

REPORT ON OIL ENGINE MACHINERY.

No. 22160

22 FEB 1956

Received at London Office

Date of writing Report 8th Feb., 1956 When handed in at Local Office 20th Febr., 1956 Port of Gothenburg

No. in Survey held at Gothenburg Date, First Survey 28th April, 1955 Last Survey 8th February, 1956
Reg. Book. Number of Visits 64

34885 on the ~~Traffic~~ ~~Triplex~~ ~~Quadrants~~ Single Screw vessel "ARJE PLOG" Tons Gross 10805 Net 5566

Built at Gothenburg By whom built AB. Götaverken Yard No. 711 When built 1955-56

Engines made at Gothenburg By whom made AB. Götaverken Engine No. 2878 When made 1955-56

Donkey Boilers made at Annan By whom made Cochran & Co. Messrs. Boiler No. 20256 When made 1955

Brake Horse Power { Maximum 5000 Service 1000 Owners Trafik AB. Grängesberg-Oxelösund Port belonging to Stockholm

M.N. as per Rule 1000 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended International Cargo

OIL ENGINES, &c. —Type of Engines DM 680/1500 VGS 7. 2 or 4 stroke cycle 2 Single or double acting S.A.

Maximum pressure in cylinders 49 kg/cm² Diameter of cylinders 680 mm Length of stroke 1500 No. of cylinders 7 No. of cranks 7

Mean Indicated Pressure 6.5 kg/cm² Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 974 mm Is there a bearing between each crank Yes Revolutions per minute { Maximum 112 Service ---

Flywheel dia 2136 mm Weight 9460 mm Moment of inertia of flywheel (kg. cm sec.²) 72100 Means of ignition air Kind of fuel used oil

Crank Shaft, ~~Solid forged~~ ~~semi built~~ ~~built~~ dia. of journals as fitted 480/130 mm Crank pin dia 480/105 mm Crank webs Mid. length breadth --- Mid. length thickness --- Thickness parallel to axis 300 mm Thickness around eye-hole 245 mm

Flywheel Shaft, diameter as per Rule --- Intermediate Shafts, diameter as fitted 350 mm Thrust Shaft, diameter at collars as fitted 480 mm

Tube Shaft, diameter as fitted --- Screw Shaft, diameter as fitted --- Is the ~~shaft~~ shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as fitted 20.5 mm Thickness between bushes as fitted 20 mm 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 only 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. --- If two liners are fitted, is the shaft lapped or protected between the liners. --- Is an approved Oil Gland fitted at the after end of stern tube. --- If so, state type. --- Length of bearing in Stern Bush next to and supporting propeller 1700 mm

Propeller, dia 5100 mm Pitch 4125 mm No. of blades 4 Material Bronze whether moveable --- Total developed surface 10.0 sq. feet

Moment of inertia of propeller including entrained water (kg. cm sec.²) 155300 Kind of damper, if fitted ---

Method of reversing Engines Direct by compr. air Is a governor or other arrangement fitted to prevent racing of the engine Yes Means of lubrication Forced Thickness of cylinder liners 50 mm 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. --- Cooling Water Pumps, No. and how driven 2 x 2 el. driven Working F.W. 3330 lit/min.

S.W. 3750 Spare F.W. 3330 S.W. 3750 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Bilge Pumps worked from the Main Engines, No. and capacity 1 x 70 m³/h 1 x 50 m³/h 1 x 120 m³/h 1 x 120 m³/h

Pumps connected to the Main Bilge Line No. and capacity of each El. driven El. driven El. driven El. driven

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. --- 2 x 450 m³/h

Ballast Pumps, No. and capacity 1 x 120 m³/h Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 x 185 m³/h.

Are two independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions 2 x 2"

No. and size: In machinery spaces 4 x 100 mm, 2 x 64 mm, c/d ER 1 x 51 mm c/d 9-10, 1 x 51 mm In pump room ---

In holds, &c Dry tanks, port and stbd. forw. and aft, 1 x 64 mm each Hand pump in chain locker 2x2", stbd. forw. 1x2" Steering gear room 2x2"

Direct Bilge Suctions to the engine room bilges, No. and size 1 x 150 mm. 1 x 200 mm.

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction 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 Both Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates to lift 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 No coal bunker How are they protected ---

What pipes pass through the deep tanks Heating coils and bilge pipes 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 ER aft 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 No. of stages 2 diameters 300/260 stroke 160 driven by el. motors

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

Small Auxiliary Air Compressors, No. 1 No. of stages 3 diameters 80, 95, 32 mm stroke 26 mm driven by Diesel engine

What provision is made for first charging the air receivers small starting up compressors driven by a hand-starting diesel engine.

Scavenging Air Pumps or Blowers, No. two separate pumps to each cylinder/ How driven by levers connected to the crosshead

Auxiliary Engines Have they been made under survey Yes Engine Nos. 2879/80/81 Position of each in engine room All engines and also

Makers' name AB. Götaverken Report No. ---

5600 - 413510 - 96510

1/3/56

Lloyd's Register Foundation

AIR RECEIVERS:—Have they been made under survey... Yes State No. of report or certificate 19899

State full details of safety devices Spring loaded safety valves

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

Starting Air Receivers, No. 2 Total cubic capacity 2 x 10 m³ Internal diameter 1746 mm thickness 27 mm

Seamless, welded or riveted longitudinal joint Welded Material SM Steel Range of tensile strength 45.3-46.8 Working pressure 25 kg/cm²

IS A DONKEY BOILER FITTED Yes If so, is a report now forwarded No, a certificate only.

Is the donkey boiler intended to be used for domestic purposes only Also for heating coils in oil fuel tanks.

PLANS. Are approved plans forwarded herewith for shafting 10.3.55. Receivers 25.5.55. Separate fuel tanks. ---

Donkey boilers --- General pumping arrangements 8.7.55. Pumping arrangements in machinery space 8.7.55.

Oil fuel burning arrangements ---

Have Torsional Vibration characteristics been approved Yes Date and particulars of approval 10.3.55. for a service speed of 112 R.P.M. and not to be operated continuous by between 89 and 94

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes State if for "short voyages" only 43 " 48

State the principal additional spare gear supplied One bronze propeller and one propeller shaft with nut.

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

AKTIEBOLAGET GÖTAVERKEN P. Eriksson Manufacturer.

Dates of Survey while building During progress of work in shops - - 28.4.55. - 19.11.55.

During erection on board vessel - - - 19.11.55. - 8.2.56.

Total No. of visits 69

Dates of examination of principal parts—Cylinders 10.9.55. Covers 18.8., 19.8.55. Pistons 24.8.55. Rods 28.4.55. Connecting rods 8.6.55.

Crank shaft 18.8.55. Flywheel shaft --- Thrust shaft 18.8.55. Intermediate shafts 2.12.55. Tube shaft ---

Screw shaft 4.10.55. Propeller 28.12.55. Stern tube 5.7.55. Engine seatings 15.10.1955. Engine holding down bolts 19.11.55.

Completion of fitting sea connections 28.12.55. Completion of pumping arrangements 30.1.56. Engines tried under working conditions 21, 22, 24,

Crank shaft, material S.M. Steel Identification mark EJ 2.6.55. Flywheel shaft, material --- Identification mark Lloyd's No. 369/70

Thrust shaft, material S.M. Steel Identification mark EJ 2.6.55. Intermediate shafts, material S.M. Steel Identification mark Lloyd's No. 371

Tube shaft, material --- Identification mark --- Screw shaft, material S.M. Steel Identification mark Lloyd's No. 121

Identification marks on air receivers No. 2741-2742 Lloyd's Test Got. 41 kg. W.P. 25 kg. AS 13.10.55.

Welded receivers, state Makers' Name Degerfors Jernverks AB, Degerfors.

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

Full description of fire extinguishing apparatus fitted in machinery spaces 7x12 lit. foam 1x6 kg. CO2 & 1x20 kg CO2 also connecting to the CO2 system which consists of 84x30 kg CO2 and 30x30 kg CO2 as per Rules. Steam smothering for the DB.

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 ---

What is the special notation desired Strengthened for navigation in ice.

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel m/s "ABISKO" Götaverkens Yard No. 710

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c. This machinery has been built under Special Survey in accordance with the Rules and approved plans and has been securely fitted onboard under my inspection and to my satisfaction. The workmanship and used material are good. All important forgings and all pumps for essential services have been examined and tested as required by the Rules. The el-weldings of the main engine bedplate & cylinder frames have been examined by Surveyors to this Society at Dortmund and at Gothenburg. The main engine bedplate & cylinder frames have also been examined by the undersigned, after that the engine was tried under full working power in shop, and found free from defects. Certificates in respect of shafting, air receivers and propellers are attached. The machinery has been examined under full working power on a trial trip and found to work satisfactorily. A combined silencer and exhaust gas economiser of AB. Götaverken's Multitubular type has been built under survey in accordance with the Rules and approved plans and has been securely fitted onboard.

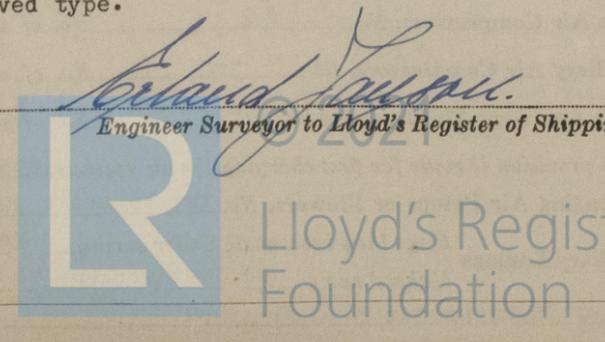
Note: This engine has been fitted with safety relief devices of an approved type.

The amount of Survey Fee const. Kr. 3490:00: When applied for 20.2. 1956

Special (dur. inst.) Kr. 1990:00: Exhaust gas economiser Kr. 150:00: When received --- 19---

Travelling Expenses (if any) £ --- : --- : TUESDAY 20 MAR 1956

Committee's Minute Assigned HLMG 2 56 (Tors. End. t.) JB 100 lb. CH



Gothenburg Office. (The Surveyors are requested not to write on or below the space for Committee's Minute.)