

## REPORT ON ELECTRIC PROPELLING MACHINERY.

Date of writing Report 22<sup>nd</sup> APRIL 1948 When handed in at Local Office 4 MAY 1948 Port of NEWCASTLE-ON-TYNE  
 Received at London Office 7 MAY 1948  
 No. in Survey held at HEBBURN-ON-TYNE Date, First Survey 27<sup>th</sup> JUNE 1947 19 48 Last Survey 10<sup>th</sup> APRIL 19 48  
 Reg. Book. 36448 Single on Twin Screw vessel M.V. "AURIS" Tons Gross 8220.89  
50/103 Triple Quadruple Net 6701.33  
 Built at HEBBURN-ON-TYNE By whom built R.W. HAWTHORN LESLIE & CO. LTD. Yard No. 686 When built 1941/48  
 Electrical Machines made at RUGBY By whom made BRITISH THOMPSON-HOUSTON & CO. LTD. Generator Nos. 195382 When made 1947  
 Shaft Horse Power at Full Power 3750 S.H.P. AT 120 R.P.M. Motor Nos. R. 195382  
 Machinery Numeral as per Rule 4.4 Owners ANGLO-SAXON PETROLEUM CO. LTD. Total Capacity of Generators 8320 kilowatts  
 Trade for which Vessel is intended CARRYING PETROLEUM IN BULK. Port belonging to LONDON  
 GENERATOR NOS. R. 195382/3. R. 195386/7. R. 195390/1 and R. 195401/2.

PLANS.— Have plans of the Machines, Control Gear, Cables and Circuits been submitted and approved YES.

STEAM ENGINES.— Type of Engine HAWTHORN-SULZER TRUNK PISTON AIRLESS INJECTION No. of Engines 4 R.P.M. 376 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 YES Is provision made for bleed steam YES and is a non-return or positive shut-off valve fitted YES Lubricating Oil.—State means provided for emergency supply YES 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 HAWTHORN-SULZER TRUNK PISTON AIRLESS INJECTION R.P.M. 376 Is a Governor fitted YES Is the speed variation as per Rule when load is thrown off YES Is an Emergency Governor fitted YES Does it operate as per Rule YES

GENERATORS.— Direct or Alternating Current A.C. No. of Generators 4 If A.C. state frequency at full load 50 CYCLES Kw. per Generator 415 x 2 = 830 Volts per Generator 1600 Amps. per Generator 300 Have certificates of works tests been supplied YES and the results found as per Rule YES 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 3750 No. of Motors 1 Single or double unit SINGLE Volts per Motor 1600 Amps. per Motor 1050 Have certificates of works tests been supplied YES and the results found as per Rule YES A.C. Motors.—Is provision made for machining the slip rings YES 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 YES

EXCITATION.— Is power for excitation taken from the ship's Auxiliary Generators YES If so, state voltage 110 and excitation amperes at full power 640 kilowatts for excitation 4 EXCITERS EACH 36 KW. State excitation arrangements for Propulsion Generators ALTERNATORS SUPPLIED FROM MOTORS DRIVEN EXCITERS.

and Propelling Motors SUPPLIED FROM SAME EXCITERS AS ALTERNATORS. Is an alternative means of excitation provided YES Have certificates of works tests been supplied YES and found as per Rule YES

CONTROL.— Position of Main Control Panel FORWARD END OF ENGINE ROOM ON PLATFORM ABOVE ALTERNATORS. Does it comply with the requirements regarding position YES grouping of controls YES instruments YES insulating materials (state type used) MICANITE 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) CONTACTORS ARE MANUALLY OPERATED.

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 UNDER LOW VOLTAGE, OVERLOAD OR SHORT CIRCUIT CONDITIONS, THE RELAY TRIPS THE EXCITATION CIRCUIT BREAKERS.

At what load is it set to operate 2 AMPS. Has it been tripped by hand when running at full power and found satisfactory YES Are fuses of an approved type YES

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 NO If a limiting resistance is in the earth detecting circuit what is the ohmic value EARTH PROTECTION TRANSFORMER What earth leakage current is necessary to operate the device YES 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 SPEED INDICATOR SCALED 0-1200 R.P.M.

1-5" DIAM. DIAL AMMETER AND 2-5" DIAM. DIAL FIELD AMMETERS. and for each Motor 1-KW. METER, 1-A.C. AMMETER, 1-A.C. VOLTMETER, 1-FIELD AMMETER, 2-FIELD VOLTMETERS 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 NO If so, is provision made for overload protection, voltage adjustment, etc. —



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 yes

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 yes

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines No 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 yes Is a list of the articles supplied attached to this report no Are they stored as per Rule yes

### ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

DESCRIPTION	CONDUCTORS.		TOTAL MAXIMUM CURRENT—AMPERES.*		Rule.	MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI-ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole.	Nominal Area per Pole.	In Circuit.						
			When Running.	When Manoeuvring.					
MAIN GENERATORS	1	0.3.	300.	1000.	385	3300	v.c.	0.13	L.C.-B.
GENERATOR FIELDS	1	0.24.	82.	164.	104.	660	v.c.	0.063	L.C.-B.
	1	0.1	143.	164.	191.	660	v.c.	0.072.	L.C.-B.
MAIN MOTORS	2	2x 0.5.	1080.	2380	1080	3300.	v.c.	0.14.	L.C.-B.
MOTOR FIELDS	1	0.5.	318.	392	385	3300.	v.c.	0.13	L.C.-B.
CONTROL CIRCUITS									
OTHER CIRCUITS:—									
MOTORS DRIVING EXCITERS.	1	0.11	120	360	191	3300	v.c.	0.13	L.C.-B.
EXCITERS TO PANEL	2	2x 0.03	646	800	770	660	v.c.	0.102	L.C.-B.
PROPULSION MOTOR COOLING FANS.	1	0.01	17	120	31	660	v.c.	0.06.	L.C.A.-B.

\*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 yes

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

Builders' Signature.

Date 27<sup>th</sup> April 1948.

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 PROPELLING MACHINERY HAS BEEN INSTALLED UNDER SPECIAL SURVEY IN ACCORDANCE WITH APPROVED PLANS, THE SECRETARY'S LETTERS, AND THE REQUIREMENTS OF THE SOCIETY'S RULES.

THE MATERIALS USED ARE OF GOOD QUALITY AND THE WORKMANSHIP IS SATISFACTORY. THE MACHINERY WAS TRIED UNDER CONDITIONS AT SEA WITH SATISFACTORY RESULTS AND IS ELIGIBLE IN MY OPINION FOR THE NOTATION AS RECOMMENDED IN REPORT 4b.)

Noted

P.A. S.A.B.

4x 830KVA = 3320 KVA.

The amount of Entry Fee ... £ 119-16-0  
Travelling Expenses (if any) ... £ 29-19-0  
LONDON ACC. ... £ 32-6-7

When applied for, 4 MAY 1948

When received, 19

Surveyor to Lloyd's Register of Shipping.

Date

FRI. 5 NOV 1948

Committee's Minute

LR-FAF-TB15-152



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