

Rpt. 13.

No. 97503

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report..... 19... When handed in at Local Office..... 25/5/39 Port of Newcastle on Tyne

No. in Survey held at Newcastle Date, First Survey 26 Aug/1938 Last Survey 24 May 1939
Reg. Book. Suppt. (Number of Visits..... 25.....)

89989 on the M.V. "SOBIESKY" Tons { Gross. 11030
Net. 6351

Built at Newcastle By whom built Swan, Hunter and Wigham Robinson Ltd. Yard No. 1572 When built 1939

Owners Sagria America Shipping Co. Ltd. Port belonging to Sagria

Electrical Installation fitted by Swan, Hunter & Wigham Robinson Ltd. Contract No. 1572 When fitted 1939

Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No

Have plans been submitted and approved Yes System of Distribution Double wire Voltage of supply for Lighting 220

Heating 220 Power 220 Direct Alternating Current, Lighting Yes Power Yes If Alternating Current state frequency — Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off Yes Are turbine emergency governors fitted with a

trip switch as per Rule — Generators, are they compound wound Yes, are they level compounded under working conditions Yes,

if not compound wound state distance between generators — and from switchboard — Where more than one generator is fitted are they

arranged to run in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

Positive Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per rule Yes Are the lubricating arrangements and the construction

of the generators as per rule Yes Position of Generators Engine room forward end

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material Yes, if situated

near unprotected combustible material state distance from same horizontally — and vertically —, are the generators protected from mechanical

injury and damage from water, steam and oil Yes, are the bedplates and frames earthed Yes and the prime movers and generators in metallic

contact Yes Switchboards, where are main switchboards placed Engine room forward end on

raised platform above gunwales

are they in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam

and oil Yes, if situated near unprotected combustible material state distance from same horizontally — and vertically —, what insulation

material is used for the panels Sheet steel panels - Dead front type switchboard, if of synthetic insulating material is it an Approved Type —, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule — Is the frame effectually earthed Yes

Is the construction as per Rule Yes, including accessibility of parts Yes, absence of fuses on the back of the board Yes, individual fuses

to pilot and earth lamps, voltmeters, etc. Yes locking of screws and nuts Yes, labelling of apparatus and fuses Yes, fuses on the "dead"

side of switches Yes Description of Main Switchgear for each generator and arrangement of equaliser switches Triple pole circuit

breakers with O/L and R/C trips on main generators one pole used as equaliser;

double pole knife switch and double pole fuse on emergency generator

and for each outgoing circuit Double pole circuit breakers with O/L trips on main circuits;

Double pole rotary switches & double pole fuses on main circuits

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard Three

ammeters Three voltmeters — synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Yes Earth Testing, state means provided 2 lamps connected to E. through one of fuses

Certificates for essential motors to follow

Switches, Circuit Breakers and Fuses, are they as per Rule Y₂, are the fuses an approved type Y₂, are all fuses labelled as per Rule Y₂, are the reversed current protection devices connected on the pole opposite to the equaliser connection Y₂, have they been tested under working conditions Y₂. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Y₂. Cables, are they insulated and protected as per the appropriate Tables of the Rules Y₂, if otherwise than as per Rule are they of an approved type Y₂, state maximum fall of pressure between bus bars and any point under maximum load 500 lbs, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Y₂. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Y₂ with insulating compound Y₂ or waterproof insulating tape Y₂. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Y₂, are cables laid under machines or floorplates Y₂, if so, are they adequately protected Y₂. Are cables in machinery spaces, galleys, laundries, etc., lead covered Y₂ or run in conduit Y₂. State how the cables are supported and protected L.C.A. cables clipped on transverse surface in machinery spaces and on deck; L.C.A. cables clipped to underside of "C" deck in main cable run; L.C. cables clipped to surface, wood grinders or behind ledgers in access. Are all lead sheaths, armouring and conduits effectually bonded and earthed Y₂. Refrigerated chambers, are the cables and fittings as per Rule Y₂. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Y₂, where unarmoured cables pass through beams, etc., are the holes effectively bushed Y₂ and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Y₂. Emergency Supply, state position "D" Deck aft. and method of control D.P.C. switch on emergency board between emergency generator & main board. Navigation Lamps, are they separately wired Y₂ controlled by separate double pole switches Y₂ and fuses Y₂. Are the switches and fuses in a position accessible only to the officers on watch Y₂, is an automatic indicator fitted Y₂. Secondary Batteries, are they constructed and fitted as per Rule Y₂, are they adequately ventilated Y₂. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Y₂. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present Y₂, if so, how are they protected Y₂.

and where are the controlling switches fitted Y₂, are all fittings suitably ventilated Y₂, are all fittings and accessories constructed and installed as per Rule Y₂. Searchlight Lamps, No. of one, whether fixed or portable fixed on forecast, are their fittings as per Rule Y₂. Heating and Cooking, is the general construction as per Rule Y₂, are the frames effectually earthed Y₂, are heaters in the accommodation of the convection type Y₂. Motors, are all motors constructed and installed as per Rule Y₂ and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Y₂, if situated near unprotected combustible material state minimum distance from same horizontally Y₂ and vertically Y₂. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Y₂. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Y₂. Control Gear and Resistances, are they constructed and fitted as per Rule Y₂. Lightning Conductors, where required are they fitted as per Rule Y₂. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with Y₂, are all fuses of the cartridge type Y₂, are they of an approved type Y₂. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type Y₂. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Y₂, are they suitably stored in dry situations Y₂. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory Y₂.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	3	450	220	2045	275	Diesel Engines	Fuel Oil Above 150° F	
EMERGENCY ...	1	46	220	209	1100	Diesel Engine	Fuel Oil Above 150° F	
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	3445	3	127/092	2045	3285	36	V.C.	L.C.A.
" " EQUALISER ...		2	91/092		2424	18	V.C.	L.C.A.
EMERGENCY GENERATOR ...	46	1	37/083	209	296	40	V.C.	L.C.A.
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...								
<u>Please see Book of Diagrams attached</u>								

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...								
NAVIGATION LIGHTS ...								
LIGHTING AND HEATING ...								
<u>Please see Book of Diagrams attached</u>								

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
<u>Please see Book of Diagrams attached.</u>								

CLOSURE
NO. 72

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.
All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.
The foregoing is a correct description.

For
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

W. Morrison

Electrical Engineers.

Date *24th May 1939*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *116 feet*

Minimum distance between electric generators or motors and steering compass *110 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.14* Ampères *on the* feet from standard compass *12* feet from steering compass.

A cable carrying *.14* Ampères *12* feet from standard compass *on the* feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power *Yes*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *Yes*

The maximum deviation due to electric currents was found to be *nil* degrees on *any* course in the case of the standard compass, and *nil* degrees on *any* course in the case of the steering compass.

W. Morrison

Builder's Signature.

Date *25th May 1939*

Is this installation a duplicate of a previous case *No* If so, state name of vessel

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.) *The electrical equipment of this vessel has been installed under special survey. The materials used are of good quality and the workmanship is good. On completion the equipment was run under working conditions, the governing, compounding, regulation and paralleling of the main generators and the governing, compounding and regulation of the emergency generator were tested, the operation of the overload and reverse current trips of the main circuit breakers was tested and the preferential tripping proved. The insulation resistance of all circuits was measured. The electrical equipment is in my opinion suitable for a classed vessel.*

W. Morrison
30/5/39

Total Capacity of Generators *1396* Kilowatts.

The amount of Fee ... *£ 79:18* : When applied for, *26 MAY 1939*
Travelling Expenses (if any) *£ 3:2/6* : When received, *£ 6:19/6*

W. Morrison
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *WED 31 MAY 1939*

Assigned *See Nwc. 76, 97503*

(MADE IN ENGLAND.)
2m.10.38.—Transfer.
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

