

REPORT ON MACHINERY.

No. 11484.

Received at London Office

FRI. MAY. 15. 1914

Date of writing Report 14. 5. 1914 When handed in at Local Office 14. 5. 1914 Port of Aberdeen

No. in Survey held at Aberdeen Date, First Survey 4. 1. 14 Last Survey 5. 5. 1914

Reg. Book. on the S.S. "WHINHILL" (Number of Visits 36.)

Master Thomas Allison Built at Aberdeen By whom built Hall Russell & Co. Ltd. No. 548 Tons Gross 448.25 Net 193.42

Engines made at Aberdeen By whom made Hall Russell & Co. Ltd. No. 548. when made 1914

Boilers made at do. By whom made when made 1914

Registered Horse Power 81. Owners C. R. Davidson & Co. Port belonging to Aberdeen

Nom. Horse Power as per Section 28 81. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 12", 20", 34" Length of Stroke 23" Revs. per minute 115. Dia. of Screw shaft as per rule 4.082" Material of screw shaft Scrap 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

the propeller boss Yes. If the liner is in more than one length are the joints burned length. 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 2' 6"

Dia. of Tunnel shaft as per rule 6.110" Dia. of Crank shaft journals as per rule 6.413" Dia. of Crank pin 6 3/4" Size of Crank webs 10 1/2" x 4 3/4" Dia. of thrust shaft under

collars 6 3/4" Dia. of screw 9' 0" Pitch of Screw 10' 6" No. of Blades 4 State whether moveable No. Total surface 28 7/8"

No. of Feed pumps 2 Diameter of ditto 2 3/8" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 2 3/8" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps General 6" x 8" x 8" duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room one of 2 1/2" Stokehold one each wing 2 1/2" In Hold, &c. one each wing 2 1/2"

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C. To Is a separate Donkey Suction fitted in Engine room & size Yes: 2 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 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 Suctions from Hold, Ballast & Boiler feed tank How are they protected Strong 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 8. 4. 14 of Stern Tube 8. 4. 14 Screw shaft and Propeller 11. 4. 14

Is the Screw Shaft Tunnel watertight No. Is it fitted with a watertight door worked from

OILERS, &c.—(Letter for record (7)) Manufacturers of Steel W. Beardmore & Co. Ltd. - Clydebridge, D. & Co. Ltd. - D. Colville & Sons Ltd.

Total Heating Surface of Boilers 15433 sq. ft. Is Forced Draft fitted No. No. and Description of Boilers One Cyl. mult. single ended.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360. Date of test 11. 4. 14. No. of Certificate 493.

Can each boiler be worked separately Area of fire grate in each boiler 46.7 sq. ft. No. and Description of Safety Valves to

each boiler 2: direct spring Area of each valve 5.939 sq. in. 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 Not side bunkers Mean dia. of boilers 13' 0" Length 10' 3" Material of shell plates S.

Thickness 1 1/16" Range of tensile strength 28-32 Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams d. r. lap.

long. seams Able straps Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 8" Lap of plates or width of butt straps 16 1/2" x 1 1/2"

Percentages of strength of longitudinal joint rivets 86.9 plate 85.9 Working pressure of shell by rules 181.4 Size of manhole in shell 16" x 12"

Size of compensating ring 28 dia. x 1 1/16" No. and Description of Furnaces in each boiler 3. Plain Material S. Outside diameter 40"

Length of plain part top 48 3/4" Thickness of plates crown 3/4" Description of longitudinal joint weld. No. of strengthening rings 3 1/2 x 3 1/4

Working pressure of furnace by the rules 182.6 Combustion chamber plates: Material S. Thickness: Sides 8" Back 8" Top 32" Bottom 8"

Pitch of stays to ditto: Sides 9 1/2" x 4 1/2" Back 9" x 8" Top 9 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads No. Working pressure by rules 186.

Material of stays S. Diameter at smallest part 1 9/16" Area supported by each stay 42 sq. in. Working pressure by rules 200. End plates in steam space:

Material S. Thickness 1 3/8" Pitch of stays 18 1/4" x 18" How are stays secured d. r. No. Working pressure by rules 182.4 Material of stays S.

Diameter at smallest part 3 13/16" Area supported by each stay 328.5 sq. in. Working pressure by rules 196. Material of Front plates at bottom S.

Thickness 1" Material of Lower back plate S. Thickness 1 5/16" Greatest pitch of stays 14 1/4" x 9" Working pressure of plate by rules

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

Pitch across wide water spaces 14 1/2" Working pressures by rules 73. 180.9 Girders to Chamber tops: Material S. Depth and

thickness of girder at centre 4 1/2" x 1 3/4" Length as per rule 29 1/2" Distance apart 9 1/2" Number and pitch of stays in each two: 8 3/4"

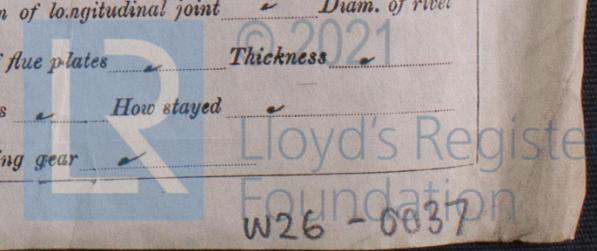
Working pressure by rules 184. Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

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



VERTICAL DONKEY BOILER— Manufacturers of Steel *Glasgow S & S. by Ltd.*

No. *74* Description *Vertical multitubular*
 Made at *Aberdeen* By whom made *Hall Russell & Co. Ltd.* When made *1914* Where fixed *Access in Household*
 Working pressure *100* Tested by hydraulic pressure to *200* Date of test *11.4.14* No. of Certificate *494* Fire grate area *14.7* Description of Safety Valves *Direct Spring* No. of Safety Valves *2* Area of each *4.9* Pressure to which they are adjusted *100 lbs* Date of adjustment *29.4.14*
 If fitted with casing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *5' 6"* Length *11' 0"*
 Material of shell plates *S* Thickness *1/16"* Range of tensile strength *28-32* Descrip. of riveting long. seams *Lap, double riveted*
 Dia. of rivet holes *13/16"* Whether punched or drilled *Drilled* Pitch of rivets *2 3/4"* Lap of plating *4 1/2"* Per centage of strength of joint *Rivets 43.4 Plates 40.4*
 Working pressure of shell by rules *109.3* Thickness of shell crown plates *1"* Radius of do. *dished* No. of stays to do. *4* Dia. of stays *2 7/16"*
 Diameter of furnace Top *34 1/2"* Bottom *58 3/4"* Length of furnace *49"* Thickness of furnace plates *5/8"* Description of joint *Lap, Single riveted*
 Working pressure of furnace by rules *148* Thickness of ^{C.C.} furnace crown plates *5/8"* Radius of do. *4' 6"* Stayed by *Same as shell crown*
 Diameter of ^{water} tubes *2 1/2"* Thickness of ^{water} plates *5/8"* Thickness of ^{stay} tubes *1"* Dates of survey *Feb. 29, 18, 20, 24, 1914; Mar. 3, 5, 13, 19, 20, 24; April 2, 4, 6, 9, 11 (15)*

SPARE GEAR. State the articles supplied:— *Two top & 2 bottom end bolts & nuts; 2 main bearings, & 1 set coupling bolts & nuts; 1 set each, Air, Circulating, Feed & Bilge pump valves; 1 each main & donkey check valves; 1 safety valve spring; bolts, & nuts assorted, and iron of various sizes.*

The foregoing is a correct description,

A. Hall Russell Manufacturers of Engines and Boilers.

Dates of Survey while building
 During progress of work in shops— *1914. Jan. 4, 14, 21, 26 - Feb. 2, 6, 9, 11, 13, 18, 20, 24, 26 - March 3, 5, 13, 18, 19, 24, 30*
 During erection on board vessel— *April 2, 4, 6, 7, 8, 9, 11, 14, 16, 17, 18, 20, 24, 29 - May 1, 5*
 Total No. of visits *36*

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *2.21.26 2.6* Slides *2.1 2.2 2.3* Covers *2.1 2.2 2.3* Pistons *2.1 2.6.11* Rods *2.1.26 6.11*
 Connecting rods *2.1.26 2.11* Crank shaft *9.2.14* Thrust shaft *2.1.26 6* Tunnel shafts *✓* Screw shaft *9.18 6.8* Propeller *2.6.8*
 Stern tube *2.6* Steam pipes tested *18.4.14* Engine and boiler seatings *18.20.26* Engines holding down bolts *14.18*

Completion of pumping arrangements *20.4.14* Boilers fixed *20.4.14* Engines tried under steam *29.4.14*

Main boiler safety valves adjusted *29.4.14* Thickness of adjusting washers *Forward 3/32" - Aft 5/16"*

Material of Crank shaft *Iron* Identification Mark on Do. *444M (DUN)* Material of Thrust shaft *S* Identification Mark on Do. *825A*

Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *S* Identification Marks on Do. *846A*

Material of Steam Pipes *Copper, solid drawn, 3 1/2" bore, No 4, 1304* Test pressure *360 lbs per square inch.*

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

*These Engines & Boilers, have been constructed under Special Survey, and in accordance with the Secretary's Letters, the Rules & approved plans. The materials, and workmanship, are good. When completed, and properly fitted onboard, they were tried under steam at moorings with satisfactory results, and are now in good working order, and in my opinion entitled to the record **L.M.C. 5.14.** in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + LMC 5.14.

J.W.D. 16/5/14 *J.P.R.*

Ridley Howell

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

The amount of Entry Fee .. £ 1 : : When applied for,
 Special .. £ 12 : 3 : *13.5.1914*
 Donkey Boiler Fee .. £ 2 : 2 : When received,
 Travelling Expenses (if any) £ : : *30/5/14*

Committee's Minute

TUE. MAY. 19. 1914

Assigned

+ h.m.c. 5.14

Certificates (if required) to be sent to Aberdeen Office.

The Surveyors are requested not to write on or below the space for Committee's Minute.

