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# REPORT ON OIL ENGINE MACHINERY.

No. 17400.

Received at London Office

24 APR 1950

of writing Report 4th April 19 50. When handed in at Local Office 21st April 19 50. Port of Gothenburg.

Survey held at Kalmar Date, First Survey 28th Sept., 1949 Last Survey 30th March 19 50.

Book. Number of Visits 7

Single on the ~~XXXX~~ Screw vessel "LUCIANO CASTRO"

Approximate Tons Gross 600 Net 330

at Kalmar By whom built Kalmar Varv Yard No. 364 When built 1950

nes made at Trollhättan By whom made Nydqvist & Holm A-B. Engine No. 1288 When made 1949

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

e Horse Power 510 Owners Luciano Castro Cia. Ltda. Port belonging to Santos

Horse Power as per Rule 136 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

e for which vessel is intended General

ENGINES, &c. —Type of Engines Heavy oil, trunk type 2 or 4 stroke cycle 2 Single or double acting Single

um pressure in cylinders 45 kg/cm<sup>2</sup> (9.3/16") (16.9/16")

Indicated Pressure 5.4 kg/cm<sup>2</sup> Diameter of cylinders 250 mm. Length of stroke 420 mm. No. of cylinders 8 No. of cranks 8

of bearings, adjacent to the crank, measured from inner edge to inner edge 350 mm. Is there a bearing between each crank Yes

utions per minute 325 Flywheel dia. 900 mm. Weight 260 kgs. Means of ignition Compress. Kind of fuel used Diesel oil

(Solid forged appd. 160 mm. Crank pin dia. 160 mm. Crank webs Mid. length breadth --- Thickness parallel to axis ---

Semi built dia. of journals as fitted 160 mm. Mid. length thickness --- shrunk Thickness around eyehole ---

All built as per Rule --- as fitted ---

eel Shaft, diameter as fitted --- Intermediate Shafts, diameter as fitted --- Thrust Shaft, diameter at collars as fitted ---

Shaft, diameter as fitted --- Screw Shaft, diameter as fitted 145 mm. Is the ~~XXXX~~ shaft fitted with a continuous liner { No ✓

at coupling 140 mm.

e Liners, thickness in way of bushes as per Rule --- Thickness between bushes as fitted --- Is the after end of the liner made watertight in the

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

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-

ive --- 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

tube shaft Yes ✓ If so, state type Cedervall's oil gland ✓ Length of bearing in Stern Bush next to and supporting propeller 780 mm. ✓

ler, dia. 1900 mm. Pitch 1170 mm. No. of blades 3 Material Bronze whether moveable No Total developed surface 1.35 metres sq. ~~XXXX~~

d of reversing Engines compr. air Is a governor or other arrangement fitted to prevent racing of the engine ~~XXXXXXXXXXXX~~ Yes ✓ Means of

tion Forced Thickness of cylinder liners 22 mm. Are the cylinders fitted with safety valves Yes ✓ Are the exhaust pipes and silencers water cooled

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

the engine. Led to a 1 x 320 litres per minute, 1 x 250 litres per minute, 1 x 900 litres per minute.

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

umps worked from the Main Engines, No. 1 (D.A.) Diameter 100 mm. Stroke 70 mm. Can one be overhauled while the other is at work ---

connected to the Main Bilge Line { No. and size 1 ballast á 50 tons per hour, 1 bilge á 19 t/h., 1 main cooling á 19 t/hour.

How driven Electrically driven. Main engine. Main engine.

ooling 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

ments ---

ast Pumps, No. and size 1 x 54 tons/hour ✓ Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 x 80 litres/minute

two independent means arranged for circulating water through the Oil Cooler Yes ✓ Suctions, connected to both main bilge pumps and auxiliary

pumps, No. and size:—In machinery spaces 1 x 2½" ✓ In pump room ---

olds, &c. 2 x 2½" ✓ 1 x 3" ✓ To hand pump 1 x 2½".

ependent Power Pump Direct Suctions to the engine room bilges, No. and size 1 x 4" to ballast pump, 1 x 2½" to main engine bilge pump.

all the bilge suction pipes in hold ~~XXXXXXXXXX~~ well fitted with strum-boxes Yes ✓ Are the bilge suction in the machinery spaces led from easily

ssible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges. Yes ✓

all Sea Connections fitted direct on the skin of the Ship. On welded recessed Are they fitted with valves or cocks Cocks ✓ Are they fixed

ciently high on the ship's side to be seen without lifting the platform plates lift Are the overboard discharges above or below the deep water line Above ✓

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 ---

at pipes pass through the bunkers No coal bunkers ✓ How are they protected ---

at pipes pass through the deep tanks No deep tanks ✓ Have they been tested as per Rule ---

all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times. Yes ✓

be 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

es, or from one compartment to another. Yes ✓ Is the shaft tunnel watertight ER aft Is it fitted with a watertight door --- worked from ---

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

RTING

KAir Compressors, No. 1 ✓ No. of stages 2 diameters 60/150 mm. stroke 160 mm. driven by main engine

iliary Air Compressors, No. 1 ✓ No. of stages 2 diameters 40/95 mm. stroke 125 mm. driven ~~XXX~~ electrically

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

at provision is made for first charging the air receivers By the el. driven aux. compr. Current supplied from aux. eng. with manual

venting Air Pumps, No. 1 (D.A.) Crank type ✓ diameter 610 mm. stroke 420 mm. driven by the main engine.

as ~~XXXX~~ approved 2.7/8" No. 2

iliary Engines crank shafts, diameter as fitted 2.7/8" Position 1 on port, and 1 on starboard side of the engine room floor.

ve the auxiliary engines been constructed under special survey Yes Is a report sent herewith Photostat copies of reports Nos. 13621 and 13736 attached.

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Information



AIR RECEIVERS:—Have they been made under survey... Yes ✓ State No. of report or certificate 6640 - 6641  
Is each receiver, which can be isolated, fitted with a safety valve as per Rule... Fusible plug. Safety valves on the compressors...  
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...  
Starting Air Receivers, No. 2 ✓ Total cubic capacity 2 x 400 litr. Internal diameter 480 mm. thickness 11 mm. Actual...  
Seamless, lap welded or riveted longitudinal joint El. welded Material S.M. Steel Range of tensile strength 41-47 kg/mm<sup>2</sup> Working pressure Actual... 25  
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 22.12.1948 Receivers 22.12.1948 Separate fuel tanks...  
Donkey boilers --- General pumping arrangements 5.5.1949 Pumping arrangements in machinery space 5.5.1949  
Oil fuel burning arrangements --- Date of approval of torsional vibration characteristics 22.12.1948 for 325 r.p.m.  
Has the spare gear required by the Rules been supplied Yes ✓ SPARE GEAR. 145 revolutions per minute  
State the principal additional spare gear supplied ---

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

KALMAR VARV

Manufacturer.

Dates of Survey while building { During progress of work in shops - - - - -  
During erection on board vessel - - - - - 28th September, 1949 - 30th March, 1950.  
Total No. of visits 7  
Dates of examination of principal parts—Cylinders --- Covers --- Pistons --- Rods --- Connecting rods ---  
Crank shaft --- Flywheel shaft --- Thrust shaft 10.3.1950 Intermediate shafts --- Tube shaft ---  
Screw shaft 10.3.1950 Propeller 10.3.1950 Stern tube --- Engine seatings 2.11.1949 Engine holding down bolts 30.1.1  
Completion of fitting sea connections 2.11.1949 Completion of pumping arrangements 15.3.1950 Engines tried under working conditions 16.3.1  
Thrust shaft, material El. steel Identification mark Lloyds No. 855 OS 27.7.49 Flywheel shaft, material --- Identification mark ---  
Thrust shaft, material --- Identification mark --- Screw shaft, material El. steel Identification marks Lloyds OS 1.7  
Tube shaft, material --- Identification mark --- Screw shaft, material --- Identification mark ---  
Identification marks on air receivers Nos. 7224 - 7225  
LLOYD'S TEST 42 KGS.  
WP 25 KGS.  
HA 4.4.49

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 3 á 8.4 litres CO<sub>2</sub> extinguishers.  
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 Yes, complied with.  
Is this machinery duplicate of a previous case Yes If so, state name of vessel M/S "Vernia" and "Fenix", Kalmar V Yard Nos. 362 and 363.

General Remarks (State quality of workmanship, opinions as to class, &c.)  
This machinery has been fitted on board under my inspection and to my satisfaction in accordance with Rules and approved plans and has been tested under full working power and found satisfactory.  
A notice board has been fitted at the control station, stating that the engine is not to be run continuously between 120 and 140 revolutions per minute, and the engine tachometer has been marked accordingly.  
Two auxiliary engines, Nos. 4238 and 4239 manufactured by Russell, Newberg & Co., Ltd., have been satisfactorily fitted on board. Photostat copies of the Manchester Surveyors' reports Nos. 13621 and 13736 are attached.  
Test sheets of the propellers also forwarded.  
The machinery is eligible, in my opinion, to be classed +LMC 3.50 and Tail Shaft fitted with Oil Gland

(Continued)

The amount of Entry Fee ... £ --- : --- :  
Special ... Kr. 330:00 : When applied for 21st April 1950.  
Aux. Eng. Fee... Kr. 50:00 : When received --- 19 ---  
Travelling Expenses (if any) £ 249:49  
Committee's Minute 12 MAY 1950  
Assigned + Lmc 3.50 O.G.

Engineer Surveyor to Lloyd's Register of Shipping

Rpt. 9a.

Port of Gothenburg. Continuation of Report No. 17400 dated the 21st April, 1950, on the

oil engine machinery of the motorship "Luciano Castro", of Santos.

Note:

After completion of the vessel an electrically driven fuel transfer pump was fitted in parallel to the hand pump showed on the plan No.2822B, approved on the 5.5.1949.

Both daily service tanks have therefore been fitted with a common overflow pipe provided with non-return valve and sight glass and led to the suction side of the pump.

The pump motor has also been provided with remote control as required by the Rule.

*Ch. Seating*

Gothenburg Office.

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



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