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No. 4336

REPORT ON ELECTRIC PROPELLING MACHINERY.

Received at London Office 8-MAY-1949

Writing Report 2 March 1949 When handed in at Local Office 3 March 1949 Port of NAPLES
Survey held at Palermo Date, First Survey 10th.1. 1949 Last Survey 20th.2 1949
Number of Visits 6
24 ~~Single~~ ~~Double~~ ~~Triple~~ Screw vessel S/S " CLEVELAND " (ex FORBES ROADS) Tons { Gross 10667
Net 6314
at Portland Or. By whom built Kaiser Corp. Inc. Yard No. 57 When built 1944
Machines made at Schenectady By whom made General Electric Co. { Contract No. =====
Generator No. 5840731 } When made 1944
Motor No. 6037830 }
Horse Power at Full Power 6000/6600 Total capacity of Generators 4925/5400 kilowatts
Horse Power as per Rule 1485 Owners Cleveland Petroleum Co. Port belonging to London
Vessel for which Vessel is intended Carrying Petroleum in Bulk

MANU. M ENGINES.—Type of Engine Steam Turbine 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
Emergency Governor fitted yes Is it arranged for hand tripping yes
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 yes and
Non-return or positive shut-off valve fitted Both N.R. and positive shut off
Torque Limiting.—If generator capacity exceeds motor rating, state means provided for limiting torque input to screw shaft Normally generator
capacity does not exceed motor rating

Lubricating Oil.—State what means are provided for emergency supply Gravity tank and automatic warning

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

ADDITIONAL ENGINES.—Type of Engines = Rev 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 =
Test.—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 A.C. No. of Generators One
Alternating current state number of phases 3 phase frequency 60/62 cycles
Watts per Generator 4925/5400 Voltage per Generator 2300/2370 Amperes per Generator 1237/1315
Do they comply with the requirements regarding insulation materials yes
Coolers yes, thermometers yes
Position in ship yes, temperature rise yes
Temperature detectors yes shaft currents yes

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

When system are ventilating arrangements satisfactory =

Heating when Idle.—State what provision is made Electric heaters located within inner shields of Generator

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

Wear-down gauges supplied yes Now supplied

Drainage.—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. 6000/6600 No. of Motors 0
Single or double unit Single Voltage per Motor yes Amperes per Motor 1
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
Is provision made for machining the collector rings yes
Do the Motors remain in step under all normal conditions of running yes
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 see below
If so state voltage 110 and excitation amperes at full power Gen.175-Mot.390 kilowatts for excitation 75
State arrangements for excitation of Propulsion Generators Excitation for both propulsion generator and motor is provided
by a 75 Kw exciter driven by aux. turbo set which consists of 400 Kw alternator 75 Kw exciter
and 55 Kw D.C. Generator
If an alternative means of excitation is provided, state particulars yes two aux. sets, as above

Do the Excitation Machines comply with the requirements regarding temperature rise at full power yes
and after manœuvring as per Rule yes
D.C. Systems.—Are the arrangements for Motor and Generator excitation as per Rule ==

CONTROL.—Position of Main Control Panel In Main engine room at starting platform
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) Synthetic insulating material
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 yes
proportioning of levers, connecting links, etc. yes, interlocking yes
provision for manual operation of contactors, etc. (state method employed) Contactors manually operated by levers interlocked
against incorrect operation

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 main
alignment of operating shafts yes, rust proofing of parts yes

Overload and Short Circuit Protection.—State what means are provided Phase balance relay for protection against phase
faults resulting from short circuit between phases or open circuit in one phase. Fault tripping
excitation breaker
At what current or load is it set to operate 25% out of balance Has it been tested by
by hand when running at full power and found satisfactory Not tested

Earth Detection.—Is the main circuit provided with means for detecting earths yes
Are aural and visual alarms fitted yes visual 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 670 Ohms
What earth leakage current is necessary to operate the device min. 0,5 - max. 2,5 amp.

switch is used to disconnect the aural signal does it automatically switch on the visual alarm ==
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 ==
they be operated freely without producing currents or loads in excess of the working capacity of the plant ==
without reference to electrical instruments == Is an emergency control provided in the engine room ==
can the transfer to this control be made quickly in the engine room ==
the emergency control be rendered mechanically independent of the bridge control ==
Instruments and Gauges.—State what Instruments are provided for each Generator Temp. indicators (Stator and field). Field
voltage and ammeters, Speed indicator, Gen. volt and ammeters, Phase balance relay, earth relay.
for each Motor Temp. Indicators, Field and line volt and ammeters, Rev. indicator, H.P. Meter
for Steam Engines, what Gauges are provided Steam, vacuum, lubrication oil pressure gauges
Is an Insulation Tester provided yes
Discharge Protection.—Are all circuits protected as per Rule yes
C. Systems.—If the Generators are connected in series state what means are provided to prevent reversal of rotation ==
the Propulsion Generators also used alternatively for other purposes Yes, for driving cargo and stripping pump motors through
transformers
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 yes Indicators
Auxiliary Power.—Are essential services protected from interruption due to overloading of non-essential circuits yes
DUCTORS & CABLES.—Are all essential Conductors stranded as per Rule yes
the ends of Paper and Varnished Cambric Insulated Cables sealed yes
the ends of all Cables having a sectional area of 0.04 sq. in. and above provided with Cable sockets yes
all Cables carrying alternating current as per Rule yes Have all Cables been tested at the makers' works as per Rule A.B. tests.
CONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines No
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 ==
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 no
a list of the articles supplied attached to this report No, no list available, but spares on board stated to be adequate
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. Circ. Mils.	In Circuit.	Rule. amp. rating.				
MAIN GENERATORS	3	3000000	1315	1708	2300	V.C.	=	L.C.A.
GENERATOR FIELDS	1	500000	165	444	110	"	=	"
MAIN MOTORS	3	3000000	1160	1708	2300	"	=	"
MOTOR FIELDS	1	500000	1160	444	110	"	=	"
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

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 course in the case of

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

Is this machinery duplicate of a previous case If so, state name of vessel T 2 Tanker

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

The electrical propulsion equipment of the vessel appears to be installed in accordance with American practice, and in conformity with the plans on board.

The detail of the report were obtained from plans and instructions on board and were verified as far as practicable

The machinery was examined and tested under working conditions during sea trials and found satisfactory; the equipment appears to be in good and efficient condition, and whilst not strictly in accordance with the Society's rules, is, in my opinion eligible for Classification

The amount of Entry Fee ... £ : : Fee to be submitted from London When applied for, 19...
Travelling Expenses (if any) £ : : When received, 19...

Committee's Minute

WED 13 APR 1949

Assigned

See minute on p. rpl.

J. H. Sutcliffe

Surveyor to Lloyd's Register of Shipping.



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