

REPORT ON ELECTRIC PROPELLING MACHINERY.

No. 56.166.

10 SEP 1948

Received at London Office

Report of writing Report 9-9-1948 When handed in at Local Office 9-9-1948 Port of CARDIFF

Boilers in Survey held at CARDIFF Date, First Survey 6.5.48 19 Last Survey 26.6.1948

Number of Visits 10

Single on Twin Triple Quadruple } Screw vessel TENACODUS Tons { Gross 10644 Net 6300

Built at MOBILE, ALA. By whom built ALABAMA D.D. & S.B. CO. LTD. Yard No. - When built 1944

Electrical Machines made at SCHENECTADY N.Y. By whom made GENERAL ELECTRIC CO. Contract No. - Generator No. - Motor No. - When made -

Shaft Horse Power at Full Power 6000 Total capacity of Generators 4925 3400 kilowatts

nom. Horse Power as per Rule 1324 Owners ANGLO SAXON PETROLEUM CO. LTD Port belonging to LONDON

Trade for which Vessel is intended PETROLEUM IN BULK

Manufacture of E.M. ENGINES.—Type of Engine 1 CURTIS IMPULSE 10 STAGE TURBINE No. of Engines ONE Revs. per minute 3600 3715

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

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 and

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 1. VERTICAL ROTARY 60 GPM. ELECTRICALLY DRIVEN PUMP.

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

G.L. ENGINES.—Type of Engines Revs. per minute

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

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

of alternating current state number of phases THREE frequency 60 CYCLES PER SECOND

kilowatts per Generator 4925 3400 Voltage per Generator 2300 2370 Amperes per Generator 1237 1315

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

Terminals A.I.E.E. STANDARDS, coolers YES, thermometers INLET AIR

Lubrication YES, position in ship ON FIRST GRATING LEVEL IN FORE & AFT DIRECTION, temperature rise A.I.E.E. STANDARDS

Embedded temperature detectors YES shaft currents A.I.E.E. STANDARDS

Ventilation.—State how this is arranged (open or closed system) CLOSED SYSTEM, CIRCULATION BY ONE FAN.

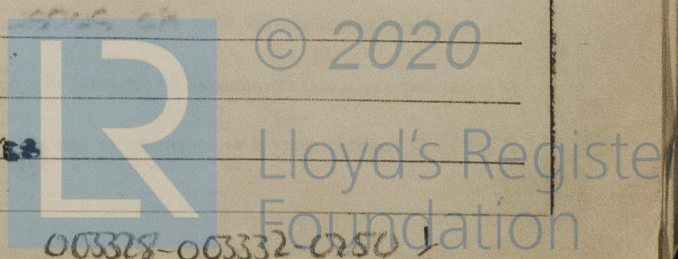
of open system are ventilating arrangements satisfactory

Heating when Idle.—State what provision is made ONE HEATER AT EACH END OF GENERATOR

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 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- 2-75 KW SHUNT WOUND GENERATORS
If so state voltage 110 and excitation amperes at full power 557 AMPS kilowatts for excitation 130 KW
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
and Propelling Motors FROM SAME SOURCE AS GENERATOR
If an alternative means of excitation is provided, state particulars 2-75 KW 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
and after maneuvering 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 CRATING 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 & 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 OR 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 GROUND DETECTING RELAY REMOVES EXCITATION WHEN 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

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 RPM INDICATOR, PHASE BALANCE RELAY, GROUND PROTECTION
RELAY
and for each Motor STATOR TEMP, EXCITATION VOLTMETER, H.P. METER, FIELD AMMETER, A.C. AMMETER, SHAFT RPM INDICATOR
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
GUG OIL TO BRAS, AUX EXH. LUB OIL SERVICE DISCH.
MAIN FEED DISCHARGE. 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 CARDS & 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 NO (NOT AVAILABLE)
Is a list of the articles supplied attached to this report
Are they stored as per Rule

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

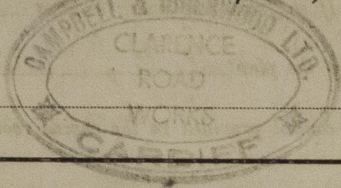
DESCRIPTION—MAIN GENERATORS.	CONDUCTORS.		TOTAL MAXIMUM CURRENT—AMPERES.		MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI-ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole.	Nominal Area per Pole.	In Circuit.	A.I.E.E. Rule.				
MAIN GENERATOR	2	23562	1315	2272	2300	V.C.	10/64	BRONZE TAPE
GENERATOR FIELDS ROTATING	1	3922	167	529	100	"	3/64	"
MAIN MOTORS	2	23562	1160	2272	2300	V.C.	10/64	BRONZE TAPE
MOTOR FIELDS	1	3922	330	529	110	"	3/64	"
CONTROL CIRCUITS FROM BRIDGE PANEL	1	0051	-	30	-	"	4/64	L.A. BASKET WEAVE ARMORED
OTHER CIRCUITS:—SEE REPT NO 13								



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 7 9 48

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 Nil degrees on ALL courses in the case of the

Standard Compass and Nil degrees on ALL courses 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 YES If so, state name of vessel ALABAMA BUILT T2 TANKER.

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

THE ELECTRICAL INSTALLATION OF THIS VESSEL HAS BEEN BUILT UNDER THE SURVEY AND TO THE REQUIREMENTS OF THE AMERICAN BUREAU OF SHIPPING. THE ORIGINAL PLANS OF THE INSTALLATION ARE NOT AVAILABLE, THE DIMENSIONS STATED IN THIS REPORT HAVE BEEN TAKEN FROM PLANS OF A SIMILAR INSTALLATION. THESE DIMENSIONS HAVE BEEN CHECKED AS FAR AS POSSIBLE ON THE SHIP AND FOUND CORRECT.

THE INSTALLATION HAS BEEN SPECIALLY 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 MATERIALS AND WORKMANSHIP ARE GOOD, THE INSTALLATION HAS BEEN MECHER TESTED THROUGHOUT, EXAMINED UNDER WORKING CONDITIONS AND FOUND TO BE SATISFACTORY.

IN MY OPINION THE ELECTRICAL INSTALLATION IS SUCH AS COULD BE ACCEPTED BY THE COMMITTEE FOR CLASSIFICATION, SUBJECT TO THE SPAKE GEAR BEING CHECKED AND FOUND IN ACCORDANCE WITH RULE REQUIREMENTS.

The amount of Entry Fee ... £

Travelling Expenses (if any) £

When applied for,

19

When received,

19

Thomas Senakopov

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

WED 6 OCT 1948

Assigned

See minute on Rpt. 13



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