

# REPORT ON OIL ENGINE MACHINERY.

No. 15310

SEP -7 1938

Received at London Office

Date of writing Report 29 Aug 1938 When handed in at Local Office 1938 Port of Amsterdam  
No. in Survey held at Hongelo & Amsterdam Date, First Survey 8th July '37 Last Survey 10 Aug 1938  
Reg. Book. "Crista" Number of Visits 39

on the Single Twin Triple Quadruple Screw vessel "Crista" Tons Gross Net  
Built at Schiedam By whom built Woolf Gusto Yard No. 726 When built 1938  
Engines made at Hongelo & Amsterdam By whom made Stork & Workspees Engine No. 4151 When made 1938  
Donkey Boilers made at Amsterdam By whom made H. V. Workspees Boiler No. 2805 When made 1938  
Brake Horse Power 1500 Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_  
Nom. Horse Power as per Rule 223 Is Refrigerating Machinery fitted for cargo purposes \_\_\_\_\_ Is Electric Light fitted \_\_\_\_\_  
Trade for which vessel is intended Ocean Trade 19 1/2 43 5/8

**OIL ENGINES, &c.**—Type of Engines Solid Injection Super charge 2 or 4 stroke cycle 4 Single or double acting Single  
Maximum pressure in cylinders 400 lbs. Diameter of cylinders 500 mm Length of stroke 1100 mm No. of cylinders 6 No. of cranks 6  
Mean Indicated Pressure 130 lbs. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 640 mm Is there a bearing between each crank Yes  
Revolutions per minute 140 Flywheel dia. 1930 mm Weight 4085 kg Means of ignition Compression Kind of fuel used Diesel Oil  
Crank Shaft, Solid forged dia. of journals as per Rule appx. Crank pin dia. 350 mm Crank Webs Mid. length breadth 600 mm Thickness parallel to axis 210 mm  
Semi built dia. of journals as fitted 350 mm Mid. length thickness 120 mm Thickness around eye-hole 854 mm  
All built Flywheel Shaft, diameter as per Rule appx. Intermediate Shafts, diameter as per Rule appx. Thrust Shaft, diameter at collars as per Rule appx.  
as fitted 300/350 as fitted 175 mm as fitted 300 mm  
Tube Shaft, diameter as per Rule \_\_\_\_\_ Screw Shaft, diameter as per Rule appx. Is the tube shaft fitted with a continuous liner Yes  
as fitted \_\_\_\_\_ as fitted 300 mm  
Bronze Liners, thickness in way of bushes as per Rule appx. Thickness between bushes as per Rule appx. Is the after end of the liner made watertight in the  
as fitted 10.5 mm as fitted 15 mm  
propeller boss \_\_\_\_\_ If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner \_\_\_\_\_

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 or other appliance fitted at the after end of the tube  
shaft \_\_\_\_\_ If so, state type \_\_\_\_\_ Length of Bearing in Stern Bush next to and supporting propeller 1810 mm  
Propeller, dia. 3560 mm Pitch 2054/406 No. of blades 4 Material bronze whether Moveable \_\_\_\_\_ Total Developed Surface 3.964 sq. feet  
Method of reversing Engines Oil Engine Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication  
forced Thickness of cylinder liners 3.5/4.5 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. 120 rotary 100 ton per hour Is the sea suction provided with an efficient strainer which can be cleared within the vessel \_\_\_\_\_  
Bilge Pumps worked from the Main Engines, No. 2 rotary pumps 30 ton per hour Can one be overhauled while the other is at work Yes  
Pumps connected to the Main Bilge Line { No. and Size 1 rotary 30 ton per hour 1 Duplex 8" x 8" x 10"  
How driven Main Engine

Is the cooling 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 arrangements \_\_\_\_\_  
Ballast Pumps, No. and size 1 8" x 8" x 10" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size \_\_\_\_\_  
Are two independent means arranged for circulating water through the Oil Cooler \_\_\_\_\_ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Pumps, No. and size:—In Machinery Spaces \_\_\_\_\_ In Pump Room \_\_\_\_\_  
In Holds, &c. \_\_\_\_\_  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size \_\_\_\_\_  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes \_\_\_\_\_ 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 \_\_\_\_\_  
Are all Sea Connections fitted direct on the skin of the ship \_\_\_\_\_ Are they fitted with Valves or Cocks \_\_\_\_\_  
Are they fixed sufficiently 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  
Are they 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  
What pipes pass through the bunkers \_\_\_\_\_ How are they protected \_\_\_\_\_  
What pipes pass through the deep tanks \_\_\_\_\_ Have they been tested as per Rule \_\_\_\_\_

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times \_\_\_\_\_  
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 \_\_\_\_\_ Is the Shaft Tunnel watertight \_\_\_\_\_ 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. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_  
Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_  
Small Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_  
What provision is made for first Charging the Air Receivers \_\_\_\_\_  
Super charge Seating Air Pumps, No. bottom part of each cylinder Diameter 500 mm Stroke 1100 mm Driven by Main Engine  
Auxiliary Engines crank shafts, diameter as per Rule \_\_\_\_\_ Position \_\_\_\_\_  
as fitted \_\_\_\_\_  
Have the Auxiliary Engines been constructed under special survey \_\_\_\_\_ Is a report sent herewith \_\_\_\_\_



AIR RECEIVERS:—Have they been made under survey *Yes* ✓ State No. of Report or Certificate *See below.*

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* ✓

Injection Air Receivers, No. *✓* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓* Is a drain fitted at the lowest part of each receiver *Yes* ✓

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

Starting Air Receivers, No. *3* Total cubic capacity *424 cub feet* Internal diameter *10.95 in* thickness *1.9 in* Seamless, lap welded or riveted longitudinal joint *riveted* Material *Sh. Steel* Range of tensile strength *30.5-35 ton* Working pressure by Rules *✓* Actual *30 h.p.*

IS A DONKEY BOILER FITTED? *Yes* ✓ If so, is a report now forwarded? *See R. dom report no 15.*

PLANS. Are approved plans forwarded herewith for Shafting *13-4-37* Receivers *6-1-30* Separate Fuel Tanks *✓* (If not, state date of approval) *1-7-37* Donkey Boilers *10-11-37* General Pumping Arrangements *10-11-37* Pumping Arrangements in Machinery Space *✓*

Oil Fuel Burning Arrangements *10-11-37* SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes* ✓ State the principal additional spare gear supplied *As per attached list.*

The foregoing is a correct description, MACHINEFABRIEK GEBR. STORK & CO. Manufacturer.

Dates of Survey while building: During progress of work in shops—*1937 July 0-19-21-23-26 Aug 1-16-30 Dec 7-11-15-20-30*; During erection on board vessel—*1930 Jan 3-4-12-20-31 Feb 3-14; March 3-10-12-14-20-28*; Total No. of visits *39; April 15-27-29; May 11-13-16-17 June 0-15-20 July 20 Aug 13-*

Dates of Examination of principal parts—Cylinders *18-22-25-40* Pistons *29-3-14* Rods *21-12-30* Connecting rods *24-14-5* Crank shaft *5/5-14/5* Flywheel shaft *14/5* Thrust shaft *15/6* Intermediate shafts *28/6* Tube shaft *✓* Screw shaft *10/6* Propeller *✓* Stern tube *19/1-30* Engine seatings *✓* Engines holding down bolts *✓*

Completion of fitting sea connections *✓* Completion of pumping arrangements *✓* Engines tried under working conditions *✓* Crank shaft, Material *Sh. Steel* Identification Mark *LL0103* Flywheel shaft, Material *Sh. Steel* Identification Mark *12-11-37* Thrust shaft, Material *Sh. Steel* Identification Mark *LL0115* Intermediate shafts, Material *Sh. Steel* Identification Marks *LL0103, LL0115, H.P.B. 20-6-30* Tube shaft, Material *✓* Identification Mark *15-6-30* Screw shaft, Material *Sh. Steel* Identification Mark *LL0103, LL0115, H.P.B. 20-6-30* Identification Marks on Air Receivers *NO 4713-4714*

Is the flash point of the oil to be used over 150° F. *✓* Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *✓* 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 *✓* If so, state name of vessel *M. T. Antonia*

General Remarks (State quality of workmanship, opinions as to class, &c. *This heavy oil engine has been constructed under Special Survey in accordance with the Society's rules and regulations as well in accordance with the approved plans and Secretary letters thereto. The material used in the construction is good and workmanship satisfactory. The engine have been shipped to schiedam. In my opinion the vessel for which this engine is intended will be eligible for the notation of + L.M.C. (with date) when the whole machinery has been fitted satisfactorily on board and tried under full working condition.*

The amount of Entry Fee *£ 40.00* When applied for, *5-9-1938* 4/5 Special *£ 535.00* Donkey Boiler Fee *£ 45.00* When received, *28.10.1938* Receivers *£ 34.50* Travelling Expenses (if any) *£ 34.50*

Engineer Surveyor to Lloyd's Register of Shipping, *M. Young*

Committee's Minute *See R. I.E. machy 1/1-2766* Assigned *See R. I.E. machy 1/1-2766* FRI 6 JAN 1939

