

# REPORT ON OIL ENGINE MACHINERY.

No. 94780

-6 MAR 7

Received at London Office

NEWCASTLE-ON-TYNE

5/31, 1937 Port of

Date of writing Report

When handed in at Local Office

Date, First Survey

16 July

Last Survey

4/31 1937

Number of Visits

49

No. in Survey held at Reg. Book.

Newcastle on Tyne

Single  
Triple  
Quadruple

Screw vessel

**ABBNEYDALE.**

Tons: Gross 8299  
Net 4936

Built at Newcastle on Tyne By whom built Swan, Hunter & Wigham's Yard No. 1506 When built 1937

Engines made at Sunderland By whom made W. Doreford & Sons Ltd. Engine No. 195 When made 1937

Donkey Boilers made at Newcastle By whom made Swan, Hunter & Wigham's Yard No. 1506 When made 1937

Brake Horse Power 2850 Owners The Admiralty Port belonging to LONDON.

Nom. Horse Power as per Rule 687 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES.

Trade for which vessel is intended Ocean going 23 5/8 91 1/16"

**OIL ENGINES, &c.**—Type of Engines Doreford opposed piston oil engine 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 40 Kg/cm<sup>2</sup> 370 lbs Diameter of cylinders 600 mm Length of stroke upper 1340 mm lower 980 No. of cylinders 4 No. of cranks 4

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge See Sunderland Rpt. No. 32004

Revolutions per minute 97 Flywheel dia. 25 tons Weight 50 Means of ignition Compressor Kind of fuel used Heavy oil fuel

Crank Shaft, dia. of journals as per Rule as fitted Crank pin dia. Crank Webs Mid. length breadth Mid. length thickness Thickness parallel to axis shrunk Thickness around eyehole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 12.85" Thrust Shaft, diameter at collars as per Rule as fitted 16 1/2"

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 14.24" Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule as fitted 23 7/32" Thickness between bushes as per Rule as fitted 9/16" Is the after end of the liner made watertight in the

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 One 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 tight fit

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 5-6 1/2

Propeller, dia. 16-9" pitch 12 3/8" max. Sp. of blades 4 Material Muntz whether Moveable No Total Developed Surface 91 sq. feet

Method of reversing Engines forced Is a governor or other arrangement fitted to prevent racing of the engine Yes Means of lubrication

Thickness of cylinder liners Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Led up funnel

Cooling Water Pumps, No. 1 steam driven Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

What special arrangements are made for dealing with cooling water if discharged into bilges discharges overboard.

Bilge Pumps worked from the Main Engines, No. None Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 1 of 10" x 12" x 10" 180 tons/hr; 2 of 7" x 8" x 8" 100 tons/hr

Ballast Pumps, No. and size one 10 x 12 x 10" aft in E.R. How driven Steam Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one 8 x 7 x 18" steam

Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces 3-3 1/2" also 1-2 1/2" from ER Cofferdam + 2-2 1/2" from fore oil In Pump Rooms 2 of 4"

In Holds, &c. In fore & Carps Hold 2 of 2 1/2" and 2 of 2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 of 6"

Are all the Bilge Suction pipes in Hold and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

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 Yes, both.

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the Overboard Discharges above or below the deep water line both.

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 none How are they protected

What pipes pass through the deep tanks none Have they been tested as per Rule Yes

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 Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door worked from

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Main Air Compressors, No. 2 (Airless Injection) No. of stages 3 Diameters 11 1/2" & 2 3/4" Stroke 7 Driven by Steam Eng.

Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters Stroke Driven by

Small Auxiliary Air Compressors, No. None No. of stages Diameters Stroke Driven by

Scavenging Air Pumps, No. One See Sld Rpt for main Engines. Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted Position one 30 KW oil Eng. Dyno Set all on one 30 KW Steam Dyno. Set in E.R. one 8 KW Steam Dyno Set in E.R.

**AIR RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes

Can the internal surfaces of the receivers be examined and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes

High Pressure Air Receivers, No. None Cubic capacity of each Internal diameter thickness

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure Actual

Starting Air Receivers, No. 2 Total cubic capacity 280 cub. ft Internal diameter 4-1 1/2" thickness 1 3/32"

Seamless, lap welded or riveted longitudinal joint Riveted Material 1/2" Steel. Range of tensile strength 29-33 tons Working pressure Actual 602 lbs 600

002352-002361-0072

IS A DONKEY BOILER FITTED? *Yes. Two* If so, is a report now forwarded? *Yes.*  
 Is the donkey boiler intended to be used for domestic purposes only? *No - For Auxy. Pumps + Air Compression etc.*  
 PLANS. Are approved plans forwarded herewith for Shafting *30/12/35 + 8/4/36* Receivers *10/1/36 + 8/4/36* Separate Tanks *7/3/36 + 8/4/36*  
 (If not, state date of approval) *In ER. 11/3/36*  
 Donkey Boilers *15/11/35 + 23/11/35* General Pumping Arrangements *For ER 24/4/36* Oil Fuel Burning Arrangements   
*+ 8/4/36* SPARE GEAR.

Has the spare gear required by the Rules been supplied? *Yes*  
 State the principal additional spare gear supplied:  
*1 Set of ahead Thrust Pads*  
*1 - 6 feed T & K Lubricator for Cylinders*  
*1 - Solid Cast Iron Propeller*  
*1 - Screw shaft complete with Cl. & nut.*  
*2 - spare feed check valve lids.*  
*12 - boiler tubes ; 1 Safety Valve spring.*  
*1 set of cages for feed water filters*  
*1 nest of tubes for distilled water cooler*  
*1 " " " oil cooler.*  
*1 set of cages or strainers for forced lubrication filters.*

FOR The foregoing is a correct description.  
 SWAN, HUNTER, & WYBHAM RICHARDSON, L<sup>td</sup>

*E. J. Ducey* Manufacturer.  
 DIRECTOR

Dates of Survey while building:  
 During progress of work in shops - - *1936 July 16, Aug. 12, 25, 28, 31, Sep. 3, 4, 10, 30, Oct. 5, 15, 16, 26, 27, 28, Nov. 2, 4, 11, 19*  
 During erection on board vessel - - *1937 20, 26, 27, 30, Dec. 1, 2, 14, 15, 17, 21, 27, 28, 31, Jan. 5, 6, 11, 14, 18, 21, 28, Feb. 2, 5, 12, 17, 18, 19, 22, 25, 26, Mar 4.*  
 Total No. of visits *49.*

Dates of Examination of principal parts - Cylinders ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓  
 Crank shaft ✓ Flywheel shaft ✓ Thrust shaft ✓ Intermediate shafts *14-12-36* Tube shaft ✓  
 Screw shaft *2-12-36* Propeller *2-12-36* Stern tube *30/11/36* Engine seatings *2/2/37* Engines holding down bolts *2/2/37*  
 Completion of fitting sea connections *30/11/36* Completion of pumping arrangements *25/2/37* Engines tried under working conditions *25/2/37*  
 Crank shaft, Material ✓ Identification Mark ✓ Flywheel shaft, Material ✓ Identification Mark ✓  
 Thrust shaft, Material ✓ Identification Mark ✓ Intermediate shafts, Material *S.M. Steel* Identification Marks *6605 HAI 331 + 332.*  
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material *S.M. Steel* Identification Mark *working 6605 HAI 333*  
 Spare " *HAI 334.*

Is the flash point of the oil to be used over 150° F. *Yes*  
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes*  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ✓ 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 *Bartick Fame New Rpt 94124*  
*Bartick Insurance. " " 94275*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel has been constructed under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good.*  
*The machinery has been satisfactorily installed on board, & tested under working conditions, and the vessel is eligible in my opinion for record + LMC 3.37. T.S. a. 2DB. WP 150th.*

The amount of Entry Fee .. £ ✓ : When applied for.  
 Special *45<sup>th</sup> Metallurgy* £ 21 : 17 *5 MAR 1937*  
 2 Donkey Boilers Fee *17-6-0* £ 27 : 8 : When received.  
 2 Starting Air Reers *10-2-0* £ 4 : 4 : *16.3.37*  
 Travelling Expenses (if any) £ 4 : 4 : *17/3*

*A. Watt*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
 Assigned *to LMC 3.37 oil Eng*  
*2 D.B. - 150th*



Certificate returned in duplicate (if required) to be sent to Registrar to Owners - reference to Surveyor's Minute.