

REPORT ON OIL ENGINE MACHINERY.

13368
No. 22 FEB 1951

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Date of writing Report 12-2-1951 When handed in at Local Office 19 Port of Copenhagen
 No. in Survey held at Copenhagen / Odense Date, First Survey 16-12-49 Last Survey 12-1-1951
 Reg. Book. Number of Visits 49
 Single on the Twin Triple Quadruple Screw vessel Motor Tanker "Charlotte Maersk" Tons Gross 7901
 Built at Odense By whom built Odense Staalskelevaerft Yard No. 112 When built 1951
 Engines made at Copenhagen By whom made Akt. Burmeister & Wain Engine No. 4511 When made 1951
 Donkey Boilers made at Gallborg By whom made Gallborg Værft a/s Boiler No. 1144 When made 1951
 Brake Horse Power 4600 Owners A/S D/S Sundborg, D/S of 1912 a/s Port belonging to Fredericia
 M.N. Power as per Rule 799800 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which vessel is intended Ocean going

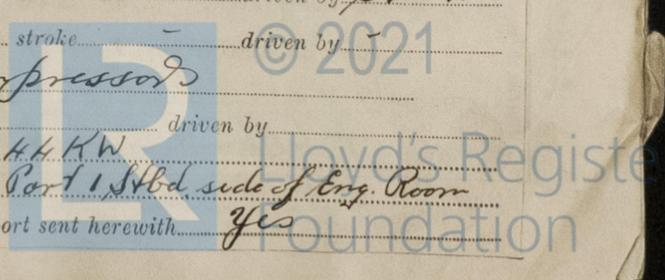
OIL ENGINES, &c.—Type of Engines Heavy Oil Solid Injection 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 50 kg/cm² Diameter of cylinders 298 mm Length of stroke 1600 mm No. of cylinders 5 No. of cranks 5
 Mean Indicated Pressure 6.5 kg/cm² Ahead Firing Order in Cylinders 1-4-3-2-5 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 958 mm
 Flywheel dia. 902 FLYWHEEL Weight Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 40220 32800 Means of ignition Comp. Kind of fuel used Diesel
 Crank Shaft, Solid forged dia. of journals as per Rule 485 mm Crank pin dia. 55 mm Crank webs Mid. length breadth 1020 mm Thickness parallel to axis 280 mm
 Semi built All built as fitted 550 mm WITH 220 mm CEN. HOLE Mid. length thickness 280 mm Thickness around eye hole 290 mm
 Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule 355 mm Thrust Shaft, diameter at collars as fitted 500 mm 160 mm C.Hole
 as fitted Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 400 mm Is the (tube) shaft fitted with a continuous liner Yes
 as fitted 385 mm of couplings as per Rule 14.3 mm Thickness between bushes as fitted 18 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. No
 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 tube shaft No
 Propeller, dia. 5100 mm Pitch Var. No. of blades 4 Material M. Bronze whether moveable No Total developed surface 9.45 sq. feet
 Moment of inertia of propeller (lbs. in² or Kg. cm.²) Kind of damper, if fitted No
 Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced
 Thickness of cylinder liners 5.2 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. 2BW (1FW + 1SW ME) (1FW and Ballast pump spare) 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. 1 Diameter 150 mm Stroke 175 mm Can one be overhauled while the other is at work
 Pumps connected to the Main Bilge Line No. and size 1 @ 144 ton/hr 1 @ 30 ton/hr 1 @ 20 ton/hr
 How driven Steam Chain drive to shafting
 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 1 @ 144 ton/hr Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1 - 170 ton/hr
 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 6 @ 3 1/2" In pump room 2 @ 7" For " 2 @ 3"
 In holds, &c. Forward hold 2-3"
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size 1-6 1-4
 Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction pipes 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 efficiently 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 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
 That pipes pass through the bunkers How are they protected
 That 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 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 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 stroke driven by
Auxiliary Air Compressors, No. 2 No. of stages 2 CAP. diameters 2.5 m³/min stroke driven by Steam
Small Auxiliary Air Compressors, No. No. of stages diameters stroke driven by
 What provision is made for first charging the air receivers Steam driven compressors
Scavenging Air Pumps, No. 2 Rotary Blowers diameter stroke driven by
Auxiliary Engines crank shafts, diameter as per Rule App. No. 2.44 kW Position 1 Port 1 Starboard side of Eng. Room
 as fitted Journals 115 mm Pins 105 mm
 Have the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes

End 7/3/51

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AIR RECEIVERS:—Have they been made under survey? Yes State No. of report or certificate 1026
 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. ✓ Cubic capacity of each _____ Internal diameter _____ thickness _____
 Seamless, welded or riveted longitudinal joint _____ Material _____ Range of tensile strength _____ Working pressure _____
Starting Air Receivers, No. 1 Total cubic capacity 18m³ Internal diameter 1806-1834mm thickness 24
 Seamless, welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength SHELL 30.6/32.2 ton/in² Working pressure _____
IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Yes
 Is the donkey boiler intended to be used for domestic purposes only? No
PLANS. Are approved plans forwarded herewith for shafting? Yes Receivers? yes Separate fuel tanks? yes
 Donkey boilers 7-7-49 General pumping arrangements _____ Pumping arrangements in machinery space? yes
 Oil fuel burning arrangements? yes
 Have Torsional Vibration characteristics been approved? yes Date of approval 1-3-50
 SPARE GEAR.
 Has the spare gear required by the Rules been supplied? Yes
 State the principal additional spare gear supplied for 115 ft with hand spindle 752-62 ft

The foregoing is a correct description, _____
 Manufacturer AKTIESELSKABET BURNISTER & WAIN'S MASKIN- OG TILBEHØR

Dates of Survey while building: During progress of work in shops - 16/12/49 to 4/10/50
 During erection on board vessel - 29/9/50 to 12/1/51
 Total No. of visits 49
 Dates of examination of principal parts—Cylinders 12/9 Covers 1/10 Pistons 1/9 Rods 1/9 Connecting rods 4/9
 Crank shaft 26/6 Flywheel shaft _____ Thrust shaft 1/8 Intermediate shafts 21/8 Tube shaft _____
 Screw shaft 15/6 Propeller 8/3 Stern tube 9/6 Engine seatings 29/9 Engine holding down bolts 17/11
 Completion of fitting sea connections 29/9 Completion of pumping arrangements 12/1 Engines tried under working conditions 27/9, 30/9, 12/1/51
 Crank shaft, material best S.M. Steel Identification mark LK 11-8-50 Flywheel shaft, material _____ Identification mark _____
 Thrust shaft, material S.M. Steel Identification mark LK 11-8-50 Intermediate shafts, material S.M. Steel Identification mark LLOYD'S 7983-7984
 Tube shaft, material _____ Identification mark _____ Screw shaft, material S.M. Steel Identification mark LLOYD'S 5031 WORKING
 Identification marks on air receivers N° 1026 LLOYD'S TEST 41 ATM. W.P. 25 ATM. L.J. 21-8-50

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? Yes
 Description of fire extinguishing apparatus fitted Eng. Rm. 4 2 Gall. Foamite & Steam from Eldehammer system
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo? Yes 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? No If so, state name of vessel _____

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery has been constructed and installed on board under special survey in accordance with the Rules, approved plans and the Secretary's letter dated 9/12/49, 13/1/50, 1/3/50, 29/1/51. The materials used have been tested as required by the Rules and the workmanship is good. The machinery has been satisfactorily tested under full working conditions and in our opinion the vessel is eligible to be classed with Records of L.M.C. 1, 51 Oil Engine (3) D.B. 180 lbs./sq. inch and T.S. C.L.
A notice board has been fitted at the control station stating that the engine is not to be operated continuously between 52-62 P.M.

The amount of Entry Fee ... 4692
 AIR Rec. ... 200
 Special ... PUMPS ... 350
 INST. Donkey Boiler Fee... 323
 Travelling Expenses (if any) 137
 When applied for 17/2 1951 L. L. Vassell
 When received 19 L. L. Vassell
 Engineer Surveyor to Lloyd's Register of Shipping.
 Committee's Minute TUES. 13 MAR 1951
 Assigned + LMC 1.51 Oil Eng. C.L. 200 180 lb (with endorsement)

Rpt. 9a.

Port of Copenhagen

Continuation of Report No. 13368 dated 12-2-51

on the

Motor Tanker "Charlotte Maersk"

List of auxiliaries in Engine and boiler rooms

No	Description	Size	Driven by	Capacity
1	S.W. cooling pump		Chain Dr.	170 t/hr
1	F.W. cooling pump		Main Mot.	170 t/hr
1	Sub. oil cooling pump		"	170 t/hr
1	Bilge pump		"	20 t/hr
1	Sanitary pump		"	20 t/hr
1	Span sub. oil pump	9" x 12" x 10"	Steam	144 t/hr
1	Span F.W. cooling pump	9" x 12" x 10"	"	144 t/hr
1	Ballast & Span S.W. cooling pump	9" x 12" x 10"	"	144 t/hr
1	Butterworth pump	14" x 9" x 12"	"	
1	Heater for Butterworth system	16 m ²		
1	Bilge pump	6" x 6" x 6"	"	30 t/hr
1	Sanitary pump	6" x 6" x 6"	"	30 t/hr
1	Diesel oil transfer pump	6" x 6" x 6"	"	30 t/hr
1	Boiler oil transfer pump	4 1/2" x 4" x 4"	"	9 t/hr
2	Boiler feed pumps	1 1/2" x 5 1/2" x 1 1/2"		9 t/hr
1	Boiler circulating pump		Electric	200 lit/min
1	Fresh water pump	3 1/2" x 2 3/8" x 3 1/2"	Steam	3 t/hr
2	Starting air compressors	C.S. H 7	"	2.5 m ³ /min
1	Fan engine for oil burning	H 2"	"	12000 m ³ /hr.
1	Naught oil burning plant			
1	Condenser			1000 sq. ft
1	Evaporator			12 t/24 hr.
1	Starting air receiver			18 m ³
1	Sub. oil cooler			180 m ²
1	F.W. cooler			180 m ²
1	Sub. oil pump		Electric	3300 lit/hr.
1	Diesel oil pump			5000 lit/hr.
1	Span oil pump			3300 lit/hr.
2	Boiler oil settling tanks			2 x 5000 lit
2	Diesel oil			2 x 12500 lit
2	Oil fired boilers			2 - 150 m ²
1	Exhaust gas boiler			1 - 125 m ²

Generators
 2 off. 44 KW Diesel engine driven
 1 off. 20 KW Steam driven for Harbour use
 1 off. 10 KW Oil engine driven for Emergency use situated on steering engine platform

