

REPORT ON ELECTRIC PROPELLING MACHINERY.

Date of writing Report 19th February 1948 When handed in at Local Office 24-MAR-1948 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at WALLSEND-ON-TYNE Date, First Survey 12th AUGUST 1947 19 Last Survey 18th FEBRUARY 1948
 Reg. Book. 36544 Single Triple Screw vessel "HYALINA"
 Tons Gross 12267 Net 7307
 Built at WALLSEND By whom built SWAN HUNTER & Wigham Richardson Ltd. Yard No. 1753 When built 1944/5
 Electrical Machines made at RUGBY By whom made BRITISH THOMSON-ROUSTON CO. LTD. Generator Nos. R20526001 Motor Nos. R105384 and 5 When made 1944
 Shaft Horse Power at Full Power 11,000 S.H.P. at 115 R.P.M. and 13,000 S.H.P. at 122 R.P.M. Total Capacity of Generators 10,000 kilowatts
 Machinery Numeral as per Rule Owners ANGLO-SAXON PETROLEUM CO. LTD. 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. ☒ Yes.

STEAM ENGINES.—Type of Engine TURBINE No. of Engines 2 R.P.M. 4080 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 ☒ Yes and is a non-return or positive shut-off valve fitted ☒ Yes Lubricating Oil.—State means provided for emergency supply GRAVITY OIL 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 2 If A.C. state frequency at full load 68 cycles Kw. per Generator 5000 Volts per Generator 3150 Amps. per Generator 915.0 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 SHUNT FIELD OF MOTORS AND ALTERNATORS PROVIDED WITH SWITCHING ARRANGEMENTS SO THAT THEY MAY BE CONNECTED IN SERIES AND CURRENT PASSED AT STANDSTILL 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 11,000/13,000 No. of Motors ONE Single or double unit DOUBLE Volts per Motor 3000/3150 Amps. per Motor 810/915 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 —

EXCITATION.—Is power for excitation taken from the ship's Auxiliary Generators ☒ Yes If so, state voltage 220 and excitation amperes at full power 150 State excitation arrangements for Propulsion Generators EACH ALTERNATOR SHUNT FIELD IS SUPPLIED FROM ITS OWN MOTOR DRIVEN EXCITER THE MOTOR BEING SUPPLIED FROM THE SHIPS 220 VOLT SUPPLY A BOOSTER DRIVEN BY THE SAME MOTOR AS THE GENERATOR and Propelling Motors EXCITER IS IN SERIES WITH THE SHIPS 220 SUPPLY Is an alternative means of excitation provided TWO MOTOR DRIVEN BOOSTER-EXCITER SETS FITTED 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 TURBO FLAT Does it comply with the requirements regarding position ☒ Yes, grouping of controls ☒ Yes, instruments ☒ Yes, insulating materials (state type used) EBONY SANDANYO FOR PANELS, MICA TUBE FOR CONTACTS, ETC., 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) 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. Overload and Short Circuit Protection.—State means provided UNDER LOW VOLTAGE, OVERLOAD, OR SHORT CIRCUIT CONDITIONS THE OVERLOAD RELAY TRIPS THE EXCITATION CIRCUIT BREAKER.

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 2 AMPS What earth leakage current is necessary to operate the device 2 AMPS 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 STABILITY INDICATOR, A.C. VOLTMETER, A.C. AMMETER, WATTMETER, CAMBRIDGE E.T.D. INDICATOR FOR ALL MACHINE AND FOR AIR AND WATER TEMPERATURES and for each Motor AS FOR ALTERNATORS, ONE COMPLETE SET FOR PORT ALT. AND PORT MOTOR AND ANOTHER FOR STAR ALT. AND STAR MOTOR 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 — 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 Cable 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.*			MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI-ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole.	Nominal Area per Pole.	In Circuit.		Rule.				
			When Running.	When Manoeuvring.					
MAIN GENERATORS	2	0.04.	940		2x464	3180	V.C.	0.11	L.C.
GENERATOR FIELDS	1	0.1	165		191	255	V.C.	0.055	L.C.
NEUTRAL.	1	0.1	2		191	1830	V.C.	0.10	L.C.
MAIN MOTORS	2	0.4	940		2x464	3180	V.C.	0.11	L.C.
MOTOR FIELDS	1	0.1	182		191	2000	V.C.	0.10	L.C.
CONTROL CIRCUITS	ALL CABLES INSIDE CUBICLE								
OTHER CIRCUITS:—									
PROPULSION MOTOR FANS.	1	0.0225	60	—	76	220.	V.C.	0.035	L.C. & A.
LUB. OIL PUMPS.	1	0.0145	50	—	57	220	V.C.	0.035	L.C. & A.
AUX TURBO. GENERATORS.	2	4"x 1/4"	2500	—	—	220	BARE COPPER.		
AUX TURBO. GEN. EQUALIZER.	1	4x 1/4"	—	—	—	220.	BARE COPPER.		
EMERGENCY TRIP SWITCH.	1	0.0045	2.	—	15	220	V.C.	0.035	L.C. & A.

The foregoing is a correct description,
THE BRITISH THOMSON-HOUSTON CO. LTD. Electrical Engineers. Date 3rd March 1948.
per H. B. Manning

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

W. B. Buckle. Builders' Signature. Date 12-3-48.

Is this machinery duplicate of a previous case. Yes. If so, state name of vessel. S.S. "HELICINA."

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

THE ELECTRICAL PROPELLING MACHINERY HAS BEEN INSTALLED UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE 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 WORKING CONDITIONS AT SEA UP TO S.H.P. WITH SATISFACTORY RESULTS AND IS ELIGIBLE IN MY OPINION FOR THE NOTATION AS RECOMMENDED IN REPORT Aa.

Noted.
19.3.48.

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

Date FRI. 16 APR 1948

Committee's Minute See F.E. mch. rpt.

Surveyor to Lloyd's Register of Shipping. R. Stone

