

List of

15/E

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 12832

FEB 20 1940

Received at London Office

Date of writing Report *16th Feb 1940* When handed in at Local Office *16th Feb 1940* Port of *GOTHENBURG*

No. in Survey held at *GOTHENBURG* Date, First Survey *30th March 1939* Last Survey *16th Feb 1940*
Reg. Book. *L.P.P.* Number of Visits *87*

38051 on the *Single* *Triple* *Quadruple* Screw vessel *"S/ ANDREA BRÖVIG"* Tons { Gross *10173* Net *6083*

Built at *GOTHENBURG* By whom built *A.B. GÖTAVETKEN* Yard No. *539* When built *1940*

Engines made at *GOTHENBURG* By whom made *A.B. GÖTAVETKEN* Engine No. *266* When made *1940*

Donkey Boilers made at *GOTHENBURG* By whom made *A.B. GÖTAVETKEN* Boiler No. *283* When made *1940*

Brake Horse Power *5800* Owners *TH. BRÖVIG* Port belonging to *FATPSUND*

Nom. Horse Power as per Rule *1030* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

Trade for which vessel is intended *GENERAL*

OIL ENGINES, &c. Type of Engines *Heavy Oil* 2 or 4 stroke cycle *2* Single or double acting *2A*

Maximum pressure in cylinders *49 kg/cm²* Diameter of cylinders *620 (24 3/8")* Length of stroke *412 (16 1/8")* No. of cylinders *5* No. of cranks *5*

Mean Indicated Pressure *6.85 kg/cm²* Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *946* Is there a bearing between each crank *Yes*

Revolutions per minute *110* Flywheel dia. *1025 (40 3/8")* Weight *-* Means of ignition *Compression* Kind of fuel used *Diesel Oil*

Crank Shaft, { Solid forged dia. of journals as per Rule *445 mm* as fitted *465 mm* Crank pin dia. *465/100 mm* Crank Webs Mid. length breadth *-* shrunk Thickness parallel to axis *290 mm*
{ Semi built All built as fitted *465 mm* with *100 mm* central hole Mid. length thickness *-* shrunk Thickness around eye-hole *262.5 mm*

Flywheel Shaft, diameter as per Rule *387 mm* as fitted *390 mm* Intermediate Shafts, diameter as per Rule *387 mm* as fitted *390 mm* Thrust Shaft, diameter at collars as per Rule *406 mm* as fitted *460 mm* with *100 mm* central hole

Tube Shaft, diameter as per Rule *-* as fitted *-* Screw Shaft, diameter as per Rule *424 mm* as fitted *435 mm* Is the { tube screw } shaft fitted with a continuous liner *Yes*

Bronze Liners, thickness in way of bushes as per Rule *20.5 mm* as fitted *23.5 mm* Thickness between bushes as per Rule *15.5 mm* as fitted *20.5 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 *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 *fits tightly*

If two liners are fitted, is the shaft lapped or protected between the liners *Yes* 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 *1738 mm*

Propeller, dia. *5330 mm* Pitch *4525 mm* No. of blades *4* Material *Alumina* whether Moveable *No* Total Developed Surface *11.85 m²* sq. feet

Method of reversing Engines *Direct with compressed air* Is a governor or other arrangement fitted to prevent racing of the engine when de-clutching *Yes* Means of lubrication *Forced*

Thickness of cylinder liners *42 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 *led to a funnel*

Cooling Water Pumps, No. *Five* 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. *None* Diameter *-* Stroke *-* Can one be overhauled while the other is at work *-*

Pumps connected to the Main Bilge Line { No. and Size *1 bilge 25 ton/hour* | *1 Ballast 100 ton/hour* | *condenser circulating 180 ton/hour*
How driven *Electric motor* | *Electric motor* | *Steam engine*

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 *-*

Ballast Pumps, No. and size *One a 100 ton/hour* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *Two a 3883 litres/min.*

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 *5 a 2 1/2"; 2 a 3 1/2" to afters*
In Holds, &c. *By cargo hold 2 a 2 1/2"* *Forward pump room: 1 a 5" to C.P.M.; 1 a 4" to F.P.; 1 a 2 1/2" to pump room*
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size: 1 a 5" to ballast pump; 1 a 5" to cond. circ. pumps.

Are all the Bilge Suction pipes in Holds 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*

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 *Above*

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 bunkers* How are they protected *-*

What pipes pass through the deep tanks *Heating coils* 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 *No tunnel* Is it fitted with a watertight door *Yes* 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. *None* No. of stages *-* Diameters *-* Stroke *-* Driven by *-*

Auxiliary Air Compressors, No. *2* No. of stages *2* Diameters *360/280 mm* Stroke *150 mm* Driven by *Electric motor*

Small Auxiliary Air Compressors, No. *1* No. of stages *2* Diameters *106/84 mm* Stroke *80 mm* Driven by *Steam eng.*

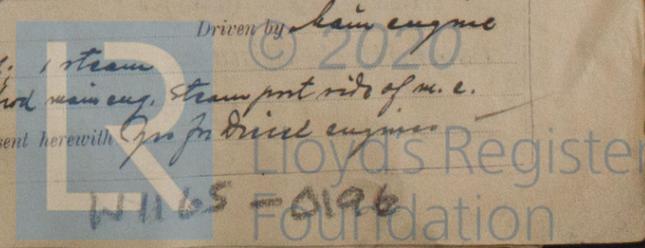
What provision is made for first Charging the Air Receivers *From small steam driven compressor* Driven by *Main engine*

Scavenging Air Pumps, No. *Two* Diameter *-* Stroke *-* No. *2* driven by *steam* Position *Driven from main eng. steam port side of m. e.*

Auxiliary Engines crank shafts, diameter as per Rule *141 mm* as fitted *160 mm* Is a report sent herewith *Yes for Diesel engine*

Have the Auxiliary Engines been constructed under special survey *Yes*

20.24.31
3.5.11.14
28.29.
29.30.31
115



AIR RECEIVERS:—Have they been made under survey *Yes* 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. *None* 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. *2* Total cubic capacity *2 1/2 = 22.6 m³* Internal diameter *800 mm* thickness *25 mm*
 Seamless, lap welded or riveted longitudinal joint *Pointed* Material *S.S. Steel* Range of tensile strength *45,60 kg/cm²* Working pressure by Rules *25.5 kg/cm²* Actual *25 kg/cm²*
 If so, is a report now forwarded? *Yes*

IS A DONKEY BOILER FITTED? *Yes* Is the donkey boiler intended to be used for domestic purposes only *No*
PLANS. Are approved plans forwarded herewith for Shafting *13.12.38* Receivers *27.5.38* Separate Fuel Tanks *16.10.39*
 (If not, state date of approval)
 Donkey Boilers *12.12.38* **FWD** General Pumping Arrangements *20.10.38* Pumping Arrangements in Machinery Space *4.1.39*
 Oil Fuel Burning Arrangements *-*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*
 State the principal additional spare gear supplied *1 starting air slide valve, 6 fuel pump plungers & casings, 8 top fuel valves complete, 8 bottom fuel valves complete, 5 fuel needle valves, a number of piston rings, 1 top exhaust belt complete, 1 bottom exhaust belt complete, 1 scavange air belt complete, 2 crosshead bearing belts, 2 main bearing helms, 2 scavange blower impellers, 1 bottom end bearing & 2 main bearings complete for the exhaust valve crankshaft, 1 propeller shaft & nut.*

The foregoing is a correct description.

ARISTOPHANES GÖTAY
 Manufacturer *Ar*

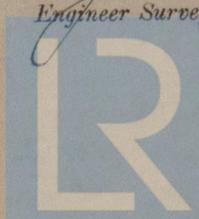
Dates of Survey while building
 During progress of work in shops -- *1939, March 30, May 22, 24, 25, June 13, July 4, 22, 24, 24, 24, 26, 28, 29, Aug. 2, 7, 8, 9, 10, 12, 15, 17, 22, 21, 26, 28, Sept. 5, 6, 7, 13, 14, 16, Oct. 7, 12, 13, 23, 24, 25, 27, 28, Nov. 8, 9, 11, 14, 15, 17, 20, 22, 27, 28, 28, Dec. 8, 9, 13, 16, 20, 22, 23, 27, 29, 1940 Jan. 2, 3, 8, 10, 11, 12.*
 During erection on board vessel -- *1939, Nov. 9, 11, 13, 22, Dec. 19, 20, 21, 29, 1940 Jan. 2, 3, 8, 12, 15, 16, 17, 25, 29, Feb. 2, 3, 5, 8*
 Total No. of visits *87*

Dates of Examination of principal parts—Cylinders *25/8-6/9-39* Covers *25/8-6/9-39* Pistons *7/8-10/8-39* Rods *2.8.39* Connecting rods *2.8.39*
 Crank shaft *29.7.39* Flywheel shaft *✓* Thrust shaft *29.7.39* Intermediate shafts *13.12.39* Tube shaft *✓*
 Screw shaft *14.11.39* Propeller *22.11.39* Stern tube *8.11.39* Engine seatings *9.10.39* Engines holding down bolts *22.11.39*
 Completion of fitting sea connections *13.11.39* Completion of pumping arrangements *2.2.40* Engines tried under working conditions *9/11.39 & 29/1.40*
 Crank shaft, Material *S.S. Steel* Identification Mark *LLOYD'S NS 1424/5 19.7.39 T.W.* Flywheel shaft, Material *✓* Identification Mark *-*
 Thrust shaft, Material *S.S. Steel* Identification Mark *LLOYD'S NS 1426 19.7.39 T.W.* Intermediate shafts, Material *S.S. Steel* Identification Marks *LLOYD'S NS 610 13.12.39 HBS*
 Tube shaft, Material *-* Identification Mark *-* Screw shaft, Material *Original LLOYD'S NS 603 5.14.11.39* Identification Mark *LLOYD'S NS 1519 5.1.14.11.39*
 Identification Marks on Air Receivers *NS 555/6 LLOYD'S TEST 40 NS 6 W.P. 25 NS 6 S.J. 17.11.39*

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 *ARISTOPHANES, GÖTAY, YARD NS 587*

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The main & auxiliary machinery of this vessel have been constructed under special survey in accordance with the Rules & approved plans.
 The workmanship & materials are good and forging reports for the shafting & test sheet for the materials of the air receivers and donkey boilers are attached.
 The machinery has been fitted in the vessel under my supervision and to my satisfaction, and has been tested on a trial trip & found in order.
 The machinery of this vessel is eligible in my opinion to be classed + LMC 2-40, CL, 2DB 150 lb.*

The amount of Entry Fee .. *Ks. 114:00* : When applied for, *16th Feb 1940*
 Special .. *Ks. 2389:25* :
 Starting air receivers .. *Ks. 169:60* : When received, *29-2-1940*
 Donkey Boiler Fee .. *Ks. 169:60* :
 Travelling Expenses (if any) £ .. *-* :

Sten Peterson
 Engineer Surveyor to Lloyd's Register of Shipping.

 © 2020 Lloyd's Register Foundation

Committee's Minute *FRI. 23 FEB 1940*
 Assigned *+ d.m.b. 2.40 oil by G. 2 S.B. - 150 lb*

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