

# REPORT ON MACHINERY.

No. 12280.

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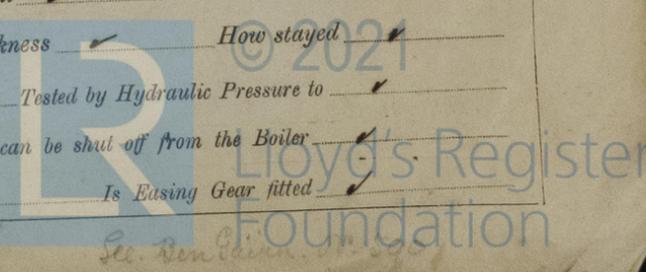
Port of **Aberdeen**  
 Date, First Survey **16. 1. 19** Last Survey **29. 8. 1919.**  
 (Number of Visits **44.**)  
 Reg. Book. **Aberdeen**  
 on the **single pc. "BEN HEILEM."** Tons **Gross 224.09**  
**Wm Bowling** Built at **Aberdeen** By whom built **Hall Russell & Co. Ltd. 600.** When built **1919**  
 Engines made at **Aberdeen** By whom made **Hall Russell & Co. Ltd. 600.** when made **1919.**  
 Boilers made at **do.** By whom made **do do 600.** when made **1919.**  
 Registered Horse Power **48.** Owners **R. Irwin & Sons Ltd.** Port belonging to **Aberdeen.**  
 Nom. Horse Power as per Section 28 **48.** 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 **24"** Revs. per minute **115.** Dia. of Screw shaft **as per rule 6.911** Material of screw shaft **as fitted 1 1/2"** **scrap.**  
 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  
 on 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 **yes.** Length of stern bush **2' 6"**  
 Dia. of Tunnel shaft **as per rule 0.210** Dia. of Crank shaft journals **as per rule 0.52** Dia. of Crank pin **6 3/4"** Size of Crank webs **10 x 1 1/2"** Dia. of thrust shaft under  
 collars **6 3/4"** Dia. of screw **8' 4"** Pitch of Screw **11' 6"** No. of Blades **4** State whether moveable **no.** Total surface **32.4**  
 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 **2 1/2" x 3 1/2" x 5" duplex.** No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room **one of 2"** In Holds, &c. **Reserve pumps one of 2"**  
**Also ejector, drawing from all parts, and with separate suction from engine room 2" dia.**  
 No. of Bilge Injections **1** sizes **3"** Connected to condenser, or to circulating pump **C.P.** Is a separate Donkey Suction fitted in Engine room & size **yes: 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 **none.**  
 Are all connections with the sea direct on the skin of the ship **yes.** Are they Valves or Cocks **both valves & cocks.**  
 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 **Sucs from Bunker, Slushwell & F.W. 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.**  
 Is the Screw Shaft Tunnel watertight **None.** Is it fitted with a watertight door **worked from**

**BOILERS, &c.**—(Letter for record (7)) Manufacturers of Steel **W. Beardmore & Co. Ltd.**  
 Total Heating Surface of Boilers **1429 sq ft** Is Forced Draft fitted **no.** No. and Description of Boilers **One, single ended.**  
 Working Pressure **180 lbs.** Tested by hydraulic pressure to **360 lbs.** Date of test **19. 6. 19** No. of Certificate **942.**  
 Can each boiler be worked separately **yes.** Area of fire grate in each boiler **48 sq ft** No. and Description of Safety Valves to  
 each boiler **2: direct spring** Area of each valve **5.94 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 **about 4"** **Inside** Mean dia. of boilers **12' 9"** Length **10' 9"** Material of shell plates **S.**  
 Thickness **1 1/8"** Range of tensile strength **28-52** Are the shell plates welded or flanged **no.** Descrip. of riveting: cir. seams **d. 7 lap.**  
 long. seams **double straps** Diameter of rivet holes in long. seams **1 1/8"** Pitch of rivets **8" 4"** Lap of plates or width of butt straps **16 3/8 x out. 1 1/2"**  
 Per centages of strength of longitudinal joint **rivets 86.9** Working pressure of shell by rules **185.** Size of manhole in shell **16" x 12"**  
 plate **85.9** No. and Description of Furnaces in each boiler **3: plain** Material **S.** Outside diameter **44"**  
 Length of plain part **top 82 1/2"** Thickness of plates **bottom 1 1/8"** Description of longitudinal joint **weld.** No. of strengthening rings **3 1/2 x 3 1/2"**  
 Working pressure of furnace by the rules **183.9** Combustion chamber plates: Material **S.** Thickness: Sides **5"** Back **5"** Top **5"** Bottom **5"**  
 Pitch of stays to ditto: Sides **9' x 8"** Back **9' x 8"** Top **9' x 8"** If stays are fitted with nuts or riceted heads **nuts.** Working pressure by rules **186.**  
 Material of stays **S.** Area at smallest part **1.92 sq ft** Area supported by each stay **72 sq ft** Working pressure by rules **200.** End plates in steam space:  
 Material **S.** Thickness **1 1/8"** Pitch of stays **18' x 18"** How are stays secured **d. n. w. o.** Working pressure by rules **185.** Material of stays **S.**  
 Area at smallest part **6.22 sq ft** Area supported by each stay **324 sq ft** Working pressure by rules **199.** Material of Front plates at bottom **S.**  
 Thickness **1"** Material of Lower back plate **S.** Thickness **1 1/8"** Greatest pitch of stays **14 1/2" x 9"** Working pressure of plate by rules **215.**  
 Diameter of tubes **3 1/2" ext.** Pitch of tubes **4 1/2" x 4 1/2"** Material of tube plates **S.** Thickness: Front **1"** Back **3/32"** Mean pitch of stays **11 1/8"**  
 Pitch across wide water spaces **14 1/2"** Working pressures by rules **F. 182.6** Girders to Chamber tops: Material **S.** Depth and  
 thickness of girder at centre **8 3/8" x 1 3/4"** Length as per rule **32 1/2"** Distance apart **9"** Number and pitch of stays in each **three: 8"**  
 Working pressure by rules **182.5** Steam dome: description of joint to shell **Stone.** % of strength of joint **yes.**  
 Diameter **yes.** Thickness of shell plates **yes.** Material **yes.** Description of longitudinal joint **yes.** Diam. of rivet holes **yes.**  
 Pitch of rivets **yes.** Working pressure of shell by rules **yes.** Crown plates **yes.** Thickness **yes.** How stayed **yes.**

**SUPERHEATER.** Type **Stone.** Date of Approval of Plan **yes.** Tested by Hydraulic Pressure to **yes.**  
 Date of Test **yes.** Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler **yes.**  
 Diameter of Safety Valve **yes.** Pressure to which each is adjusted **yes.** Is Easing Gear fitted **yes.**

008186-008200-0138



IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two top & two bottom end bolts & nuts; two main bearing and one pet, coupling bolts & nuts; one pet each, Air, Circulating, Feed & Bilge pump valves; one each, main & donkey Check valve; one Safety valve spring; bolts & nuts assorted and iron of various sizes.

The foregoing is a correct description,

A. Hall Wilson

Manufacturers of Main Engines & Boilers.

Dates of Survey while building { During progress of work in shops -- 1919 Jan 16, 23, 30 - Feb 5 - Mar 5, 6, 14, 21, 26, 28 - Apr 14, 16, 24, 30 - May 9, 14, 20, 22, 28, 29, 31 - June 3, 5, 11, 14, 18, 19, 23, 25, 26 - July 3, 15, 28 - Aug 1, 6, 7, 11, 14, 15, 18, 20, 21, 24, 29 /  
During erection on board vessel --  
Total No. of visits 44 /

Is the approved plan of main boiler forwarded herewith yes  
" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 26.6.19 Slides 26.6.19 Covers 28.4.19 Pistons 28.4.19 Rods 28.4.19  
Connecting rods 28.4.19 Crank shaft 18.6.19 Thrust shaft 18.6.19 Tunnel shafts 18.6.19 Screw shaft 18.6.19 Propeller 25.6.19  
Stern tube 23.6.19 Steam pipes tested 4.8.19 Engine and boiler seatings 18.4.19 Engines holding down bolts 6.8.19  
Completion of pumping arrangements 14.8.19 Boilers fixed 6.8.19 Engines tried under steam 14.8.19  
Completion of fitting sea connections 3.4.19 Stern tube 26.6.19 Screw shaft and propeller 3.4.19  
Main boiler safety valves adjusted 14.8.19 Thickness of adjusting washers Port. 3/4" Starboard 3/8"  
Material of Crank shaft Iron Identification Mark on Do. 1261.A Material of Thrust shaft Steel Identification Mark on Do. 1262.A  
Material of Tunnel shafts Iron Identification Marks on Do. 1263.A Material of Screw shafts Iron Identification Marks on Do. 1264.A  
Material of Steam Pipes Copper, solid drawn, 5 1/2" bore No. 4. 309. Test pressure 360 lbs per sq inch  
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 "Ben Meidie" Abn S. Co. Regd No. 11921.

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

These engines and the Boiler, have been constructed under special survey, and in accordance with the Secretary's letters, the Rules, and approved plans: the materials and workmanship are good. When completed, and properly fitted on board, they were tried under steam at moorings with satisfactory results, and are now in good order, and in my opinion entitled to the record \* L.M.C. 8.19. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 8.19.

J.W.D.  
30/9/19. J.P.R.

Ridley Howell.  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 2 : : When applied for,  
Special ... £ 11 : 14 : 23.9.1919  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : : 3/10/19

Committee's Minute  
Assigned + LMC 8.19

FRI. 3-OCT 1919

RECEIVED BY SECRETARY



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Aburdeen Office.

Certificate (if required) to be sent to  
The Surveyors are requested not to write on or below the space for Committee's Minute.