

# REPORT ON ELECTRIC PROPELLING MACHINERY.

Received at London Office

of writing Report 16/3/1949 When handed in at Local Office 10 Port of Haris

in Survey held at St. Nazaire Date, First Survey 27<sup>th</sup> Dec. 1948 Last Survey 15<sup>th</sup> Mar. 1949  
Book. Number of Visits 54

5273 Single  
on Twin  
Triple  
Quadruple Screw vessel "ZANGUEZOUR" Tons Gross 10448  
Net 6301

built at Portland, Oregon By whom built Kaiser Co. Inc. Yard No.  When built 1944

Electrical Machines made at Lynn, Mass. By whom made G.E. Co. Contract No.   
Generator No.   
Motor No.  When made 1944

Shaft Horse Power at Full Power 6000/6600 Total capacity of Generators 4925/5400 kilowatts

nom. Horse Power as per Rule 1485 Owners French Government Port belonging to Haris  
(Manager: Soc. Les Petroles de l'Outremer)

Trade for which Vessel is intended Petroleum Tanker

STEAM ENGINES.—Type of Engine Steam Turbine No. of Engines One Revs. per minute 3600/3715

Is a Governor fitted Yes Is the speed variation as per Rule when load is thrown off Yes

Is an emergency Governor fitted Yes Is it arranged for hand tripping Yes

Does it trip the throttle valve as per Rule Yes If exhaust steam is admitted, is an

automatic shut-off fitted  Is provision made for bleeding steam No and

Is a non-return or positive shut-off valve fitted

Torque Limiting.—If generator capacity exceeds motor rating, state means provided for limiting torque input to screw shaft

Lubricating Oil.—State what means are provided for emergency supply Gravity Tank

Is the emergency reserve sufficient to maintain lubrication as per Rule Yes

Mechanical Balance.—Are the Engines and Generators balanced so as not to cause appreciable vibration Yes

Report.—Has a separate report Rpt. 4a for the Engines been issued Yes

DIESEL ENGINES.—Type of Engines  Rev per minute

Is a Governor fitted  Is the speed variation as per Rule when load is thrown off

Is an Emergency Governor fitted  Does it operate as per Rule

Rating.—Has each Engine been tested and found to be capable of developing 10 per cent. overload for one hour as per Rule

Report.—Has a separate report Rpt. 4b for the Engines been issued

GENERATORS.—Direct or Alternating Current Alternating Current No. of Generators One

If alternating current state number of phases Three frequency 60/62 cycles/sec.

Kilowatts per Generator 4925/5400 Voltage per Generator 2300/2370 Amperes per Generator 1237/1315

Do they comply with the requirements regarding insulation materials Yes

Terminals Yes, coolers Yes, thermometers Yes

Lubrication Yes, position in ship Yes, temperature rise A.I.E.E. Rules

Embedded temperature detectors Yes shaft currents Yes

Ventilation.—State how this is arranged (open or closed system) Closed system with water coolers

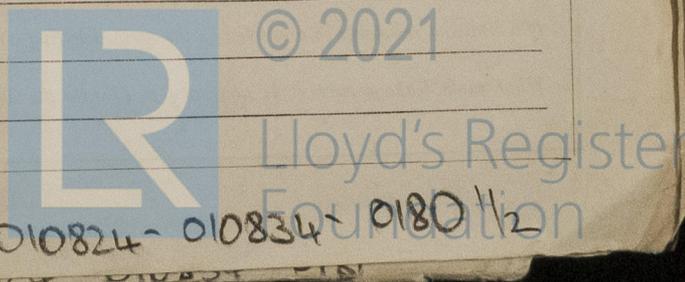
If open system are ventilating arrangements satisfactory

Heating when Idle.—State what provision is made Electric Heaters

Facilities for Inspection and Repair.—Are these as per Rule Yes

Are wear-down gauges supplied No

Bilges.—Are the arrangements to prevent accumulation of bilge-water under the machines satisfactory Yes



MOTORS.—S.H.P. per Motor at full power 6000/6600

Single or double unit Single

Voltage per Motor 2300/2370

No. of Motors One

Amperes per Motor 1160

Do they comply with the requirements regarding insulation materials yes

terminals yes, coolers yes, thermometers yes, ventilation yes

heating when idle yes, shaft currents yes, facilities for inspection and repair yes

mechanical protection yes, lubrication yes, position in ship yes

A.C. Motors.—Are the laminations securely clamped around the whole of the periphery yes

and are they insulated from one another with approved material yes (material not verifiable)

Is provision made for machining the collector rings no

Do the Motors remain in step under all normal conditions of running yes

D.C. Motors.—Are the brushes staggered as per Rule yes

If the system permits overspeeding at light loads are overspeed protection devices fitted yes

EXCITATION.—Is current for excitation taken from the ship's Auxiliary Generators See below

If so state voltage 110 and excitation amperes at full power See 175 motor 390 kilowatts for excitation 75

State arrangements for excitation of Propulsion Generators Excitation of generator and motor derived from 75kw

Amplitude controlled exciter steam turbine driven in tandem with aux. alternator

and Propelling Motors See above

If an alternative means of excitation is provided, state particulars Two exciters as above are provided

Do the Excitation Machines comply with the requirements regarding temperature rise at full power Temp rise on sea trials found in

and after manoeuvring as per Rule Temp rise on manoeuvring trials found satisfactory

D.C. Systems.—Are the arrangements for Motor and Generator excitation as per Rule yes

CONTROL.—Position of Main Control Panel Engine room starboard side aft

Do the Control Panels comply with the requirements regarding position yes

distance from combustible material yes, grouping of controls yes

and instruments yes, insulating materials (state what type is used) Dead front board (mechanical insulator)

spacing and shielding of live parts yes, accessibility of parts yes

position of fuses yes, proportioning of busbars yes

locking of screws and nuts yes, labelling yes, fuses for voltmeters, etc. yes

switches and circuit breakers yes, fusible cutouts American cartridge pattern

proportioning of levers, connecting links, etc. yes, interlocking yes

provision for manual operation of contactors, etc. (state method employed) Switches manually operated through

levers and cams

earthing of instrument cases above 250 volts to earth yes

provision of renewable arcing tips on switches subject to arcing yes

capability of withstanding shock and inclination yes

operation with high and low voltage yes, provision for maintaining

alignment of operating shafts yes, rust proofing of parts yes

Overload and Short Circuit Protection.—State what means are provided Phase balance relay protection

tripping excitation circuit breaker on occurrence of fault

At what current or load is it set to operate 25% out of balance current Has it been tested by tripping

by hand when running at full power and found satisfactory no

Earth Detection.—Is the main circuit provided with means for detecting earths yes

Are aural and visual alarms fitted Visual only Is main power interrupted by the occurrence of an earth fault yes

If a limiting resistance is connected in the earth detecting circuit what is the ohmic value 67 ohms

What earth leakage current is necessary to operate the device Adjustable from 0.5 amp. to 2.5 amperes

Is a switch is used to disconnect the aural signal does it automatically switch on the visual alarm yes

Are the excitation circuits provided with means for earth detection yes

Mechanical Protection.—Are circuits above 250 volts to earth protected as per Rule yes

Bridge or Deck Control.—Is bridge control provided no If so, from how many stations yes

Can they be operated freely without producing currents or loads in excess of the working capacity of the plant yes

and without reference to electrical instruments yes Is an emergency control provided in the engine room yes

and can the transfer to this control be made quickly in the engine room yes

Can the emergency control be rendered mechanically independent of the bridge control yes

Instruments and Gauges.—State what Instruments are provided for each Generator Instruments indicating: stator & rotor temps,

stator & rotor amps. & volts, turbine speed, H.P., K.W. plus phase balance & earth relays

and for each Motor Instruments indicating stator & rotor temps, amps & volts also motor speed

and, for Steam Engines, what Gauges are provided Gauges indicating steam pressure, vacuum, water level

etc fitted on separate panels Is an Insulation Tester provided yes

Discharge Protection.—Are all circuits protected as per Rule yes

D.C. Systems.—If the Generators are connected in series state what means are provided to prevent reversal of rotation yes

Are the Propulsion Generators also used alternatively for other purposes yes for operation of cargo pumps through transformer

If so, is provision made for overload protection, voltage adjustment, etc., as per Rule yes

Reversing Switches.—Are any provided yes If so, are they interlocked as per Rule yes

Resistances.—Are shunt resistances for synchronous motor fields insulated as per Rule yes

Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm Visual indication only

Auxiliary Power.—Are essential services protected from interruption due to overloading of non-essential circuits yes

CONDUCTORS & CABLES.—Are all essential Conductors stranded as per Rule yes

Are the ends of Paper and Varnished Cambric Insulated Cables sealed yes

Are the ends of all Cables having a sectional area of 0.01 sq. in. and above provided with Cable sockets yes or with mechanical clamps

Are all Cables carrying alternating current as per Rule yes Have all Cables been tested at the makers' works as per Rule yes

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines no

If so, have full particulars been submitted and approved yes Have they been tested under

working conditions and do they give the number of starts required by the Rules yes

Are they installed as per Rule yes Are the charging arrangements satisfactory yes

SPARE GEAR.—If engaged on open sea service has a list of spare gear been submitted and approved In excess of Rule requirements

Is a list of the articles supplied attached to this report no

Are they stored as per Rule yes

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

DESCRIPTION—MAIN GENERATORS.	CONDUCTORS.		TOTAL MAXIMUM CURRENT—AMPERES.		MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI-ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole.	Nominal Area per Pole (sq. mils).	In Circuit.	Rule.				
MAIN GENERATORS	2	1315	2190	2300	V.C.	✓	Sewed & Basket Weave	
GENERATOR FIELDS	1	500000	175	454	110	V.C.	✓	Bronges Announced
MAIN MOTORS	2	1500000	1160	2190	2300	V.C.	✓	Sewed & Basket Weave
MOTOR FIELDS	1	500000	390	454	110	V.C.	✓	Bronges Announced.
CONTROL CIRCUITS								
OTHER CIRCUITS:—								

All Conductors are of annealed copper, conforming to International Electrotechnical Commission Publication No. 28.

The Insulated Conductors have withstood the dielectric tests specified in the Rules.

The foregoing is a correct description,

Electrical Engineers.

Date

COMPASSES.—Are Single-Conductor circuits carrying continuous current arranged with lead and return Conductors fitted as close to one another as possible

Have tests been made during adjustment of the Compasses to determine the effect of switching the main circuits on and off

The maximum deviation due to electric currents was found to be degrees on course in the case of the

Standard Compass and degrees on course in the case of the Steering Compass.

Builders' Signature.

Date

Dates of Survey while building
During progress of work in shops
During erection on board vessel
Total No. of visits

See Rpt. 9

Is this machinery duplicate of a previous case Yes If so, state name of vessel 'EL MORRO'

General Remarks (State quality of workmanship, opinions as to class, &c.) The electric propelling machinery of this vessel was installed and constructed under the supervision of the American Bureau of Shipping. The main alternator, motor, exciter control subcable and auxiliary equipment have been opened up, examined and found or placed in good condition, and satisfactory sea trials witnessed on completion. Whilst not fully in accordance with the Society's Rules the construction and workmanship were found to be good and the electric propelling machinery could in my opinion be considered eligible for a classed vessel.

Notes sub 29/4/49

The amount of Entry Fee £ See Rpt. 8
Travelling Expenses (if any) £
When applied for, 19
When received, 19

Signature of Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI 6 MAY 1949
Assigned See minute on Rpt. 5

