

REPORT ON ELECTRIC PROPELLING MACHINERY.

Date of writing Report 12th APRIL 1948 When handed in at Local Office 14 APR 1948 Received at London Office 30 APR 1948
 No. in Survey held at NORTH SHIELDS Date, First Survey 20th FEBRUARY 1948 19 48 Last Survey 12th APRIL 19 48
 Reg. Book. 36863 Single on Twin Screw vessel SS. "THELICONUS" Tons Gross 10638
Triple Net 6307
Quadruple
 Built at MOBILE, ALABAMA By whom built ALABAMA D.D. & S.B. Co. Yard No. - When built 1944
 Electrical Machines made at LYNN, MASS. By whom made GENERAL ELECTRIC Co. Generator Nos. 5927869 When made 1944
 Motor Nos. 6037863
 Shaft Horse Power at Full Power 6000 HP @ 90 RPM. - 6000 HP @ 93 RPM. Total Capacity of Generators 5400 Kilowatts
 Machinery Numeral as per Rule - Owners ANGLO SAXON PETROLEUM Co. Port belonging to LONDON
 Trade for which Vessel is intended CARRYING PETROLEUM IN BULK.

PLANS.— Have plans of the Machines, Control Gear, Cables and Circuits been submitted and approved. No

STEAM ENGINES.— Type of Engine STEAM TURBINE No. of Engines ONE R.P.M. 3600 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 YES If exhaust steam is admitted, is an automatic shut-off fitted - Is provision made for bleed steam - and is a non-return or positive shut-off valve fitted - Lubricating Oil.— State means provided for emergency supply STEAM STANDBY LUB. OIL PUMP AND 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

OIL ENGINES.— Type of Engines - R.P.M. - 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 -

GENERATORS.— Direct or Alternating Current A.C. No. of Generators ONE If A.C. state frequency at full load 60/62 Kw. per Generator 5400 KVA Volts per Generator 2300/2370 Amps. per Generator 1237/1315 Have certificates of works tests been supplied No and the results found as per Rule - Ventilation.— State how arranged (open or closed system) CLOSED SYSTEM

Are ventilating arrangements satisfactory YES Heating when Idle.— What provision is made ENCLOSED RESISTANCE

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

Are wear-down gauges supplied YES 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 Volts per Motor 2300 Amps. per Motor 1150 Have certificates of works tests been supplied No and the results found as per Rule - A.C. Motors.— Is provision made for machining the slip rings Φ Do the Motors remain in synchronism under all normal conditions of running YES D.C. Motors.— If the system permits overspeeding at light loads are overspeed protection devices fitted -

EXCITATION.— Is power for excitation taken from the ship's Auxiliary Generators YES If so, state voltage 120 and excitation amperes at full power 682 kilowatts for excitation 45 State excitation arrangements for Propulsion Generators EXCITER WITH AMPIDYNE CONTROL DRIVEN BY AUXILIARY ALTERNATOR TURBINE ALTERNATIVELY MANUAL CONTROL OF EXCITATION. and Propelling Motors SAME AS ALTERNATOR Is an alternative means of excitation provided YES Have certificates of works tests been supplied No and found as per Rule -

CONTROL.— Position of Main Control Panel FORWARD END OF CONTROL PLATFORM Does it comply with the requirements regarding position YES, grouping of controls YES, instruments YES, insulating materials (state type used) DEAD FRONT BOARD, spacing and shielding of live parts YES, accessibility YES, position of fuses YES, locking of screws and nuts YES, labelling YES, fuses for voltmeters, pilot lamps, etc. YES, provision for manual operation of contactors, etc. (state method employed) MECHANICALLY OPERATED BY LEVER AND CAMS

earthing of instrument cases above 250 volts to earth YES, provision of renewable tips on switches subject to arcing YES, capability of withstanding shock and inclination YES, operation with high and low voltage YES, rust proofing of parts YES Overload and Short Circuit Protection.— State means provided OVERLOAD CURRENT COILS WHICH TRIP EXCITATION.

At what load is it set to operate 150% FL. Has it been tripped by hand when running at full power and found satisfactory YES Are fuses of an approved type AMERICAN PATTERN.

Earth Detection.— Is the main circuit provided with means for detecting earths YES Are aural and visual alarms fitted YES Is main power interrupted by an earth fault YES If a limiting resistance is in the earth detecting circuit what is the ohmic value CURRENT TRANSFORMER What earth leakage current is necessary to operate the device Φ If a switch is used to disconnect the aural signal does it automatically give visual indication 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 - can it 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 - and can the transfer to this control be made quickly in the engine room - Can the emergency control be rendered mechanically independent of the deck control - Instruments and Gauges.— State Instruments provided for each Generator WATT HOUR METER, 1-AC VOLTMETER, 1-AC AMPMETER, 1-D.C. FIELD AMPMETER, 1-RPM TURBINE SPEED METER, 1-D.C. VOLTS, MOTOR + GENERATOR FIELDS and for each Motor 1-AC AMPMETER, 1-HP METER, 1-D.C. FIELD AMPMETER, 1-SHAFT REV. INDICATOR. Is an Insulation Tester provided YES

Discharge Protection.— Are all shunt field circuits protected as per Rule YES D.C. Systems.— If the Generators are connected in series state means provided to prevent reversal of direction of rotation of the Prime Movers -

Are the Propulsion Generators also used alternatively for other purposes YES If so, is provision made for overload protection, voltage adjustment, etc. YES

Φ - No TOOLS SUPPLIED.

Φ - 7 TAPPINGS ON TRANSFORMER. 0.5, 0.6, 0.8, 1.0, 1.5, 2.0 and 2.5 AMPS.

Reversing Switches.—If any are provided are they interlocked as per Rule Yes ✓ Resistances.—Are resistances for synchronous motor fields insulated as per Rule Yes ✓ Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm No ✓

CONDUCTORS & CABLES.—Are all essential conductors stranded as per Rule Yes ✓ Are the ends of Paper and Varnished Cambric Insulated Cables sealed Yes ✓ Are all Cables carrying A.C. constructed and installed as per Rule Yes ✓ Have all Cables been tested at the makers' works No ✓

Cables are to American Standards

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines No ✓ If so, have full particulars of rating been submitted and approved No ✓ Have they been tested under working conditions and do they give the required number of starts No ✓ Are they installed as per Rule No ✓ Are the charging arrangements satisfactory No ✓

SPARE GEAR.—If engaged on open sea service has a list of spare gear been submitted and approved No ✓ Is a list of the articles supplied attached to this report No ✓ Are they stored as per Rule Yes ✓

SPARE GEAR LIST APPROVED BY AMERICAN BUREAU

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

DESCRIPTION	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.	When Running.				
MAIN GENERATORS	2	2X1481	1200	—	2X890	12300	Y.C.	0.156
GENERATOR FIELDS	1	0.392	—	—	444	600	Y.C.	0.094
MAIN MOTORS	2	2X1481	1200	—	2X890	12300	Y.C.	0.156
MOTOR FIELDS	1	0.392	—	—	444	600	Y.C.	0.094
CONTROL CIRCUITS								
OTHER CIRCUITS								

*For field circuits the "Hot" and "Cold" value should be given.

The foregoing is a correct description,

Electrical Engineers.

Date

COMPASSES.—Are Single-Conductor circuits carrying direct 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

Builders' Signature.

Date

Is this machinery duplicate of a previous case Yes ✓ If so, state name of vessel SS "TECTUS"

General Remarks (State quality of workmanship, opinions as to class, etc.) THE ELECTRICAL INSTALLATION TO THE STANDARDS OF THE AMERICAN BUREAU OF SHIPPING HAS BEEN IN OPERATION FOR APPROX. 4 YEARS. THE PROPULSION MOTOR AND ALTERNATOR WERE OPENED UP FOR EXAMINATION AND FOUND TO BE IN GOOD ORDER.

THE MATERIALS USED AND THE WORKMANSHIP ARE SATISFACTORY.

IN MY OPINION, THE ELECTRICAL PROPULSION EQUIPMENT OF THIS SHIP IS IN A SATISFACTORY CONDITION AND ELIGIBLE TO RECEIVE THE SOCIETY'S CLASSIFICATION OF L.M.C. 4.48.

Noted

24.3.48

QUERY SEE LONDON LETTER

The amount of Entry Fee ... £

Travelling Expenses (if any) £

When applied for,

19

When received,

19

Surveyor to Lloyd's Register of Shipping.

Date FRI. 28 MAY 1948

Committee's Minute

See F.E. mch. rpt.

SURVEY OF ELECTRICAL EQUIPMENT.

THE NAMEPLATE PARTICULARS OF THE PROPULSION ALTERNATOR, MOTOR AND EXCITERS, AND THE SHIP'S SERVICE ALTERNATORS AND EXCITERS ARE AS FOLLOWS:

PROPULSION ALTERNATOR:—ONE OFF—GENERAL ELECTRIC—TYPE A.T.B.2—SERIAL NO. 5727869—4925/5400 KVA—3600/3715 RPM—FORM H.L.—2300/2370 VOLTS—1237/1315 AMPS.—100% P.F.—3 PHASE—60/62 CYCLES—110 VOLTS EXCITATION—162/167 AMPS EXCITATION.

PROPULSION MOTOR:—ONE OFF—GENERAL ELECTRIC—TYPE T.S.M. 80—SERIAL NO. 6037863—6000 HP—90 RPM—FORM H.L.—2300 VOLTS—ARMATURE AMPS 1150—P.F. 1.0—4625 KVA—3 PHASE—60 CYCLES—EXCITER VOLTS 120—FIELD AMPS 390—CONTINUOUS RATING 60°C RISE—MAX. H.P. 6600 AT 93 RPM.

SHIP'S SERVICE ALTERNATORS:—TWO OFF—GENERAL ELECTRIC—TYPE A.T.B.—SERIAL NOS. 6287281 AND 6287294—500 KVA—1200 RPM—450 VOLTS—3 PHASE—60 CYCLES—642 AMPS—400 KWS.—0.8 P.F.—EXCITER VOLTS 120—EXCITATION AMPS 32—FRAME NO. 976—TEMPERATURES AT 500 KVA. CONTINUOUS RATING 40°C. ARMATURE. 50°C.

PROPULSION ALTERNATOR & MOTOR EXCITERS:—TWO OFF—GENERAL ELECTRIC—TYPE M.P.C.—SERIAL NOS. 2094802 AND 2094803—75 KWS—1200 RPM—FORM A.L.—110 VOLTS—682 AMPS—EXCITATION VOLTS 120—SHUNT WOUND—CONT. RATING—COMMUTATOR 55°C.—INSULATED WINDINGS AND ARMATURE—CORE 40°C—BARE COPPER WINDINGS 55°C.—SHUNT FIELD 40°C.

SHIP'S SERVICE ALTERNATOR EXCITERS:—TWO OFF—GENERAL ELECTRIC—TYPE T.L.B.—SERIAL NOS. 2094841 AND 2094836—55 KWS—1200 RPM—MODEL NO. M.P.L.1.—664—130—FORM E.S.—COMPOUND WOUND—458 AMPS—120 VOLTS—CONT. RATING—40°C.

EMERGENCY DIESEL DRIVEN ALTERNATOR:—ONE OFF—ELECTRIC MACHINERY MANUFACTURING CO.—SERIAL NO. 87723—45 KWS—450 VOLTS—93.8 KVA—120.5 AMPS—0.8 P.F.—420 R.P.M.—3 PHASE—60 CYCLES—CONT. RATING—40°C RISE ARMATURE—50°C RISE FIELD.

R. Stone
12th April 1948

SURVEYOR TO LLOYD'S REGISTER.
NEWCASTLE-ON-TYNE.