

- T.2. TANKER. - G.E. TYPE -

Rpt. 4d.

REPORT ON ELECTRIC PROPELLING MACHINERY.

No. 105384

Date of writing Report 14th JUNE 1948 When handed in at Local Office 15 JUN 1948 Port of NEWCASTLE-ON-TYNE Received at London Office 26 JUN 1948
No. in Survey held at NORTH SHIELDS Date, First Survey 23/4/48 19 Last Survey 11/6/48 19
Reg. Book. 24063 Single on Twin Triple Quadruple Screw vessel S.S. "FORT FREDERICA"
Built at PORTLAND OREGON By whom built KAISER CO. INC. Yard No. - When built 1945
Electrical Machines made at LINN. MASS. By whom made GENERAL ELECTRIC CO. Generator Nos. 5424854 When made 1945
Shaft Horse Power at Full Power MAX SHP 6600 AT 93 RPM. Motor Nos. 6037868
Machinery Numeral as per Rule - Owners BRITISH TANKER CO. Total Capacity of Generators 5400 kilowatts
Trade for which Vessel is intended CARRYING PETROLEUM IN BULK. Port belonging to LONDON

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. 3600/2715 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 YES Lubricating Oil.— State means provided for emergency supply STEAM STANLEY 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 AC. No. of Generators ONE If A.C. state frequency at full load 60/62 Kw. per Generator 5400 KVA. Volts per Generator 2300/2570 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 Are ventilating arrangements satisfactory YES Heating when Idle.— What provision is made RESISTANCE HEATERS 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. 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 75 State excitation arrangements for Propulsion Generators EXCITER WITH AMPLIFYING CONTROL DRIVEN BY AUX. 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) FLAT FRONTED 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 contractors, 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 50% O.L. 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 - 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 - ONE A.C. VOLTMETER - ONE A.C. AMPMETER - ONE D.C. FIELD AMPMETER - ONE R.P.M. TURBINE SPEED METER - ONE D.C. VOLTMETER MOTOR + GENERATOR FIELDS and for each Motor ONE A.C. AMPMETER - ONE H.P. METER - ONE D.C. FIELD AMPMETER - ONE 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

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. Visual Signal Pyrometers.

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. —. All Cables are to American Standards.

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines. —. If so, have full particulars of rating been submitted and approved. —. Have they been tested under working conditions and do they give the required number of starts. —. 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. Is a list of the articles supplied attached to this report. No. Are they stored as per Rule. Yes.

SPARE GEAR APPROVED AMERICAN BUREAU.

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

DESCRIPTION	CONDUCTORS.		TOTAL MAXIMUM CURRENT—AMPERES.		R.P.M.	MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI. ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole.	Nominal Area per Pole.	When Running.	When Maneuvring.					
MAIN GENERATORS	2	2x1.1781	1200	—	2x890	2300	V.C.	0.156	ARMoured + BRAIDED.
GENERATOR FIELDS	1	.392	—	—	444	600	V.C.	0.094	ARMoured + BRAIDED.
MAIN MOTORS	2	2x1.1781	1200	—	2x890	2300	V.C.	0.156	ARMoured + BRAIDED.
MOTOR FIELDS	1	.392	—	—	444	600	V.C.	0.094	ARMoured + BRAIDED.
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. No. If so, state name of vessel.

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

THE ELECTRICAL INSTALLATION TO THE STANDARDS OF THE AMERICAN BUREAU OF SHIPPING HAS BEEN IN OPERATION FOR APPROXIMATELY THREE YEARS. THE PROPULSION ALTERNATOR AND MOTOR WERE OPENED UP FOR INSPECTION AND FOUND TO BE IN GOOD ORDER. THE ALTERNATOR WAS CLEANED IN WAY OF THE SPRINGS AND SHAFT WHERE A DEPOSIT OF CARBON AND OIL HAD COLLECTED. THE MOTOR COILS WERE CLEANED. ON COMPLETION OF CLEANING THE INSULATION RESISTANCE WAS TAKEN AND FOUND TO BE SATISFACTORY.

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. 6.48.

Noted
16.7.48.

Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee £

When applied for,

10

Travelling Expenses (if any) £

When received,

10

Date

FRI. 23 JUL 1948

Committee's Minute

Rpt. 9a.

Port of

NEWCASTLE-ON-TYNE

Continuation of Report No. 105384

dated 11/6/48

on the

SS FORT FREDERICA

SURVEY OF ELECTRICAL INSTALLATION

THE NAMEPLATE PARTICULARS OF THE PROPULSION ALTERNATOR, MOTOR, AND EXCITERS AND THE SHIPS SERVICE ALTERNATORS AND EXCITERS ARE AS FOLLOWS:—

PROPULSION ALTERNATOR:— GENERAL ELECTRIC—TYPE A.T.B.2—SERIAL No. 5424854—4925/5400 KVA—3600/376 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. ONE OFF.

PROPULSION MOTOR:— GENERAL ELECTRIC—TYPE T.S.M. 80—SERIAL No. 6037868—6000 H.P.—90 RPM.—FORM H.L.—2300 VOLTS—ARMATURE AMPS 1150—P.F. 1.0—4625 K.V.A.—3 PHASE—60 CYCLES—EXCITER VOLTS 120—FIELD AMPS 390—CONT. RATING 60°C. RISE—MAX. S.H.P. 6300 AT 93 RPM. ONE OFF.

SHIPS SERVICE ALTERNATORS:— GENERAL ELECTRIC—TYPE A.T.B.—SERIAL Nos. 5933320 AND 5933322—500 KVA—1200 RPM.—450 VOLTS—3 PHASE—60 CYCLES—642 AMPS—400 KWS—0.8 P.F.—120 EXCITATION VOLTS—32 EXCITATION AMPS—FRAME No. 976—TEMPERATURES AT 500 KVA. CONT. 40°C. ARMATURE 50°C. TWO OFF.

PROPULSION ALTERNATOR AND MOTOR EXCITERS:— GENERAL ELECTRIC—TYPE M.P.C.—SERIAL Nos. 2153217 AND 3158236—75 KWS—1200 RPM.—FORM A.L.—110 VOLTS—682 AMPS—EXCITATION VOLTS 120—SHUNT WOUND—CONT. RATED—COMMUTATOR 55°C—INSULATED WINDINGS AND ARMATURE CORE 40°C—BARE COPPER WINDINGS 55°C—SHUNT FIELD 40°C. TWO OFF.

SHIPS SERVICE ALTERNATOR EXCITERS:— GENERAL ELECTRIC—TYPE M.P.L.I.—667—SERIAL Nos. 2158200 AND 2158214—MODEL No. 1750055—130—FORM E.S.—55 KWS—1200 RPM.—COMP. WOUND—458 AMPS—120 VOLTS—CONT. RATING. 40°C. RISE. TWO OFF.

EMERGENCY DIESEL DRIVEN ALTERNATOR:— IDEAL ELECTRIC AND MANUFACTURING Co. OHIO.—SERIAL No. 124544—75 KWS—TYPE S.A.—900 RPM.—450 VOLTS—93.4 KVA—60 CYCLES—3 PHASE—0.8 P.F.—11.8 FIELD AMPS—135 FIELD VOLTS. ONE OFF.

R. Stone

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



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Foundation

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