

Rpt. 4. **REPORT ON MACHINERY.** No. 8010.

Received at London Office

Date of writing Report *2nd Sep^r 1918* When handed in at Local Office *10* Port of *Belfast*

Survey held at *Belfast* Date, First Survey *26th April 1917* Last Survey *16th Sep^r 1918*
on the *S.S. "War Beetle"* (Number of Visits *59*)

Master *O.A. Bulmer* Built at *Belfast* By whom built *Workman Clark & Coys L^d* Tons { Gross *5176*
Net *3151*
When built *1918*

Engines made at *Belfast* By whom made *-* when made *-*
Boilers made at *-* By whom made *-* when made *-*

Registered Horse Power *518* Owners *The Shipping Controller* Port belonging to *London*
Horse Power as per Section 28 *518* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

Engines, &c.—Description of Engines *Single Screw Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
Dia. of Cylinders *27-44-73* Length of Stroke *48* Revs. per minute *78* Dia. of Screw shaft *14.5* Material of *S. Steel*
as per rule *14.5* as fitted *15.5* screw shaft)

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 *✓* 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

boilers are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *60 1/2*
Dia. of Tunnel shaft *13.325* as per rule *13.5* Dia. of Crank shaft journals *17.9* as per rule *17.9* Dia. of Crank pin *14 1/2* Size of Crank webs *28 x 9* Dia. of thrust shaft under
bolts *14 3/4* Dia. of screw *17-6* Pitch of Screw *16-6* No. of Blades *4* State whether moveable *No* Total surface *102 1/2 sq ft.*

No. of Feed pumps *2* Diameter of ditto *4* Stroke *24* Can one be overhauled while the other is at work *Yes*
No. of Bilge pumps *2* Diameter of ditto *4* Stroke *24* 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
Engine Room *4-3 1/2* In Holds, &c. *9-3 1/2 + 1-3*

No. of Bilge Injections *1* sizes *12* Connected to condenser, or to circulating pump *Pumps a separate Donkey Suction fitted in Engine room & size 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 - Except Main & Tank injections* 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 *Fore hold suction* How are they protected *Wood Casings*

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*
Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *No - W.T. worked from* bunkers from deck

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *M. Beardmore & Coys L^d*
Total Heating Surface of Boilers *76682 sq ft* Forced Draft fitted *Yes* No. and Description of Boilers *3 - Single End Cylindrical*
Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *9-4-18* No. of Certificate *523*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *63 1/2 sq ft* No. and Description of Safety Valves to
each boiler *2 - Direct Spring* Area of each valve *9.62 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 *Head 2 ft* dia. of boilers *15'-6"* Length *11'-6"* Material of shell plates *Steel*

Thickness *1/4"* Range of tensile strength *28-32 tons* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *Lap & Butt*
Long. seams *Butt Lap* Diameter of rivet holes in long. seams *1 1/16* Pitch of rivets *9 1/2* Lap of plates or width of butt straps *19 1/2*
Per centages of strength of longitudinal joint rivets *88.3* Working pressure of shell by rules *182 lbs* Size of manhole in shell *16 x 12*
plate *25.6*

Size of compensating ring *Plate Flanged* No. and Description of Furnaces in each boiler *3 - Brighton* Material *Steel* Outside diameter *50 3/16*
Length of plain part top *5* bottom *8* Thickness of plates crown *3 1/32* bottom *3 1/32* Description of longitudinal joint *Weld* No. of strengthening rings *✓*
Working pressure of furnace by the rules *188 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *23/32* Back *1/4* Top *23/32* Bottom *23/32*

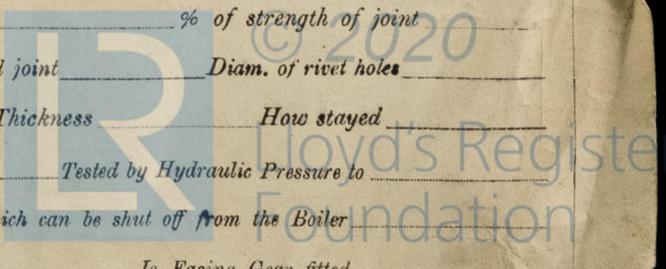
Pitch of stays to ditto: Sides *0 5/8 x 9 1/4* Back *0 1/2 x 8 3/4* Top *0 5/8 x 9 1/4* If stays are fitted with nuts or riveted heads *Nuts inside* Working pressure by rules *180 lbs*
Material of stays *Steel* Area at smallest part *2.39 sq in* supported by each stay *98 1/4* Working pressure by rules *186 lbs* End plates in steam space:
Material *Steel* Thickness *1/32* Pitch of stays *2 1/4 x 2 1/4* How are stays secured *Nuts & Washers* Working pressure by rules *180 lbs* Material of stays *Steel*

Area at smallest part *8.29 sq in* area supported by each stay *459 3/4* Working pressure by rules *187 lbs* Material of Front plates at bottom *Steel*
Thickness *3/32* Material of Lower back plate *Steel* Thickness *1/32* Greatest pitch of stays *13 1/8* Working pressure of plate by rules *189 lbs*
Diameter of tubes *2 1/4* Pitch of tubes *4 x 3 1/2* Material of tube plates *Steel* Thickness: Front *3/32* Back *3/4* Mean pitch of stays *12 x 7 3/4*

Pitch across wide water spaces *13 1/8* Working pressures by rules *181 lbs* Girders to Chamber tops: Material *Steel* Depth and
thickness of girder at centre *10 x (7 x 2)* Length as per rule *35 9/16* Distance apart *10 5/8* Number and pitch of stays in each *3-9 1/4*
Working pressure by rules *182 lbs* Steam dome: description of joint to shell *✓* % of strength of joint

Diameter *-* Thickness of shell plates *-* Material *-* Description of longitudinal joint *-* Diam. of rivet holes *-*
Pitch of rivets *-* Working pressure of shell by rules *-* Crown plates *-* Thickness *-* How stayed *-*
SUPERHEATER. Type *✓* Date of Approval of Plan *-* Tested by Hydraulic Pressure to *-*
Date of Test *-* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *-*
Diameter of Safety Valve *-* Pressure to which each is adjusted *-* Is Easing Gear fitted *-*

003328-003332-0128 1/2



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 - - 1917, April 26 June 29, Aug 5, Oct 11, 19, 23, 26 Nov 2, 5, 12, 27 to 16th Sep 1918
During erection on board vessel - - -
Total No. of visits 59.

Is the approved plan of main boiler forwarded herewith *No - See 85th War Leopard*

Dates of Examination of principal parts—Cylinders 26 - Stiles - 17 Covers - Pistons - Rods
Connecting rods 7-5-18 Crank shaft 13 - Thrust shaft 17 Tunnel shaft 6 Screw shaft 7-2-18 Propeller 27-7-18
Stern tube 17-5-18 Steam pipes tested 20-6-18 Engines and boiler seatings 12-9-18 Engines holding down bolts 12-9-18
Completion of pumping arrangements 16-9-18 Boilers fixed 12-9-18 Engines tried under steam 16-9-18
Completion of fitting sea connections 10-8-18 Stern tube 10-8-18 Screw shaft and propeller 19-8-18
Main boiler safety valves adjusted 13-9-18 Thickness of adjusting washers 6-11-18
Material of Crank shaft *I. Steel* Identification Mark on Do. *LLOYDS 7-2-18* Material of Thrust shaft *Do* Identification Mark on Do. *LLOYDS 31-7-18*
Material of Tunnel shafts *Do* Identification Marks on Do. *LLOYDS 7-2-18* Material of Screw shafts *Do* Identification Marks on Do. *LLOYDS 31-7-18*
Material of Steam Pipes *H. Iron* Test pressure 540 lbs

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 *Yes* If so, state name of vessel *85th War Leopard*

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, also as per Specifications and instructions issued by the Shipping Controller.
The workmanship and the materials are of good description, and a trial under steam in Belfast Lough, the machinery worked satisfactorily. In our opinion, it is eligible for record + L.M.C. 9-18 with notation "Foreed Afloat" and "Electric Light".

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.18 F.D.

26-9-18 *J.P.R.*

The amount of Entry Fee *115:08* When applied for 18-9-18
Special Fee as agreed upon with Admiralty
Donkey Boiler Fee
Travelling Expenses (if any) £ *5:10:18* When received 18/10/18

R. F. Beveridge *John Pollock*
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned
FRI 27 SEP 1918
+ 26 9 18
F.D.

S.S. War Beetle
1 Ballast Pump 10 1/2" x 14" x 24"
1 General - 9 1/2" x 7" x 18"
1 Feed - 9 1/2" x 7" x 18"

Spare Gear
1 C. I. Solid propeller
1 H. P. piston valve
2 Top end bolts + nuts
2 Bolt - - -
2 Main bearing - -
3 Crank shaft coupling - -
3 Tunnel - - -
1 Feed pump suction valve
1 - - discharge -
1 Bilge - - -
1 - - suction -
3 Main feed check -
3 Donkey - - -
50 Bolts + nuts assorted
6 Cylinder cover studs + nuts
6 Steam chest - -
12 Junk ring - -
Fuel bars, Iron, etc.

R. F. Beveridge

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