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4b.

REPORT ON OIL ENGINE MACHINERY

No. 2306

1 MAR 1926

Writing Report 11 June 1923 When handed in at Local Office

Received at London Office

10 Port of Stockholm

Survey held at Stockholm

Date, First Survey 17 Jan

Last Survey 5 June 1923

Number of Visits 9

on the Single } Screw vessels
Twin }
Triple }

C.19

Tons {
Gross
Net

Built at Stockholm By whom built J. & G. Bolinderis Co. Ltd. Yard No. _____ When built _____
 Engines made at Stockholm By whom made J. & G. Bolinderis Co. Ltd. Engine No. 15192/45 When made 1923
 Boilers made at _____ By whom made _____ Boiler No. _____ When made _____
 Horse Power 160 Owners Atilleros de Tarragona S.A. Port belonging to Tarragona
 Horse Power as per Rule 46 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

ENGINES, &c.—Type of Engines Bolinder Oil Engine 2 stroke cycle Single or double acting
 Working pressure in cylinders 17 kg/cm² No. of cylinders 4 No. of cranks 4 Diameter of cylinders 300 mm
 Stroke 310 mm Revolutions per minute 350 Means of ignition hot bulb Kind of fuel used brude oil
 Clearance between each crank Yes Span of bearings (Page 87, Section 3, par. 1 of Rules) 600 mm

Clearance between centres of main bearings 600 mm Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule 121 mm.
as fitted 128 mm.
 Diameter of crank pins 128 mm. Breadth of crank webs as per Rule 161 mm. Thickness of ditto as per Rule 68 mm.
heel is fitted at fore end of the crank shaft as fitted 170 mm. as fitted 71.5 mm.
 Diameter of flywheel shaft as per Rule _____ Diameter of tunnel shaft as per Rule _____ Diameter of thrust shaft as per Rule 116 mm.
as fitted _____ as fitted _____ as fitted 118 mm.

Is the screw shaft fitted with a continuous liner the whole length of the stern tube _____
 If the liner is in more than one length are the joints burned _____
 Does the liner made watertight in the propeller boss _____
 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 _____
 Are the liners fitted, is the shaft lapped or protected between the liners _____ If without liners, is the shaft arranged to run in oil _____

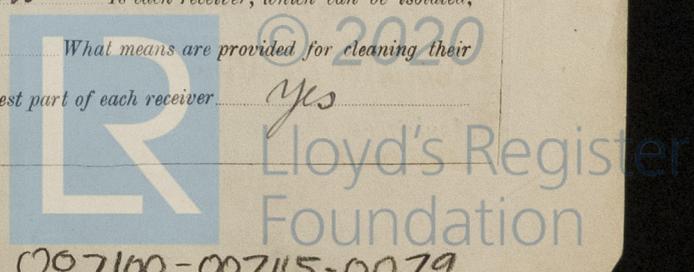
Outer gland fitted to stern tube _____ Length of stern bush _____ Diameter of propeller _____
 Propeller _____ No. of blades _____ state whether moveable _____ Total surface _____ square feet
 Reversing Timing Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Thickness of cylinder liners none fitted
 Cylinders fitted with safety valves no Means of lubrication pumps Are the exhaust pipes and silencers water cooled or lagged with _____
 lagging material _____ If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine _____

No. of cooling water pumps 2 Is the sea suction provided with an efficient strainer which can be cleared _____
 No. of bilge pumps fitted to the main engines 1 Diameter of ditto 100 mm. Stroke 50 mm.
 Overhauled while the other is at work _____ No. of auxiliary pumps connected to the main bilge lines _____ How driven _____
 No. and sizes of suction connections connected to both main bilge pumps and auxiliary bilge pumps:—In engine room _____
 No. of ballast pumps _____ How driven _____ Sizes of pumps _____

Is the main pump fitted with a direct suction from the engine room bilges _____ State size _____ Is a separate auxiliary pump suction fitted in _____
 Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine Room always accessible _____
 Are the suction pipes on Engine Room bulkheads always accessible _____ Are all connections with the sea direct on the skin of the ship _____
 Are the valves or cocks _____ Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates _____
 Are the discharge pipes 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 valves, cocks, valves and pumps in connection with the machinery accessible at all times _____ Are the bilge suction pipes, cocks and valves arranged so as to prevent any _____
 communication between the sea and the bilges _____ Is the screw shaft tunnel watertight _____ Is it fitted with a watertight door _____

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork _____
 No. of air compressors none fitted No. of stages _____ Diameters _____ Stroke _____ Driven by _____
 Auxiliary air compressors _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____
 All auxiliary air compressors _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____
 Ventilating air pumps _____ Diameter _____ Stroke _____ Driven by _____
 Are the auxiliary Diesel Engine crank shafts _____ as per Rule _____ Are the air compressors and their coolers made so as to be easy of access _____
as fitted _____

RECEIVERS:—No. of high pressure air receivers _____ Internal diameter _____ Cubic capacity of each _____
 Seamless, lap welded or riveted longitudinal joint _____ Range of tensile strength _____
 Working pressure by Rules _____ No. of starting air receivers 1 Internal diameter 434 mm.
 Capacity 280 litres Material S.M. Steel Seamless, lap welded or riveted longitudinal joint lap welded
 Tensile strength min. 23 tons/inch thickness 8 mm. Working pressure by rules 257 lbs Is each receiver, which can be isolated, _____
 a safety valve as per Rule _____ Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their _____
 Is there a drain arrangement fitted at the lowest part of each receiver Yes



007100-007115-0079

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	1.6.23	17 kg/sq. cm.	37 kg/sq. cm.	LLOYDS TEST 37 kg. A1. 1.6.23 A	
COVERS	1.6.23	ditto	ditto		
JACKETS	1.6.23	-	3.5 kg/sq. cm.		
PISTON WATER PASSAGES	(Open pistons)				
MAIN COMPRESSORS—1st STAGE	none fitted				
2nd					
3rd					
AIR RECEIVERS—STARTING	1.6.23	15 kg/sq. cm.	30 kg/sq. cm.	No. 2237 LLOYDS TEST 30 KG W.P. 15 KG. A1. 1.6.23 A	
INJECTION					
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER	1.6.23	-	3.5 kg/sq. cm.	HYDR. TEST 3.5 kg A1. 1.6.23 A	
WATER JACKET	1.6.23	-	ditto		
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting *Secretary's letter E 7.11.22* Receivers starting *E. 8.3.16* Separate Tanks -
 SPARE GEAR *to be supplied and inspected on delivery*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building: During progress of work in shops - 17.31.1, 16.21.26.2, 9.3, 30.5, 1.5.23
 During erection on board vessel -
 Total No. of visits 9 in shops

Dates of Examination of principal parts—Cylinders 30.1.23, Covers 30.1.23, Pistons 30.1.23, Rods ✓, Connecting rods 31.16.26.9.1.5.23
 Crank shaft 31.16.9.1.23, Thrust shaft 17.16.21.1.23, Tunnel shafts, Screw shaft, Propeller, Stern tube, Engine seatings

Engines holding down bolts, Completion of pumping arrangements, Engines tried under working conditions in shops 30.5.23

Completion of fitting sea connections, Stern tube, Screw shaft and propeller

Material of crank shaft *Sm. Steel* Identification Mark on Do. *LLOYDS No. 3238 A1. 1.6.23 A* Material of thrust shaft *Sm. Steel* Identification Mark on Do. *LLOYDS No. 3233 A1. 1.6.23 A*

Material of tunnel shafts, Identification Marks on Do., Material of screw shafts, Identification Marks on Do.

Is the flash point of the oil to be used over 150° F.

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *see Skm. report no 2247*

General Remarks (State quality of workmanship, opinions as to class, &c.)

I am of opinion that this motor is of superior material and workmanship, and as it has been designed and constructed under my special survey, I have respectfully to submit that it will be eligible to be classed LMC as soon as it has been fitted in a classed vessel to the satisfaction of the Society's Surveyors

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

The amount of Entry Fee ... £	:	:	When applied for,
Special £	:	:	19.
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	19.

(signed) *A. Isakson*
 Engineer Surveyor to Lloyd's Register of Shipping.
 Assisted by *M. K. J. Anderson*

Committee's Minute **TUES. 2 MAR 1926**

Assigned *See Rec. F. Expt No 2626*

