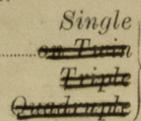


# REPORT ON ELECTRIC PROPELLING MACHINERY.

Received at London Office 11.6 MAR 1948  
NEWCASTLE-ON-TYNE

Date of writing Report 19<sup>th</sup> February 1948 When handed in at Local Office 14-MAR-1948 Port of WALLSEND

No. in Survey held at WALLSEND-ON-TYNE Date, First Survey 12<sup>th</sup> AUGUST 1947 19 Last Survey 18<sup>th</sup> FEBRUARY 1948  
Reg. Book. No. of Visits 13

36544  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-HOUSTON CO. LTD. Generator Nos. R.205260-1 Motor Nos. R.195384 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 ANGLIO-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 bled 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 FIELDS 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 SHIP'S 220 VOLT SUPPLY. A BOOSTER DRIVEN BY THE SAME MOTOR AS THE GENERATOR AND PROPELLING MOTORS. EXCITER IS IN SERIES WITH THE SHIP'S 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.**

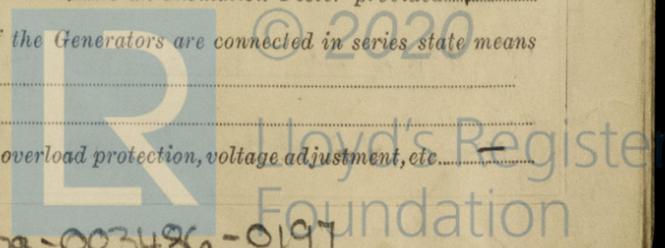
At what load is it set to operate **2 AMPS** Has it been tripped by hand when running at full power and found satisfactory **Yes** Are fuses of an approved type **Yes**

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 **THE REACTANCE OF CIRCUIT LIMITS CURRENT TO 350 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 APT MOTOR AND ANOTHER FOR STAR ALT. AND FWD MOTORS** 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  Resistances.—Are resistances for synchronous motor fields insulated as per Rule  Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm.

CONDUCTORS & CABLES.—Are all essential Conductors stranded as per Rule  Are the ends of Paper and Varnished Cambric Insulated Cable sealed.  Are all Cables carrying A.C. constructed and installed as per Rule  Have all Cables been tested at the makers' works.

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.  Is a list of the articles supplied attached to this report.  Are they stored as per Rule

As For S.S. "OLNA"

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	4x 1/4"	2500	—	—	220	BARE COPPER.		
AUX. TURBO. GEN. EQUALIZER.	1	4x 1/4"	—	—	—	220	BARE COPPER.		
EMERGENCY TRIP SWITCH.	1	0.0065	2.	—	15	220	V.C.	0.035	L.C. + A.

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

The foregoing is a correct description,

THE BRITISH THOMSON-HOUSTON CO. LTD.

Electrical Engineers.

Date 3<sup>rd</sup> March 1948.

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.

W. Buckle

Builders' Signature.

Date 12-3-48

Is this machinery duplicate of a previous case.  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.

[Signature]

19.3.48.

[Signature]

Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ : : When applied for, 10  
 Travelling Expenses (if any) £ : : When received, 19

Date FRI. 16 APR 1948

Committee's Minute

See F.E. nely. rpt.



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The Surveyors are requested not to write on or below the space for Committee's Minute.