

REPORT ON OIL ENGINE MACHINERY.

No. 7252.

Received at London Office 25 MAY 1926

Date of writing Report 19th May 1926 When handed in at Local Office

Port of

Copenhagen

No. in Survey held at
Reg. Book.

Copenhagen

Date, First Survey 24th October 1925. Last Survey 12th May 1926

Number of Visits 41.

Single
on the ~~Twin~~ Motor
Triple Screw Vessel

"ANDRE MOYRAND"

Tons Gross ✓
Net ✓

Built at Dunkirk

By whom built Societe des Ateliers et

Yard No. 38. When built ✓

Engines made at Copenhagen

By whom made Chantiers de France

Engine No. 1222. When made 1925-26

Donkey Boilers made at ✓

By whom made Akt. Burmeister & Wain's

Boiler No. When made ✓

Brake Horse Power 1000.

Owners ✓

Port belonging to ✓

Nom. Horse Power as per Rule 222.

Is Refrigerating Machinery fitted for cargo purposes ✓

Is Electric Light fitted ✓

L ENGINES, &c.—Type of Engines Vertical Diesel Oil Engine. (Crosshead type) 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 35 kg/cm² No. of cylinders 6 Diameter of cylinders 500 mm = 19 1/16" No. of cranks 6 Length of stroke 1250 mm = 49 1/32" 49 3/16" for R.B.H.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 698 mm Is there a bearing between each crank Yes

Revolutions per minute 120 Flywheel dia. 2280 mm Weight 7200 kg. Means of ignition Air compression Kind of fuel used Crude oil - Flash point above 150°F.

Crank Shaft, dia. of journals as per Rule 334.97 mm as fitted 336 mm Crank pin dia. 336 mm Crank Webs Mid. length breadth 630 mm Thickness parallel to axis 210 mm

Flywheel Shafts, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule 334.97 mm as fitted 336 mm

Tube Shafts, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube screw shaft fitted with a continuous liner ✓

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

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 ✓ Length of Bearing in Stern Bush next to and supporting propeller ✓

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines Direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

Lubrication Thickness of cylinder liners 36 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. One off. 50 Tons capacity Is the sea suction provided with an efficient strainer which can be cleared within the vessel ✓

Bilge Pumps fitted to the Main Engines, No. One off. Diameter of trunk = 150 mm Stroke 80 mm Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line No. and Size How driven

Ballast Pumps, No. and size One off. 100 Tons capacity Lubricating Oil Pumps, including Spare Pump, No. and size 2 off. 25 Tons capacity each. ✓

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 Engine and Boiler 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 Space

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. One off No. of stages 3 Diameters 430 mm x 430 mm x 98 mm Stroke 490 mm Driven by the main engine

Auxiliary Air Compressors, No. 3 off No. of stages 2 Diameters 225 mm — 68 mm Stroke 220 mm Driven by the auxiliary engines, B

Small Auxiliary Air Compressors, No. One No. of stages 2 Diameters 2 1/2" — 1 5/16" Stroke 5" Driven by hand.

Scavenging Air Pumps, No. Diameter Stroke Driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule 161.6 mm as fitted 162 mm

AIR RECEIVERS:—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 Yes What means are provided for cleaning their inner surfaces Starting air receiver is fitted with man hole.

Is there a drain arrangement fitted at the lowest part of each receiver Yes I - 250 litres II - 125 " III - 404 mm thickness I - 23 mm

High Pressure Air Receivers, No. I - 1 Working for main engine II - 1 Working for pump III - 1 Working for pump Cubic capacity of each III - 25 " Internal diameter III - 7 1/4" thickness II - 19 mm

Seamless, lap welded or riveted longitudinal joint II - Seamless. Material S.M. Steel Range of tensile strength III - 22.9-30.5 tons Working pressure by Rules 65 ATM. Shell 15 1/16" 1/32"

Starting Air Receivers, No. One off Total cubic capacity 10 M³ = 353 cubic feet Internal diameter 6'-0" thickness 1 3/16" approved

Seamless, lap welded or riveted longitudinal joint Double butt straps riveted. Material S.M. Steel Range of tensile strength 41.8-45.9 Working pressure by Rules 25 ATM.

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					
COVERS and JACKETS	25/2. 9/3. 26.	15 lbs per sq"	30 lbs per sq"	LLOYD'S TEST 30 LBS. 25/2. 9/3. 26.	
PISTON WATER PASSAGES	The pistons are oil cooled.				
MAIN COMPRESSORS—1st STAGE	18/1. 26.	4 ATM.	100 lbs per sq"	LLOYD'S TEST 100 LBS. 18.1.26.	
2nd "	18/1. 26.	16 ATM.	35 ATM.	LLOYD'S TEST 35 ATM. 18.1.26.	
3rd "	30/1. 15/2. 26.	65 ATM.	130 ATM.	LLOYD'S TEST 130 ATM. 30/1. 26. 15/2. 26.	
AIR RECEIVERS—STARTING	17/3. 26.	25 ATM.	39 ATM.	LLOYD'S TEST 39 ATM. 17.3.26.	
INJECTION	22/3. 26.	65 ATM.	130 ATM.	LLOYD'S TEST 130 ATM. 22.3.26.	198, 199, 200, 201, 202, 203.
AIR PIPES for starting purpose	11/5. 26.	25 ATM.	50 ATM.	50 ATM. 11.5.26.	
FUEL PIPES	1/3. 26.	1 ATM.	10 ATM.	LLOYD'S TEST 10 ATM. 1.3.26.	
FUEL PUMPS	1/3. 26.	75 ATM.	150 ATM.	1.3.26.	
SILENCER	The silencer and exhaust pipes are lagged.				
WATER JACKET	17/3. 26.	0	10 lbs per sq"	LLOYD'S TEST 10 LBS. 17.3.26.	
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for Shafting for Crank shafts. Receivers for Starting Air Receiver Separate Tanks
Donkey Boilers General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR As per accompanying list, - to be checked when placed onboard the vessel.

The foregoing is a correct description of the machinery.

Dates of Survey while building	During progress of work in shops - 24, 30 Oct., 14, 23 Nov., 3, 29, 30 Dec. 1925 - 9, 18, 22, 26, 30 Jan. - 9, 15, 18, 20, 25 Feb. - 1, 4, 8, 9, 10, 11, 15, 16, 17, 19, 22, 23, 26, 29, 30 March - 9, 12, 15, 19, 26 April. 4, 6, 11, 12 May 1926.
	During erection on board vessel - 4/1
	Total No. of visits 41
Dates of Examination of principal parts—Cylinders - and - Covers	22/1. 18/2. 25/2. 9/3. 26. Pistons 22/18. 19/3. 26. Rods 30/1. 25/2. 9/1. Connecting rods 26/1. 25/2. 10/3. 26.
Crank shaft	24/10. 14/11. 30/12. 25. 9/1. 18/1. The fly wheel is fitted on forward end of the crank shaft. Thrust shaft 23/11. 30/12. 25. Intermediate shafts 25/2. 19/3. 26. Tube shaft
Screw shaft	✓ Propeller ✓ Stern tube ✓ Engine seatings ✓ Engines holding down bolts ✓
Completion of fitting sea connections	✓ Completion of pumping arrangements ✓ Engines tried under working conditions in shop 26/4. 4/5. 6/5. 26.
Crank shaft, Material S.M.I. Steel and Cast steel	Identification Mark LLOYD'S N° 8054 19.3.26. Flywheel shaft, Material Identification Mark
Thrust shaft, Material S.M.I. Steel	Identification Mark LLOYD'S N° 8055 19.3.26. Intermediate shafts, Material Identification Marks
Tube shaft, Material	Identification Mark Screw shaft, Material Identification Mark

Is the flash point of the oil to be used over 150° F. yes
Is this machinery duplicate of a previous case yes If so, state name of vessel "SAGAI" Copenhagen Report N° 7219.

General Remarks (State quality of workmanship, opinions as to class, &c. In accordance with the Rules for Special Survey we have examined the material and workmanship from the commencement of construction until the test of the main and auxiliary engines with their air compressors etc. under full power working condition on the test bench in the engine shop, and found them to work satisfactorily. The material used in the construction of the engines and the air receivers have been tested as required by the Rules, either by us or as per certificate produced, - except the 3 working air receivers for the auxiliary engines, which have been tested by the Surveyor to Bureau Veritas at Sheffield as per certificates produced, - and have, according to London Letter E. dated the 15th March 1926, been accepted by the Committee. The dimensions are as specified and in accordance with the Rules, the approved plans and the requirements contained in London Letters E. dated the 23rd June, 3rd 29th July 1925. Recommend the machinery to have notation in the Register Book of LMC - with date, and OIL ENGINE, when it has been fitted onboard the vessel under supervision and tested to the satisfaction of the local Surveyor to this Society.

The amount of Entry Fee	£ 59.42	When applied for, 20.5.1926.
" 4/5 - Special	£ 886.90	
Donkey Boiler Fee	£	When received, 15/6/26
Travelling Expenses (if any)	£	
Committee's Minute	FRI. 4 MAR 1927	
Assigned	See Donk. P. 2 up to 2821	