

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

25 MAR 1937

Received at London Office

Date of writing Report 10 When handed in at Local Office 10 Port of **HULL**
 No. in Survey held at **Hull** Date, First Survey **29th Dec. 1936** Last Survey **19th March 1937**
 Reg. Book. **67243** on the **Steam Trawler "ARCTIC PIONEER"** (Number of Visits **27**) Gross **501.17**
 Built at **Selby** By whom built **Booth & Sons Ltd** Yard No. **1171** Tons { Net **188.99**
 Engines made at **Hull** By whom made **S. D. Holmes & Co., Ltd** Engine No. **1521** When built **1931-3**
 Boilers made at **Hull** By whom made **S. D. Holmes & Co., Ltd** Boiler No. **1521** When made **1931**
 Registered Horse Power **132** Owners **Boyd Line Ltd** Port belonging to **Hull**
 Nom. Horse Power as per Rule **132** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**
 Trade for which Vessel is intended **Fishing**

ENGINES, &c.—Description of Engines **Reciprocating Triple Expansion** Revs. per minute **3**
 Dia. of Cylinders **14 1/2" - 24" - 40"** Length of Stroke **27"** No. of Cylinders **3** No. of Cranks **3**
 Crank shaft, dia. of journals **8 1/2"** as per Rule **8.106** Crank pin dia. **8 1/4"** Mid. length breadth **15 3/8"** Thickness parallel to axis **5 1/4"**
 as fitted **8.25"** Crank webs **5 1/4"** Mid. length thickness **5 1/4"** Thickness around eye-hole **3 1/4"**
 Intermediate Shafts, diameter **7 7/8"** as per Rule **7.72** Thrust shaft, diameter at collars **8 1/4"** as fitted **8.106**
 as fitted **7 7/8"** Tube Shafts, diameter **8 5/8"** as per Rule **8.595** Is the { tube } shaft fitted with a continuous liner { **Yes**
 as fitted **8 3/4"** as fitted **8 3/4"** Screw Shaft, diameter **4 1/8"** as per Rule **4.183** Is the after end of the liner made watertight in the
 Bronze Liners, thickness in way of bushes **5 3/8"** as per Rule **5.577** Thickness between bushes **1/2"** as fitted **1/2"** propeller boss **Yes**
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner
 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 liners are fitted, is the shaft lapped or protected between the liners **Is an approved Oil Gland or other appliance fitted at the after end of the tube**
 shaft **No** If so, state type **Length of Bearing in Stern Bush next to and supporting propeller 40"**
 Propeller, dia. **10 1/2"** Pitch **11-0"** No. of Blades **4** Material **Cast iron** whether Moveable **No** Total Developed Surface **41.5** sq. feet
 Feed Pumps worked from the Main Engines, No. **2** Diameter **2 3/4"** Stroke **15"** Can one be overhauled while the other is at work **Yes**
 Bilge Pumps worked from the Main Engines, No. **2** Diameter **2 3/4"** Stroke **15"** Can one be overhauled while the other is at work **Yes**
 Feed Pumps { No. and size **One 6" x 3 1/2" x 6" Duplex & One 7" x 5" x 6" Duplex** Pumps connected to the { No. and size **One 7" x 5" x 6" Duplex & One 3" Ejector**
 How driven **Steam** Main Bilge Line How driven **Steam**
 Ballast Pumps, No. and size **Lubricating Oil Pumps, including Spare Pump, No. and size**
 Are two independent means arranged for circulating water through the Oil Cooler **Suctions, connected to both Main Bilge Pumps and Auxiliary**
 Bilge Pumps;—In Engine and Boiler Room **2 at 2" diameter**
 In Pump Room **In Holds, &c. 5 at 2" diameter.**

Main Water Circulating Pump Direct Bilge Suctions, No. and size **One 4 3/4" dia.** **Independent Power Pump Direct Suctions to the Engine Room Bilges,**
 No. and size **One 3" Ejector.** Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes **Yes**
 Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **Yes**
 Are all Sea Connections fitted direct on the skin of the ship **Yes** Are they fitted with 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 Overboard Discharges 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 pass through the bunkers **Forward suction** How are they protected **Wood casings.**
 What pipes pass through the deep tanks **Have they been tested as per Rule**
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **Yes**
 Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another **Is the Shaft Tunnel watertight** **Is it fitted with a watertight door** **worked from**

MAIN BOILERS, &c.—(Letter for record **"3"**) Total Heating Surface of Boilers **2415 square feet.**
 Is Forced Draft fitted **No.** No. and Description of Boilers **One Single Ended Return Tank** Working Pressure **220 lbs/sq. in.**
IS A REPORT ON MAIN BOILERS NOW FORWARDED? **Yes.**
IS A DONKEY BOILER FITTED? **No.** If so, is a report now forwarded?
 Is the donkey boiler intended to be used for domestic purposes only
PLANS. Are approved plans forwarded herewith for Shafting **Yes** Main Boilers **Yes** Auxiliary Boilers **Yes** Donkey Boilers **Yes**
 (If not state date of approval)
 Superheaters **Yes** General Pumping Arrangements **Yes** Oil fuel Burning Piping Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied **Yes.**
 State the principal additional spare gear supplied

One set of air pump valves.
One safety valve spring
One main & donkey check valve
One set of valves for Duplex & Ejector Pumps.
One main engine feed pump plungers.
One impeller shaft for centrifugal pump.
One bottom water gauge pipe
One spare feed pipe
One main engine eccentric strap.

The foregoing is a correct description,
 FOR CHARLES D. HOLMES & CO., LTD.

Manufacturer.

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Dates of Survey while building
During progress of work in shops - - 1936: - Dec. 29. 31.
During erection on board vessel - - - 1937: - Jan. 4. 11. 13. 22. 29. Feb. 1. 3. 10. 15. 22. 24. 25. 26.
Mar. 1. 3. 4. 6. 9. 12. 13. 13. 16. 17. 19. 19.
Total No. of visits 27.

Dates of Examination of principal parts—Cylinders 22.2.37 Slides 25.2.37 Covers 25.2.37
Pistons 25.2.37 Piston Rods 22.2.37 Connecting rods 22.2.37
Crank shaft 22.2.37 Thrust shaft 26.2.37 Intermediate shafts 22.2.37
Tube shaft " Screw shaft 29.12.36 31.12.36 Propeller 31.12.36
Stern tube 4.1.37 Engine and boiler seatings 13.1.37 Engines holding down bolts 9.3.37
Completion of fitting sea connections 13.1.37
Completion of pumping arrangements 19.3.37 Boilers fired 9.3.37 Engines tried under steam 19.3.37
Main boiler safety valves adjusted 19.3.37 Thickness of adjusting washers $F = \frac{9}{8}$ " $R = \frac{5}{16}$ " SUPERHEATER = $\frac{9}{16}$ "
Crank shaft material Steel Identification Mark 1055 Thrust shaft material Steel Identification Mark 1055
Intermediate shafts, material Steel Identification Marks 1055 Tube shaft, material " Identification Mark "
Screw shaft, material Steel Identification Mark 1055 Steam Pipes, material A.D. Steel Test pressure 660 lb/p Date of Test 16.3.37.
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 the Rules for the use of oil as fuel been complied with
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No If so, have the requirements of the Rules been complied with
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with
Is this machinery duplicate of a previous case Yes If so, state name of vessel "Arctic Explorer"

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under Special Survey, the materials & workmanship being sound and good.
It has been satisfactorily fitted on board, tried under steam and found good.

It is eligible in my opinion to have record of \times L.M.C. 3.37 CL Spt.

The amount of Entry Fee ... £ 3 : 0 : When applied for,
Special ... £ 33 : 0 : 25 MAR 1937
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : 7.4.37 8/4

Committee's Minute FRI 2 APR 1937

Assigned + June 3.37 Spt CL

J. A. Orde
Engineer Surveyor to Lloyd's Register of Shipping.