

# REPORT ON OIL ENGINE MACHINERY.

No. 3125

8 - OCT 1947

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30.9.1947 Port of **BARROW**

Survey held at **Barrow**

Date, First Survey 24/4/45 Last Survey 21/9/47

on the **Single** Screw vessel **ACCRA**

Grass 11600  
No. 6448

By whom built **Vickers-Armstrongs Ltd** Yard No. 948 When built 1947

By whom made **do.** Engine No. **do.** When made **do.**

Boilers made at **Motherwell** By whom made **Brownlie Boilers Wks** Boiler No. 1930-A When made 1947

Indicated Horse Power **9400** Owners **ELDER Dempster Lines Ltd** Port belonging to **Liverpool**

Indicated Horse Power as per Rule **1843** Is Refrigerating Machinery fitted for cargo purposes **yes** Is Electric Light fitted **yes**

Trade for which vessel is intended **West African**

**ENGINES, &c.** Type of Engines **Opposed Piston** 2 or 4 stroke cycle **2** Single or double acting **-**

Maximum pressure in cylinders **640 lb.** Diameter of cylinders **26 1/8"** Length of stroke **9 1/16"** No. of cylinders **4** No. of cranks **12**

Indicated Pressure **91 lb.** Bee Vic. Rem. Letter **21.12.46** (13407 + 9807) Is there a bearing between each crank **no**

Number of bearings, adjacent to the Crank, measured from inner edge to inner edge **1300** Means of ignition **Comp.** Kind of fuel used **Diesel**

Revolutions per minute **118** Flywheel dia. **2493** Weight **1.1 tons** Crank pin dia. **500-150** Crank Webs Mid. length breadth **710** Thickness of crank webs **285**

Kind of shaft, dia. of journals **500** as per Rule **appd.** Intermediate Shafts, diameter **15 1/4** Thrust Shaft, diameter at collars **500**

Propeller Shaft, diameter **17 1/4** as per Rule **appd.** Screw Shaft, diameter **16 3/4** Is the shaft fitted with a continuous line screw **yes**

Thickness of liners, thickness in way of bushes **875** as per Rule **appd.** Thickness between bushes **85** Is the after end of the liner made watertight in the stern boss **yes**

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **-**

Is 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 **-**

Are 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 **-**

Length of Bearing in Stern Bush next to and supporting propeller **5'-8"**

Propeller, dia. **15'-6"** Pitch **14.55** No. of blades **4** Material **Im. Bronze** Whether Movable **not** Total Developed Surface **85** sq. feet

Method of reversing Engines **Sliding Cam** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **yes** Means of lubrication **yes**

Thickness of cylinder liners **25** Are the cylinders fitted with safety valves **yes** Are the exhaust pipes and silencers water cooled or lagged with insulating material **lagged**

Sea Water Pumps, No. **2 S.W.** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **yes**

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

Pipes connected to the Main Bilge Line No. and Size **Fore Bilge, 110 1/2"; Em. Bilge, 110 1/2"; Bilge, 110 1/2"; Ballast, 270 1/2"** How driven **Electrically**

Is the cooling water led to the bilges **no** If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements **-**

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **3 of 45 1/4**

Are there 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 Eng. Rm. 3 of 5" dia. + 2 of 3 1/2" dia.; Tunnel 1 of 2 1/2", 1 of 3" + 1 of 5" dia. In Pump Room 1 of 2 1/2" each. In Bilge 1 of 2 1/2" each. In S.W. 1 of 2 1/2" dia. In Refrig. Drain Tank 1 of 2 1/2" dia. No. 5 + 6 each 2 of 3" dia.**

Are the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **yes** Are the Bilge Suctions in the Machinery Spaces easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **yes**

Are Sea Connections fitted direct on the skin of the ship **yes** Are they fitted with Valves or Cocks **yes**

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 **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**

Are pipes pass through the bunkers **none** How are they protected **-**

Are pipes pass through the deep tanks **none** Have they been tested as per Rule **-**

Are Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **yes**

Are arrangements 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 **yes** worked from **upper (D)**

Are means provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **-**

Air Compressors, No. **-** No. of stages **-** Diameters **-** Stroke **-** Driven by **-**

Primary Air Compressors, No. **2** No. of stages **3** Diameters **10 1/2", 6 7/8", 2 3/4"** Stroke **7** Driven by **Elec. motor**

Auxiliary Air Compressors, No. **1** No. of stages **1** Diameters **3 1/4"** Stroke **3 1/4"** Driven by **3 1/2 H.P. O. Eng.**

Is provision made for first Charging the Air Receivers **starting 3 1/2 H.P. engine by hand.**

Refrigerating Air Pumps, No. **1**, Centre, each engine Diameter **1550** Stroke **1320** Driven by **Main crank.**

Refrigerating Engines crank shafts, diameter **as per Rule** No. **4** Position **FORD. END, ENG. RM. + Prod. Sh.**

Are Auxiliary Engines been constructed under special survey **yes** Is a report sent herewith **yes**

**AIR RECEIVERS:** - Have they been made under survey *yes.* State No. of Report or Certificate *25, 26.*  
 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.*  
**Injection 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 *—*  
**Starting Air Receivers, No.** *3* Total cubic capacity *540 cu. ft.* Internal diameter *4'-6"* thickness *1 1/4"*  
 Seamless, lap welded or riveted longitudinal joint *riveted* Material *steel* Range of tensile strength *28/32* Working pressure *3600 lb.*

**IS A DONKEY BOILER FITTED?** *yes.* Is a report now forwarded? *Chicago Rpt. 71439*  
 Is the donkey boiler intended to be used for domestic purposes only *no*  
**PLANS.** Are approved plans forwarded herewith for Shafting *27.2.46* Receivers *18.10.46.* Separate Fuel Tanks *7.1.47.*  
 Donkey Boilers *—* General Pumping Arrangements *13.3.46* Pumping Arrangements in Machinery Space *3.4.46.*  
 Oil Fuel Burning Arrangements *3.4.46*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied *yes*  
 State the principal additional spare gear supplied *main engines, 31 Piston rings, 1 complete main bearing, 1 fuel pump, body & working parts; auxiliary engines, main bearing bottom half bearings for one engine, 2 pistons, 32 piston rings & 12 scraper rings, 1 gudgeon pin, 1 con. rod, 1 cylinder head assembly with additional fuel & exhaust valves.*



The foregoing is a correct description.

Manufacturer. *1946*

Dates of Survey while building  
 During progress of work in shops - *1945: Apr 24, May 10, June 26, July 24, Aug 31, Sept 3, 13, Oct 9, 17, 30, Nov 2, 15, 26, Dec 17, 1946: Jan 7, 21, 23, 26, 30, 31, Feb 7, 12, 25, 27, Apr 11, 15, May 1, 6, 8, 11, 14, 17, 19, 22, 24, 26, 29, 30, 31, June 2, 9, 14, 16, 17, 23, 25, 29, 30, 31, July 1, 6, 12, 20, 26, Dec 9, 15, 22, 25, 29, Feb 5, 7, 12, 13, 14, 19, 20, 24, 25, 28, Mar 3, 5, 11, 12, 17, 19, 21, 24, 25, 26, 27, 28, 31, Apr 2, 10, 14, 15, 16, 21, 23, 25, May 1, 5, 9, 14, June 5, 10, 12, 14, 25, 30, July 15, 18, 23, Aug 7, 21, 22, 26, 27, 28, Sept. 1, 5, 8, 9, 12, 20, 21.*  
 During erection on board vessel - *—*  
 Total No. of visits *138.*

Dates of Examination of principal parts - *18/2/46 to 24/12/46*  
 Crank shaft *30.9.46.5.* Flywheel shaft *—* Thrust shaft *as for crank* Intermediate shafts *—* Tube shaft *—*  
 Screw shaft *14.12.46* Propeller *7.2.47.5.* Stern tube *21.1.47.5.* Engine seatings *14.2.47* Engines holding down bolts *12.6.47*  
 Completion of filling sea connections *13.2.47* Completion of pumping arrangements *8.9.47* Engines tried under working conditions *20.9.47*  
 Crank shaft, Material *steel* Identification Mark *148 + test nos* Flywheel shaft, Material *—* Identification Mark *—*  
 Thrust shaft, Material *—* Identification Mark *—* Intermediate shafts, Material *Steel* Identification Marks *148. 41689*  
 Tube shaft, Material *—* Identification Mark *—* Screw shaft, Material *Steel* Identification *148. 41681. 41682. 41683. 41684. 41685. 41686. 41687. 41688. 41689. 41690. 41691. 41692. 41693. 41694. 41695. 41696. 41697. 41698. 41699. 41700. 41701. 41702. 41703. 41704. 41705. 41706. 41707. 41708. 41709. 41710. 41711. 41712. 41713. 41714. 41715. 41716. 41717. 41718. 41719. 41720. 41721. 41722. 41723. 41724. 41725. 41726. 41727. 41728. 41729. 41730. 41731. 41732. 41733. 41734. 41735. 41736. 41737. 41738. 41739. 41740. 41741. 41742. 41743. 41744. 41745. 41746. 41747. 41748. 41749. 41750. 41751. 41752. 41753. 41754. 41755. 41756. 41757. 41758. 41759. 41760. 41761. 41762. 41763. 41764. 41765. 41766. 41767. 41768. 41769. 41770. 41771. 41772. 41773. 41774. 41775. 41776. 41777. 41778. 41779. 41780. 41781. 41782. 41783. 41784. 41785. 41786. 41787. 41788. 41789. 41790. 41791. 41792. 41793. 41794. 41795. 41796. 41797. 41798. 41799. 41800.*  
 Identification Marks on Air Receivers *148. L.R.H. 9.10.46. (Starting). 148. L.R.H. 19.2.47. (Whistle).*

	P	S
148 41694	4.12.46 L.R.H.	148 41696
148 41706	20.12.46 ..	148 41700
148 41702	20.12.46 ..	148 41707
148 41704	20.12.46 ..	148 41699
148 42155	9.1.47 ..	148 42157
148 41713	15.1.47 ..	148 41714

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*  
 Description of fire extinguishing apparatus fitted *2. Phomsn's 30gal. Foam type engine with 50' hose; 7 Phomsn's 2gal.; 2 Pyrene's C.T.*  
 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 *not required*  
 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 machinery of this vessel has been constructed under Special Survey in accordance with the approved plans, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. The machinery has been efficiently fitted on board and tried under working conditions at sea and found satisfactory and is eligible, in my opinion, for the

NOTATION \* L.M.C. 9.47. OIL ENG. C.L. 2 D.B. 120/16

*L.D. Horne*

Engineer Surveyor to Lloyd's Register of Shipping

The amount of Entry Fee ..	£ 31	When applied for,
Special ...	£ 214	19
Donkey Boiler Fee ...	£ 16	When received,
Travelling Expenses (if any) £		19

Committee's Minute  
 Assigned + LMC 9.47 Oil Eng. Subject.  
 C.L. 2 D B 120/16



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The Survivors are requested not to write on or below the space for Committee's Minute.