

# REPORT ON OIL ENGINE MACHINERY.

No. 18563

5 NOV 1951

Received at London Office

Year of Report 25th Oct. 1951 When handed in at Local Office 29th Oct. 1951 Port of Gothenburg

Survey held at Kristinehamn Date, First Survey 31st May Last Survey 8th October 1951

Number of Visits 11

Single on the TUG Screw vessel "S H E T L A N D" Approximate Tons Gross 10650 Net 6035

By Rule Gothenburg By whom built A-B. Lindholmens Varv Yard No. 1017 When built 1951

Made at Kristinehamn By whom made A-B. Karlstads Mek. Verkstad Engine No. 20 When made 1951

Boilers made at --- By whom made --- Boiler No. --- When made ---

Indicated Power 5950 Owners A/S Det Dansk-Franske Dampskibsselskab Port belonging to Copenhagen

As per Rule 1263 Is Refrigerating Machinery fitted for cargo purposes. --- Is Electric Light fitted. ---

Which vessel is intended International Tanker

GINES, &c. Type of Engines Diesel engine Type Sulzer 2 or 4 stroke cycle 2 Single or double acting Single

Pressure in cylinders 52 kg/cm<sup>2</sup> Diameter of cylinders 720 mm Length of stroke 1250 mm No. of cylinders 9 No. of cranks 9

Indicated Pressure 5.75 kg/cm<sup>2</sup> Ahead Firing Order in Cylinders 1-6-7-3-4-9-2-5-8 Span of bearings, adjacent to the crank, measured

Edge to inner edge 930 mm Is there a bearing between each crank Yes ✓ Revolutions per minute 125

Dia. 2425 mm Weight 1700 kgs Moment of inertia of flywheel 5000 kgm<sup>2</sup> Means of ignition Compr. Kind of fuel used Diesel oil

Thrust Shaft diameter as fitted 490 mm Crank pin dia 490 mm Crank webs with 150 mm central hole Mid. length breadth --- Thickness parallel to axis 306 mm

Intermediate Shafts, diameter as fitted --- Thrust Shaft, diameter at collars as fitted 490 mm

Screw Shaft, diameter as fitted --- Is the tube screw shaft fitted with a continuous liner ---

Thickness in way of bushes as fitted --- Thickness between bushes as fitted --- Is the after end of the liner made watertight in the

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

--- 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

shaft --- If so, state type --- Length of bearing in Stern Bush next to and supporting propeller ---

Dia. --- Pitch --- No. of blades --- Material --- whether moveable --- Total developed surface --- sq. feet

Inertia of propeller (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) --- Kind of damper, if fitted ---

Reversing Engines Compr. air Is a governor or other arrangement fitted to prevent racing of the engine Yes ✓ Means of

Forced Thickness of cylinder liners 45 mm Are the cylinders fitted with safety valves Yes ✓ Are the exhaust pipes and silencers water cooled

with non-conducting material --- If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned

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

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

Connected to the Main Bilge Line (No. and size --- How driven ---

Draining water led to the bilges. --- If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

Power Driven Lubricating Oil Pumps, including spare pump, No. and size ---

Independent means arranged for circulating water through the Oil Cooler --- Suctions, connected to both main bilge pumps and auxiliary

Pumps, No. and size: --- In machinery spaces --- In pump room ---

Power Pump Direct Suctions to the engine room bilges, No. and size ---

Bilge suction pipes in holds and tunnel well fitted with strum-boxes --- Are the bilge suction in the machinery spaces led from easily

strum-boxes, placed above the level of the working floor, with straight tail pipes to the bilges. ---

Connections fitted direct on the skin of the Ship --- Are they fitted with valves or cocks --- Are they fixed

high on the ship's side to be seen without lifting the platform plates. --- Are the overboard discharges above or below the deep water line. ---

Each fitted with a discharge valve always accessible on the plating of the vessel. --- Are the blow off cocks fitted with a spigot and brass covering plate. ---

How are they protected. ---

Have they been tested as per Rule. ---

es, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times. ---

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

Is the shaft tunnel watertight. --- Is it fitted with a watertight door. --- worked from. ---

Means provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork. ---

Compressors, No. None No. of stages --- diameters --- stroke --- driven by ---

Air Compressors, No. --- No. of stages --- diameters --- stroke --- driven by ---

Auxiliary Air Compressors, No. --- No. of stages --- diameters --- stroke --- driven by ---

Arrangement is made for first charging the air receivers. ---

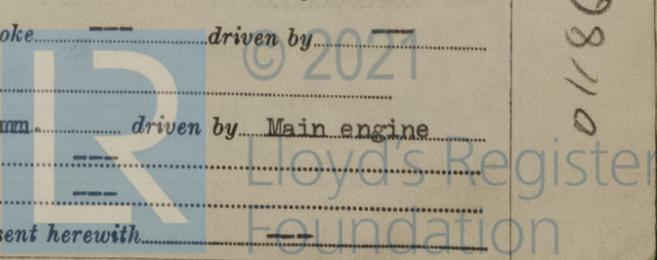
Air Pumps, No. 9 D.A. (1 for each cyl.) diameter 950 mm stroke 520 mm driven by Main engine

Engines crank shafts, diameter as per Rule --- No. --- Position ---

Have auxiliary engines been constructed under special survey. --- Is a report sent herewith. ---

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AIR RECEIVERS:—Have they been made under survey..... State No. of report or certificate.....

Is each receiver, which can be isolated, fitted with a safety valve as per Rule.....

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

Injection Air Receivers, No..... Cubic capacity of each..... Internal diameter..... thickness.....

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

Starting Air Receivers, No..... Total cubic capacity..... Internal diameter..... thickness.....

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

IS A DONKEY BOILER FITTED..... 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..... London 14.4.1949..... Receivers..... Separate fuel.....

Donkey boilers..... General pumping arrangements..... Pumping arrangements in machinery space.....

Oil fuel burning arrangements.....

Have Torsional Vibration characteristics been approved..... Yes..... Date of approval..... London 20.4.1949.....

SPARE GEAR.

Has the spare gear required by the Rules been supplied..... Yes.....

State the principal additional spare gear supplied..... To be checked on board.....

The foregoing is a correct description, and the particulars of the installation as fitted are as approved..... torsional vibration characteristics.....

Signature: *W. J. Wall*

Manufacturer.....

Dates of Survey while building: During progress of work in shops - - 31st May - 8th October, 1951; During erection on board vessel - - ; Total No. of visits 11

Dates of examination of principal parts: Cylinders 18.19.7.51 Covers 13.7.1951 Pistons 17.8.1951 Rods --- Connecting rods --- Crank shaft 18.6.1951 Flywheel shaft --- Thrust shaft 18.6.1951 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 S.M. Steel Identification mark LL.No.1488-89 BR 5.4.51 Flywheel shaft, material --- Identification mark --- Thrust shaft, material S.M. Steel Identification mark LL.No.1490 BR 5.4.51 Intermediate shafts, material --- Identification marks --- Tube shaft, material --- Identification mark --- Screw shaft, material --- Identification mark --- Identification marks on air receivers ---

Welded receivers, state Makers' Name.....

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.....

Description of fire extinguishing apparatus fitted.....

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..... M/T "Christiansborg"

General Remarks (State quality of workmanship, opinions as to class, &c.....)

This main engine has been constructed under Special Survey and in accordance with the Rules and approved plans. The materials were tested by the Society's Surveyors with satisfactory results, and the workmanship was of good quality throughout. Lloyd's test certificates in respect of crank and thrust shafts are attached. The engine was tested under working conditions and on completion partially dismantled and sent to the Shipbuilder for installation on board the vessel.

It is recommended that this main engine be assigned the record of +LMC with date, subject to this being installed on board and tested under working conditions, all to the satisfaction of the Society's Surveyors.

The amount of Entry Fee ... £ --- : --- : Special ... Kr. 3620:00: When applied for 29th Octob. 19 51 Late Fee... Kr. :60:00: When received --- 19 --- Travelling Expenses (if any) Kr. 275:60:

Signature: *Anders Sjögren*  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute..... TUES. 19 FEB 1952

Assigned..... *Su F.E. Moly. spt.*

Certificate (if required) to be sent to Committee's Minute (The Surveyors are requested not to write on or below the space for Committee's Minute.)

