

REPORT ON MACHINERY.

No. *2768*
26. 11. 17

Received at London Office

Date of writing Report *27 Feb 17* When handed in at Local Office *Belfast* 10 Port of *Belfast*
 No. in Survey held at *Belfast* Date, First Survey *25 Oct 1915* Last Survey *3 Feb 1917*
 Reg. Book. *S.S.S. Appleleaf* (Number of Vessels *117*) Gross *5891*
 Master *R.D. Williams* Built at *Belfast* By whom built *Workman Clark & Co* When built *1917*
 Engines made at *Belfast* By whom made *-* when made *-*
 Boilers made at *-* By whom made *-* when made *-*
 Registered Horse Power *1102* Owners *Her Majesty's Commissioners of Port belonging to London*
 Nom. Horse Power as per Section 28 *1102* *The Admiralty Lane & Manufacturing Managers*
 Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Twin Screw Triple Expansion* No. of Cylinders *6* No. of Cranks *6*
 Dia. of Cylinders *26"-42 1/2"-70"* Length of Stroke *45"* Revs. per minute *100* Dia. of Screw shaft *as per rule 14.79* Material of screw shaft *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 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 *outboard shaft unprotected* Length of stern bush *72"*
 Dia. of Tunnel shaft *as per rule 13.14* Dia. of Crank shaft journals *as per rule 13.83* Dia. of Crank pin *14 3/8"* Size of Crank webs *20 1/2 x 9 1/2"* Dia. of thrust shaft under collars *14 3/8"* Dia. of screw *15'-6"* Pitch of Screw *18'-0"* No. of Blades *3* State whether moccable *No* Total surface *76 sq ft.*
 No. of Feed pumps *No* Diameter of ditto *-* Stroke *-* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *-* Diameter of ditto *-* Stroke *-* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *See other sheet* No. and size of Suctions connected to both Bilge and Donkey pumps *1-3 1/2" H&L Lined 2-3" Lined Brass*
 In Engine Room *6 - 3 1/2" and 4" Effectors* In Holds, &c. *1-3 1/2" H&L Lined 2-3" Lined Brass*
 3-3" Effectors H&L Pump Room 1-3" Effector Fire Pump Room
 No. of Bilge Injections *4* sizes *2-14"* Connected to condenser, or to circulating pump *Pump* a separate Donkey Suction fitted in Engine room & size *3-3 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 *Below*
 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 *16-8-16* of Stern Tube *15-11-16* Screw shaft and Propeller *23-11-16*
 Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *No* worked from *Yes*

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Glasgow Ship Coy & Spencer Newcastle*
 Total Heating Surface of Boilers *17490* Is Forced Draft fitted *Yes* No. and Description of Boilers *6 Single Tub Cyl*
 Working Pressure *200 lbs* Tested by hydraulic pressure to *400 lbs* Date of test *9-6-16* No. of Certificates *492-493*
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *as per fuel burning* Description of Safety Valves to each boiler *2-Door Spring* Area of each valve *2.56 sq in* pressure to which they are adjusted *200 lbs* Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *flant / mean dia. of boilers 15'-6"* Length *11'-9"* Material of shell plates *Steel*
 Thickness *1 1/2"* Range of tensile strength *29 1/2 - 32 1/2* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *L.D. & J.*
 long. seams *Weld* Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *10 1/2"* Lap of plates or width of butt straps *22 1/2"*
 Per centages of strength of longitudinal joint rivets *86.8* Working pressure of shell by rules *231 lbs* Size of manhole in shell *16" x 12"*
 Size of compensating ring *W. Vails* No. and Description of Furnaces in each boiler *3-Heighten* Material *Steel* Outside diameter *50 1/2"*
 Length of plain part *top 4"* Thickness of plates *bottom 1/6"* Description of longitudinal joint *Weld* No. of strengthening rings *4*
 Working pressure of furnace by the rules *224 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/4"* Back *3/4"* W. 1/2" op *3/4"* Bottom *5/8"*
 Pitch of stays to ditto: Sides *8" x 8 1/2"* Back *Varia top 8" x 7 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *219 lbs*
 Material of stays *Steel* Diameter at smallest part *1 7/8"* Area supported by each stay *68 1/2"* Working pressure by rules *229 lbs* End plates in steam space
 Material *Steel* Thickness *1 1/8"* Pitch of stays *17" x 21"* How are stays secured *Weld* Working pressure by rules *208 lbs* Material of stays *Steel*
 Diameter at smallest part *1 7/8"* Area supported by each stay *430 1/2 sq in* Working pressure by rules *205 lbs* Material of Front plates at bottom *Steel*
 Thickness *1"* Material of Lower back plate *Steel* Thickness *3/8"* Greatest pitch of stays *15 1/2" x 8 1/2"* Working pressure of plate by rules *200 lbs*
 Diameter of tubes *2 1/2"* Pitch of tubes *3 1/2" x 3 5/8"* Material of tube plates *Steel* Thickness: Front *3/4"* Back *1/2"* Mean pitch of stays *1 1/2" x 7 1/2"*
 Pitch across wide water spaces *13 1/2"* Working pressures by rules *204 lbs* Rinders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9 1/2" x (3/4" x 2)* Length as per rule *32 1/2"* Distance apart *8" x 6 1/2"* Number and pitch of stays in each *3-7 1/2"*
 Working pressure by rules *203 lbs* Superheater or Steam chest; how connected to boiler *Yes* Can the superheater be shut off and the boiler worked separately *Yes*
 Diameter Length Thickness of shell plates Material Description of longitudinal joint *2021* 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

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied: -

See other sheet ✓

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED

M. H. Bell

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1915 - Oct 25, Nov 2, 9, 11, 17, 18, 20, 24, 26, 28 up till 13th Feb 1917
During erection on board vessel -
Total No. of visits *117*
Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts - Cylinders *15* - Slides *15* - Covers *5* - Pistons *5* - Rods *5* - "donkey" *5*
Connecting rods *9-1-16* Crank shaft *22* Thrust shaft *15* Tunnel shafts *8* Screw shaft *10-11-16* Propeller *9-11-17*

Stern tube *1-11-16* Steam pipes tested *1-1-17* Engine and boiler seatings *5-1-17* Engines holding down bolts *5-1-17*
Completion of pumping arrangements *15-2-17* Boilers fixed *11-12-16* Engines tried under steam *15-2-17*

Main boiler safety valves adjusted *7-2-17* Thickness of adjusting washers *4-13*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S* Material of Thrust shaft *W* Identification Mark on Do. *LLOYD'S*

Material of Tunnel shafts *W* Identification Marks on Do. *W* Material of Screw shafts *W* Identification Marks on Do. *W*

Material of Steam Pipes *Steel* Test pressure *600 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*

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 machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules, and the letters of instructions from the Secretary.

The materials and the workmanship are of good description and on steam trials in Belfast Lough, the machinery worked satisfactorily.

In my opinion, it is eligible for records + L.M.C. 2-17, with notation "Forced Draft", "Electric Light", "Fitted for oil fuel F.P. 150°F"

If it is submitted that this vessel is eligible for THE RECORD + L.M.C. 2-17. F.D. Fitted for oil fuel 2-17. F.P. above 150°F.

The amount of Entry Fee ... £
Special ... £ 500
Donkey Boiler Fee ... £
Inclusive Fee - *Shelburne*
Travelling Expenses (if any) £
When applied for, 22/2/19 17 (L.M.C.)
This received, 12/4/19 17 (L.M.C.)
Committee's Minute TUE. 6 MAR. 1917
Assigned + L.M.C. 2-17
P. L. Beveridge
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
FRI. 24 MAY. 1918
FRI. 26 APR. 1918
FRI. 19 SEP. 1919

Rpt. 9a. Port of *Belfast* Continuation of Report No. *4948* dated *21st Feb 1916* on the *P.S. Appleleaf (ex Texol)*

List of Pumps
2 Main Air Pumps 11" x 20" x 15"
2 Centrifugal Circulating 14" diam inlet
2 Main Feed Pumps 13 1/2" x 10" x 26"
2 - Aux - 10 1/2" x 8" x 18"
3 Ballast - 15 1/2" x 11" x 21"
1 Sanitary - 10" x 8" x 18"
1 Fresh Water - 7 1/2" x 9" x 18"
1 Bilge - 6 1/2" x 6 1/2" x 15"
1 - Portable Electric (Capacity 5 Tons per hour)

Spare Gear
1 Propeller Shaft
2 Propellers
1 Stern Lubricator Shaft
1/3 Crank Shaft
2 Pair top end braces
2 - Bottoms -
2 - main bearing bushes
Eccentric Rod straps complete.
Complete set thrust block shoes
Set Quadrant Clippers
Pair braces for valve spindle guide
3 Piston rods with crossheads + clippers complete
Piston packing rings + springs, 1 set for each cyl each engine
Piston valve packing rings
3 Slide valve rods.
Set safety valve springs
1/2 set screw stays for 1 boiler
Fenulas for boiler tubes, 1 set for all boilers
24 plain tubes for boiler
36 condenser tubes + 100 fenulas
Set spare gear for auxiliary pumps
- - - oil burning installation
and all gear to Lloyd's Rules extra ✓

P. L. Beveridge

