

## REPORT ON OIL ENGINE MACHINERY.

No. 12196

7 JUL 1947

Received at London Office

Date of writing Report 30 June 1947 When handed in at Local Office Salborg 19 Port of Copenhagen

No. in Survey held at Salborg Date, First Survey 27 September 1946 Last Survey 27 June 1947

Reg. Book. 85648 on the Single Motor Screw vessel **AFRICAN REEFER** Number of Visits 10

Gross 1862.14 Tons Net 968.29

Built at Shore By whom built 7/8 Helsingørsk Maskinfabrik - 7 Yard No. 230 When built 1935

Engines made at Copenhagen By whom made 7/8 Helsingørsk Maskinfabrik - 7 Engine No. 2451 When made 1935

Donkey Boilers made at Shore By whom made 7/8 Helsingørsk Maskinfabrik - 7 Boiler No. 1800 When made 1935

Brake Horse Power 1800 Owners Pedersen & Ocean - 7/8 Port belonging to Copenhagen

Nom. Horse Power as per Rule 46 MN Is Refrigerating Machinery fitted for cargo purposes ye Is Electric Light fitted ye

Trade for which vessel is intended Open sea service

**OIL ENGINES, &c.** — Type of Engine Heavy oil engine solid injection 2 stroke cycle Single or double acting single

Maximum pressure in cylinders 49 kg/cm<sup>2</sup> Diameter of cylinders 17 5/8" Length of stroke 900 1/4" No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 6.8 kg/cm<sup>2</sup> Span of bearings, adjacent to the crank, measured from inner edge to inner edge 696 1/4"

Revolutions per minute 140 Flywheel dia. 60 1/2" Is there a bearing between each crank ye

Crank Shaft, Solid forged dia. of journals 32 1/2" Means of ignition Compression Kind of fuel used Heavy oil

Semi built as per Rule 32 1/2" Crank pin dia. 340 1/4" Mid. length breadth 800 1/4" Thickness parallel to axis 208 1/4"

All built as fitted 340 1/4" Crank webs 188 1/4" Mid. length thickness 188 1/4" Shrinked Thickness around eye hole 70 1/4"

Flywheel Shaft, diameter 241.3 Intermediate Shafts, diameter 262 1/4" Thrust Shaft, diameter at collars 300 1/4"

Tube Shaft, diameter 279.4 Screw Shaft, diameter 306 1/4" Is the tube shaft fitted with a continuous liner ye

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per Rule Is the after end of the liner made watertight in the propeller boss ye

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

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 ye

If two liners are fitted, is the shaft lapped or protected between the liners ye Is an approved Oil Gland or other appliance fitted at the after end of tube shaft ye

Propeller, dia. 38 1/2" Pitch 10' No. of blades 4 Material Bronze whether moveable No Total developed surface 58 sq. feet

Method of reversing Engines direct reversible As a governor or other arrangement fitted to prevent racing of the engine when decoupled

Lubrication forced Thickness of cylinder liners 33.5 1/4" Are the cylinders fitted with safety valves ye Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

Back to the engine funnel Cooling Water Pumps, No. 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel ye

Bilge Pumps worked from the Main Engines, No. 2 Diameter 150 1/4" Stroke 175 1/4" Can one be overhauled while the other is at work ye

Pumps connected to the Main Bilge Line No. and size 2 1/2" bilge pump 20 tons/hr. 1 1/2" bilge pump 10 tons/hr. 1 1/2" ballast pump 100 tons/hr.

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 electrically

Ballast Pumps, No. and size 1 1/2" 100 tons/hr. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 1/2" 50 tons/hr.

Are two independent means arranged for circulating water through the Oil Cooler ye Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size: — In machinery spaces 4 1/2" 3" - 2 1/2" 5" In pump room funnel 2 1/2" 2 1/2"

In holds, &c. Hold 1: 2 1/2" 2 1/2" Hold 2: 2 1/2" 2 1/2" After Hold: 2 1/2" 3"

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 1/2" 5" - 2 1/2" 3"

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes ye Are the bilge suction pipes 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 ye

Are all Sea Connections fitted direct on the skin of the Ship ye Are they fitted with valves or cocks valves Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates ye

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 ye

Are the blow off cocks fitted with a spigot and brass covering plate ye What pipes pass through the bunkers None How are they protected ye

What pipes pass through the deep tanks None Have they been tested as per Rule ye

Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times ye

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 ye Is the shaft tunnel watertight ye Is it fitted with a watertight door ye worked from eng. room

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

Main Air Compressors, No. 3 No. of stages 2 diameters 280 1/4" (280-250 1/4") stroke 190 1/4" driven by auxiliary eng.

Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 100 1/4" - 45 1/4" stroke 70 1/4" driven by hand

Small Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 100 1/4" - 45 1/4" stroke 70 1/4" driven by hand

What provision is made for first charging the air receivers the hand driven air compressor

Scavenging Air Pumps, No. 2 1/2" CAPACITY 2 x 80 1/4" / MIN stroke rotary driven by the main engine

Auxiliary Engines crank shafts, diameter 130 1/4" as per Rule 130 1/4" as fitted 150 1/4" - 1 1/2" Cummins - 79 1/4" Position 3 1/2" 180 1/4" - B.W. - 1 1/2" 65 1/4" - 1 1/2" 65 1/4" - 1 1/2" 65 1/4"

Have the auxiliary engines been constructed under special survey 3 1/2" B.W. - 1 1/2" 65 1/4" - 1 1/2" 65 1/4" - 1 1/2" 65 1/4" Is a report sent herewith ye

003245-003251-0097



AIR RECEIVERS:—Have they been made under survey *yes Germanischer Lloyd* State No. of report or certificate *✓*

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. *✓* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*

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

Starting Air Receivers, No. *14* Total cubic capacity *64 3/4* Internal diameter *1400 3/4* thickness *SHELL 1/4 5/8 END 3/4*

~~Seamless, lap welded or riveted longitudinal joint~~ *✓* Material *S.M. Steel* Range of tensile strength *✓* Working pressure *by Rules* *25 sh* Actual *25 sh*

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 (straight shafting)* Receivers *yes* Separate fuel tanks *✓*

Donkey boilers *✓* General pumping arrangements *yes* Pumping arrangements in machinery space *yes*

Oil fuel burning arrangements *✓*

#### SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*

State the principal additional spare gear supplied *✓*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building  
During progress of work in shops *✓*  
During erection on board vessel *✓*  
Total No. of visits *✓*

Dates of examination of principal parts—Cylinders *✓* Covers *✓* Pistons *✓* Rods *✓* Connecting rods *✓*

Crank shaft *✓* Flywheel shaft *✓* Thrust shaft *✓* Intermediate shafts *✓* Tube shaft *✓*

Screw shaft *✓* Propeller *✓* Stern tube *✓* Engine seatings *✓* Engine holding down bolts *✓*

Completion of fitting sea connections *✓* Completion of pumping arrangements *✓* Engines tried under working conditions *✓*

Crank shaft, material *✓* Identification mark *✓* Flywheel shaft, material *✓* Identification mark *✓*

Thrust shaft, material *✓* Identification mark *✓* Intermediate shafts, material *✓* Identification marks *✓*

Tube shaft, material *✓* Identification mark *✓* Screw shaft, material *✓* Identification mark *✓*

Identification marks on air receivers *Please see Report 4c*

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 *1 1/2" Elkhammer fire foam extinguisher 2000 lbs. 4 1/2" portable ext. 10 litres each.*

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 *No* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery has been constructed under Special Survey by Germanischer Lloyd's. It has now been totally dismantled, overhauled and repaired as stated in the accompanying Report under supervision of Surveyors to this Society. The scrollings have been checked and found to be in accordance with the plans. The requirements contained in the Secretary's letter E dated 30th April 1946 addressed to the owner under heading '5. Jutta Ben' 1/2" down and 3/4" up cast iron have been complied with.*

*The machinery is now in good condition and has been tested under working conditions, including the manoeuvring with satisfactory results.*

*Recommend the vessel to have notation of L.M.C.-6.47 and Tail shaft seen 6.47.09.*

The amount of Entry Fee ... £ *Notes on Report No 9.*

Special ... £ : When applied for *19*

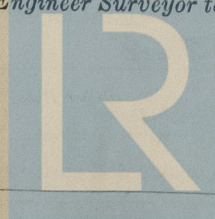
Donkey Boiler Fee... £ : When received *19*

Travelling Expenses (if any) £ *PHIL: 8 AUG 1947*

(The Committee's Minute *LMC 6.47 Del Eng.*

Assigned *S (0.9) 6.47*

*S. Lütken.*  
Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register  
Foundation