

ing Pressure 50

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No. 47899

REPORT ON ELECTRIC PROPELLING MACHINERY

27 OCT 1947

Received at London Office

Writing Report Aug. 5th 1947 When handed in at Local Office Aug. 5th 1947 Port of NEW YORK

Survey held at Hoboken, N.J. Date, First Survey May 22nd 1947 Last Survey July 23rd 1947

Number of Visits 15

on Single / Triple / Quadruple Screw vessel "GRAVENCHON" ex "SEDAN"

Tons { Gross 10296
Net 6154

at Chester, Pa. By whom built San S. B. & D.D. Co. Yard No. - When built 1945

Machinery made at Schenectady, N.Y. By whom made General Electric Contract No. - Generator No. 584077 When made - Motor No. 5600800 4925

Horse Power at Full Power 6000 Total capacity of Generators 5400 kilowatts

Horse Power as per Rule 1324 Owners Gouvernement de la Republique Franciase Port belonging to Le Havre

Maneuvering for which Vessel is intended Petroleum in bulk

1 Curtis impulse 10 stage turbine
M ENGINES.—Type of Engine / No. of Engines One Revs. per minute 3600
3715

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

Gearing 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

atic shut-off fitted - Is provision made for bleeding steam - and

non-return or positive shut-off valve fitted -

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 1 Vertical rotary 60 G.P.M. electrically driven pump.

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

M ENGINES.—Type of Engines - Revs. per minute -

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

Emergency Governor fitted - Does it operate as per Rule -

ng.—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

Alternating current state number of phases Three frequency 60 cycles / second

Watts per Generator 4925 Voltage per Generator 2300 Amperes per Generator 1237
5400 2370 1315

Do they comply with the requirements regarding insulation materials A.I.E.E. Standards

Standards A.I.E.E. Standards, coolers Yes, thermometers Inlet Air
On first grating level in fore & aft direction) Armature 60 C (imbedded
detector)
position in ship /, temperature rise Field 85 C Resistance

ded temperature detectors Yes shaft currents Yes
Closed system circulated by Fans mounted on each end of rotor
ation.—State how this is arranged (open or closed system) with surface air cooler.

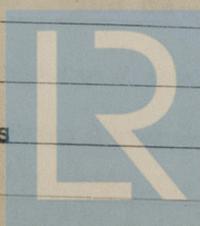
in system are ventilating arrangements satisfactory -

ing when Idle.—State what provision is made One heater at each end of generator

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

near-down gauges supplied No

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



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MOTORS.—S.H.P. per Motor at full power 6000 No. of Motors One

Single or double unit Single Voltage per Motor 2300 volts A.C. Amperes per Motor 1160

Do they comply with the requirements regarding insulation materials A.I.E.E. Standards

terminals A.I.E.E. Standards, 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 In engine room

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 A.I.E.E. Standards

Is provision made for machining the collector rings Yes

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

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

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

EXCITATION.—Is current for excitation taken from the ship's Auxiliary Generators Yes two 75 Kws shunt wound generators

If so state voltage 110 and excitation amperes at full power 557 Amps kilowatts for excitation 150 Kws

State arrangements for excitation of Propulsion Generators Normally controlled by a voltage regulator also by a manually operated rheostat in event of the regulator becoming inoperative. No overload or short circuit protection provided.

and Propelling Motors From same source as generator

If an alternative means of excitation is provided, state particulars Two 75 Kws exciter generators with transfer switch. Only one exciter used at one time.

Do the Excitation Machines comply with the requirements regarding temperature rise at full power A.I.E.E. Standards (commutator 55°C, insulated windings 40°C)

and after manœuvring as per Rule -

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

CONTROL.—Position of Main Control Panel In engine room on first grating level.

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) Ebony asbestos and A.I.E.E. Approved materials

spacing and shielding of live parts A.I.E.E. Standards, accessibility of parts Yes

position of fuses Yes, proportioning of busbars A.I.E.E. Standards

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

switches and circuit breakers A.I.E.E. Standards, fusible cutouts A.I.E.E. Standards

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

provision for manual operation of contactors, etc. (state method employed) No provision for manual operation on magnetically operated contactors.

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 None

At what current or load is it set to operate - Has it been tested by tripping -

by hand when running at full power and found satisfactory -

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

Are aural and visual alarms fitted No aural device Is main power interrupted by the occurrence of an earth fault Removes excitation

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

What earth leakage current is necessary to operate the device .5 amperes

Rept 4°

If a switch is used to disconnect the aural signal does it automatically switch on the visual alarm -

Are the excitation circuits provided with means for earth detection No

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 -

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

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

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

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

Instruments and Gauges.—State what Instruments are provided for each Generator Field temp, stator temp, excitation voltmeter, A.C. voltmeter, field ammeter, A.C. ammeter, Turbine R.P.M. indicator, phase balance relay, ground protection relay.

and for each Motor Stator temp, excitation voltmeter, H.P. meter, field ammeter, A.C. ammeter, shaft R.P.M. Ind.

and, for Steam Engines, what Gauges are provided Main steam gauge, main turbine steam chest, main steam temp. to turbine, aux. steam, main condenser vacuum, lub. oil to Brg., aux. exh.

Lub. service disch, main feed disch 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 -

Are the Propulsion Generators also used alternatively for other purposes Yes Cargo and stripping pumps

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 A.I.E.E. Standards

Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm No

Auxiliary Power.—Are essential services protected from interruption due to overloading of non-essential circuits No preference Tripping

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 0.04 sq. in. and above provided with Cable sockets Yes

Are all Cables carrying alternating current as per Rule A.I.E.E. Standards Have all Cables been tested at the makers' works as per Rule A.I.E.E. Standards

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines -

If so, have full particulars been submitted and approved - Have they been tested under working conditions and do they give the number of starts required by the Rules -

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

SPARE GEAR.—If engaged on open sea service has a list of spare gear been submitted and approved Outstanding spare gear to be delivered to ship.

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.						
MAIN GENERATORS	2	2.3562	✓ 1315	2272	2300	V.C.	10/64"	Bronze tape
GENERATOR FIELDS Rotating	1	.3922	✓ 167	529	110	V.C.	9/64"	Bronze tape
MAIN MOTORS	2	2.3562	✓ 1160	2272	2300	V.C.	10/64"	Bronze tape
MOTOR FIELDS	1	.3922	✓ 390	529	110	V.C.	9/64"	Bronze tape
CONTROL CIRCUITS From Prop. Panel.	1	.0051	-	30	-	V.C.	4/64"	L.A. & Basket Weave
OTHER CIRCUITS:— See Rpt.No.13.								Armoured

4510

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

Yes

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

The maximum deviation due to electric currents was found to be Nil degrees on All course in the case of the Standard Compass and Nil degrees on All 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 - 22nd May, to 23rd July, 1947. Total No. of visits 15

Is this machinery duplicate of a previous case If so, state name of vessel

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

Classing

The electrical installation to the Requirements of the American Bureau of Shipping has been in operation since 1945.

The plans available have been examined and found to be in accordance with A.I.E.E. Standards and generally in accordance with the Rules except as noted on Report No.13.

The dimensions in this report have been taken from the plans. These dimensions have been checked as far as possible on the ship and found correct.

The materials and workmanship are good and the installation has been examined under working conditions and found to be satisfactory.

In our opinion, the electrical installation is such as could be accepted by the Committee for classification.

The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee See Rpt. No.13. Travelling Expenses (if any) £ : : When applied for, 19. When received, 19.

NEW YORK OCT 1 1947

Committee's Minute

Assigned See attached Nit. 9.

W. G. Donald for D. W. Bates & Self Surveyor to Lloyd's Register of Shipping



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Rpt. Date of u No. in Reg. Bk 3678 Built at Engines Boilers Nominal WATER Date of A of Boile No. of C Is forced No. and t each boile are adjust the donke Width an Thickness or flanged for Class Diameter long. joint Percentage Thickness in each bo welded on for Class Diameter Percentage Percentage Thickness Headers Tubes: Joint to S strength firm Pitch of ri Crown or SUPER Thickness or flanged for Class I Diameter o long. joint drum shell Radius or h Tested by H can be shut of valves Spare G Is this boiler GENERAL been bu of Shi is good Survey Travellin