tubes 3 1/2" Pitch of tubes 5 1/8" x 5" Material of tube plates S Thickness: Front 3/32" Back 3/8" Mean pitch of stays 10 1/2" x 10"  
 Pitch across wide water spaces 14 1/4" Working pressures by rules 194\* do of slope Orders to Chamber tops: Material S Depth and thickness of girder at centre 9 1/2" x 10 1/4" x 1 1/4" Length as per rule 37 1/2" Distance apart 4-9" Number and pitch of stays in each 3-8 1/2"  
 Working pressure by rules 203 lbs. Superheater or Steam chest; how connected to boiler Schmidt's Patent Can the superheater be shut off and the boiler worked separately Yes 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 1.227 ft<sup>2</sup> Are they fitted with easing gear Yes



IS A DONKEY BOILER FITTED? *no.*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: - *Two each top & bottom and connecting rod bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set each fuel & bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts etc.*

The foregoing is a correct description,  
p. pro CHARLES D. HOLMES & Co. LTD.

*Arthur Holmes* DIRECTOR

Manufacturer.

Dates of Survey while building: During progress of work in shops - *1913: Oct. 31, Nov 26, 28, Dec 4, 9, 15, 17, 23, 1914 Jan 12, 14, 15, 21, 27, 29*  
During erection on board vessel - *Feb 4, 10, 19, 26, Mar 4, 9.*  
Total No. of visits *20.*

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

Dates of Examination of principal parts - Cylinders *15.1.14* Slides *10.2.14* Covers *10.2.14* Pistons *4.2.14* Rods *4.2.14*  
Connecting rods *10.2.14* Crank shaft *4.2.14* Thrust shaft *4.2.14* Tunnel shafts *4.2.14* Screw shaft *28.11.13* Propeller *28.11.13*  
Stern tube *28.11.13* Steam pipes tested *26.2.14* Engine and boiler seatings *15.12.13* Engines holding down bolts *19.2.14*  
Completion of pumping arrangements *9.3.14* Boilers fixed *4.3.14* Engines tried under steam *4.3.14*  
Main boiler safety valves adjusted *4.3.14* Thickness of adjusting washers *Pad 5/16" Standard 3/8"*

Material of Crank shaft *Iron* Identification Mark on Do. *10997.6D* Material of Thrust shaft *S* Identification Mark on Do. *10997.6D*

Material of Tunnel shafts *Iron* Identification Marks on Do. *10997.6D* Material of Screw shafts *Iron* Identification Marks on Do. *10997.6D*

Material of Steam Pipes *Seamless Steel* Test pressure *600 lbs. per square inch hydraulic.*

Is an installation fitted for burning oil fuel *no.* Is the flash point of the oil to be used over 150° F.

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 & boiler of this vessel have been installed under special survey in accordance with the Rules. The materials & workmanship are sound & good. The boiler tested by hydraulic pressure, & with the engines secured on board & tested under steam they are now in good order & safe working condition & respectfully submitted as being eligible in my opinion to be classed with the notation of 'L.M.C. 3.14' in the Register Books.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.14.

*J.W.D.*  
*23/3/14*

The amount of Entry Fee ... £ *1 : 0* :  
Special ... £ *13 : 1* :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ *4/11* :

When applied for, *21-3.1914*

When received, *31/3/14*

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

Committee's Minute *THU. APR. 9 - 1914*

Assigned *+ L.M.C. 3.14*

MACHINERY CERTIFICATE WRITTEN.



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Rpt. 13.

Port of

No. in Reg. Book *974*

Owners

Yard No. *5*

DESCRIPTION

Capacity of D

Where is Dyn

Position of M

Positions of a

If cut outs are

circuits

If vessel is wir

Are the cut outs

Are all cut outs

are perman

Are all switches

Total number of

A *24*

B *6*

C *1*

D

E *3*

Mast he

*2* Si

*8*

If are lights, wha

Where are the su

DESCRIPTION O

Main cable carrying

Branch cables carry

Branch cables carry

Leads to lamps carry

Cargo light cables ca

DESCRIPTION OF

Solid

+ compo

Joints in cables, how

Are all the joints of

made in bunkers

Are there any joints

How are the cables le