

# REPORT ON MACHINERY.

Received at London Office

Date of writing Report **3-3-1927** When handed in at Local Office **5-3-1927** Port of **Aberdeen** (M.A.N. 13 L)

No. in Survey held at **Aberdeen** Date, First Survey **26-4-26** Last Survey **2-3-1927**  
 Reg. Book. on the **Steel Sc. Hopper Barge "CLEARWAY"** (Number of Visits **28**)

Master **Built at Aberdeen** By whom built **A. Hall & Co. Ltd. (No 601)** Tons **Gross 270.80**  
**Net 106.99** When built **1927-1**

Engines made at **Aberdeen** By whom made **A. Hall & Co. Ltd. (No 301)** when made **1927**

Boilers made at **Aberdeen** By whom made **A. Hall & Co. Ltd. (No 294)** when made **1927**

Registered Horse Power **Transport Co. Ltd.** Owners **Messrs James, Dredging, Towing, & Co. Ltd.** Port belonging to **London.**

Nom. Horse Power as per Section 28 **46** 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 **10" 16" 26"** Length of Stroke **18"** Revs. per minute **5.66** Dia. of Screw shaft as per rule **5.66** Material of screw shaft **Steel**  
 as fitted **6"**

Is the screw shaft fitted with a continuous liner the whole length of the stern tube **no liner** 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 **no** Length of stern bush **24"**

Dia. of Tunnel shaft as per rule **4.88"** Dia. of Crank shaft journals as per rule **5.12"** Dia. of Crank pin **5 1/4"** Size of Crank webs **9 3/4" x 3 1/4"** Dia. of thrust shaft under collars **5 1/4"** Dia. of screw **6-6"** Pitch of Screw **10'-0"** No. of Blades **4** State whether moveable **no** Total surface **19.5 sq ft**

No. of Feed pumps **1** Diameter of ditto **2 1/8"** Stroke **9"** Can one be overhauled while the other is at work **yes**

No. of Bilge pumps **1** Diameter of ditto **2 1/8"** Stroke **9"** Can one be overhauled while the other is at work **yes**

No. of Donkey Engines **2** Sizes of Pumps **4 1/2" x 2 3/4" x 4"; 5 1/4" x 4 3/4" x 5"** No. and size of Suctions connected to both Bilge and Donkey pumps **In Engine Room One 2" dia. In Holds, &c. One @ 2" dia from :- Fore peak, after peak, Forward hold, Port wing chamber, Starboard wing chamber.**

No. of Bilge Injections **1** sizes **2"** Connected to condenser, or to circulating pump **pumps a separate Donkey Suction fitted in Engine room & size 2 1/4"**  
**straight tail pipes not practicable.**

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 stowhold 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 **nine** 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**

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 **Henschel & Sohn, Abt. Henrichshütte, Hattingen.**

Total Heating Surface of Boilers **925 sq ft** Is Forced Draft fitted **no** No. and Description of Boilers **One S.E. Main**

Working Pressure **180 lbs** Tested by hydraulic pressure to **320 lbs** Date of test **12-1-27** No. of Certificate **1054**

Can each boiler be worked separately **yes** Area of fire grate in each boiler **34 sq ft** No. and Description of Safety Valves to each boiler **2 spring loaded** Area of each valve **3-160"** Pressure to which they are adjusted **180 lbs** Are they fitted with easing gear **yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **9"** Mean dia. of boilers **10'-6"** Length **10'-0"** Material of shell plates **Steel**

Thickness **7/8"** Range of tensile strength **28/32 tons** Are the shell plates welded or flanged **no** Descrip. of riveting: cir. seams **D.R.**

long. seams **T.R.D.B.S.** Diameter of rivet holes in long. seams **15/16"** Pitch of rivets **6 7/8"** Lap of plates or width of butt straps **1 1/2"**

Per centages of strength of longitudinal joint rivets **88.2** Working pressure of shell by rules **181 lbs** Size of manhole in shell **16" x 12"**

Size of compensating ring **34 x 30 x 7/8"** No. and Description of Furnaces in each boiler **2 Deighton** Material **S** Outside diameter **3'-3 1/4"**

Length of plain part top **1 1/2"** Thickness of plates crown **1 1/2"** Description of longitudinal joint **welded** No. of strengthening rings **yes**

Working pressure of furnace by the rules **200 lbs** Combustion chamber plates: Material **S** Thickness: Sides **11/16"** Back **19/32"** Top **11/16"** Bottom **11/16"**

Pitch of stays to ditto: Sides **8" x 8"** Back **8" x 8"** Top **8" x 7 1/2"** If stays are fitted with nuts or riveted heads **nuts** Working pressure by rules **190 lbs**

Material of stays **S** Area at smallest part **1 1/2" dia.** Area supported by each stay **640"** Working pressure by rules **196 lbs** End plates in steam space: Material **S** Thickness **29/32"** Pitch of stays **14 1/2" x 14 1/4"** How are stays secured **D.N.** Working pressure by rules **182 lbs** Material of stays **S**

Area at smallest part **2 1/2" dia.** Area supported by each stay **206.6** Working pressure by rules **214** Material of Front plates at bottom **S**

Thickness **29/32"** Material of Lower back plate **S** Thickness **29/32"** Greatest pitch of stays **19" dia.** Working pressure of plate by rules **208**

Diameter of tubes **3 1/2"** Pitch of tubes **4 3/4" x 4 5/8"** Material of tube plates **S** Thickness: Front **29/32"** Back **13/16"** Mean pitch of stays **9 1/2" x 9 1/4"**

Pitch across wide water spaces **13 1/4"** Working pressures by rules **250 lbs** Girders to Chamber tops: Material **S** Depth and thickness of girder at centre **8" x 1 1/4"** Length as per rule **2-4 19/32"** Distance apart **7 1/2"** Number and pitch of stays in each **2 @ 8"**

Working pressure by rules **215** Steam dome: description of joint to shell **yes** % 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**

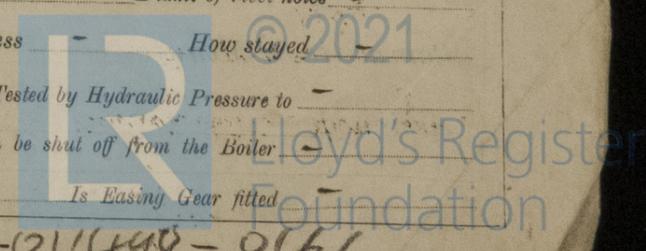
**SUPERHEATER.** Type **yes** Date of Approval of Plan **yes** Tested by Hydraulic Pressure to **yes**

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**

011493-011498-0166

Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one will be sent?



IS A DONKEY BOILER FITTED? *No* If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

*Two top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, set of coupling bolts, set of feed, ledge, air & circulating pump valves, one main & one donkey check valve. Spare propeller, 6 junk ring bolts & nuts.*

The foregoing is a correct description,  
**ALEXANDER HALL & CO., LTD.**

*A. G. M. M.* SECRETARY

Manufacturer.

1927

Dates of Survey while building  
 During progress of work in shops — *1926*  
 During erection on board vessel — *1927*  
 Total No. of visits *28*

*Apr. 26, May 5, 13, June 8, 21, 28, July 12, 30, Aug. 12, 23, Sept. 12, 15, 28, Oct. 6, 11, Nov. 12, Dec. 8, 28, Jan. 7, 12*

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

Dates of Examination of principal parts—Cylinders *23-8-26* Slides *28-9-26* Covers *23-8-26* Pistons *28-9-26* Rods *28-9-26*  
 Connecting rods *28-9-26* Crank shaft *23-8-26* Thrust shaft *23-8-26* Tunnel shafts *12-11-26* Screw shaft *12-11-26* Propeller *12-11-26*  
 Stern tube *12-11-26* Steam pipes tested *24-1-27* Engine and boiler seatings *18-1-27* Engines holding down bolts *27-1-27*  
 Completion of pumping arrangements *1-2-27* Boilers fixed *27-1-27* Engines tried under steam *28-1-27*  
 Completion of fitting sea connections *18-1-27* Stern tube *18-1-27* Screw shaft and propeller *18-1-27*  
 Main boiler safety valves adjusted *28-1-27* Thickness of adjusting washers *P 9/32 S 11/32* part of crank shaft.  
 Material of Crank shaft *Steel* Identification Mark on Do. *301 JDB* Material of Thrust shaft *Steel* Identification Mark on Do. *6840 PF*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *6839 PF* Material of Screw shafts *Steel* Identification Marks on Do. *6840 PF*  
 Material of Steam Pipes *S.D. Copper, 3 1/2" dia. 6 W.C.* Test pressure *360 lb per sq. in.*

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 built under special survey & in accordance with the approved plans & the Rules of this Society. The materials & workmanship are good. The machinery has been properly fitted & secured on board, tried under working conditions, & found good. The steam & feed pipes have been tested by hydraulic pressure as required by the Rules. The safety valves have been adjusted under steam & tried for accumulation. The machinery is eligible in my opinion to have the record in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + LMC 3. 27. 06.

*J.W.D.*  
*8/3/27*

The amount of Entry Fee ... £ 2 :-  
 Special ... £ 15 :-  
 Donkey Boiler Fee ... £ :-  
 Travelling Expenses (if any) £ :-

When applied for, *5-3-1927*  
 When received, *26-11-1927*

*P. Fitzgerald*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUES. 8 MAR 1927*  
 Assigned *+ L.M.C 3. 27 06*

CERTIFICATE WRITTEN

