

Rpt. 13.

No. 101364

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 28 JUN 1943 When handed in at Local Office 28 JUN 1943 Received at London Office.....  
Port of NEWCASTLE - ON - TYNE

No. in Survey held at WALLSEND - ON - TYNE Date, First Survey 2-4-43 Last Survey 11-6-1943  
Reg. Book. (Number of Visits.....8)

on the M.V. "NACELLA" Tons { Gross 8196.39  
Net 4774.25

Built at WALLSEND - ON - TYNE By whom built SWAN HUNTER - WIGHAM RICHARDSON LTD Yard No. 1645 When built 1943

Owners ANGLO SAXON PETROLEUM CO. LTD. Port belonging to LONDON

Electrical Installation fitted by SWAN HUNTER - WIGHAM RICHARDSON LTD. Contract No. 1645 When fitted 1943

Is vessel fitted for carrying Petroleum in bulk YES Is vessel equipped with D.F. YES E.S.D. YES Gy.C. YES Sub.Sig. ....

Have plans been submitted and approved YES System of Distribution TWO WIRE Voltage of supply for Lighting 110

Heating — Power 110 Direct or Alternating Current, Lighting D.C Power D.C. If Alternating Current state periodicity — Prime Movers,

has the governing been tested and found as per Rule when full 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 NO, are shunt field regulators provided YES Is the compound winding connected to the negative or positive pole

NEGATIVE Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing — 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.

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 MAIN SWITCHBOARD IN ENGINE ROOM. SUB MAIN

SWITCHBOARD IN MIDSHIP CORRIDOR.

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 INTEROM., if of synthetic insulating material is it an Approved Type YES, 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 DOUBLE POLE SWITCHES

AND DOUBLE POLE FUSES.

and for each outgoing circuit DOUBLE POLE, DOUBLE THROW SWITCHES AND DOUBLE POLE FUSES.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule YES Instruments on main switchboard 2

ammeters 2 voltmeters — synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection — Earth Testing, state means provided EARTH LAMPS CONNECTED TO 'E' THROUGH SWITCHES AND FUSES.

Switches, Circuit Breakers and Fuses, are they as per Rule YES, are the fuses an approved type YES, are all fuses labelled as

per Rule YES If circuit breakers are provided for the generators, at what overload current did they open when tested —, are the reversed current

protection devices connected on the pole opposite to the equaliser connection —, have they been tested under working conditions, and at what current

did they operate — Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule YES.

Cables, are they insulated and protected as per the appropriate Tables of the Rules YES, if otherwise than as per Rule are they of an approved type —,

state maximum fall of pressure between bus bars and any point under maximum load 54.4 Y, are the ends of all cables having a sectional area of 0.64

square inch and above provided with soldering sockets YES Are paper insulated and varnished cambric insulated cables sealed at the ends YES.



with insulating compound — or waterproof insulating tape YES. 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 YES, are cables laid under machines or floorplates NO, if so, are they adequately protected —. Are cables in machinery spaces, galleys, laundries, etc., lead covered YES or run in conduit —. State how the cables are supported and protected LEAD COVERED AND ARMOURED CABLES CLIPPED TO STEEL PERFORATED TRAY PLATES.  
LEAD COVERED CABLES CLIPPED TO HOOD GROUNDS IN ACCOMMODATION.

Are all lead sheaths, armouring and conduits effectually bonded and earthed YES. Refrigerated chambers, are the cables and fittings as per Rule YES. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands YES, where unarmoured cables pass through beams, etc., are the holes effectively bushed YES and with what material LEAD. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule YES. Emergency Supply, state position — and method of control —.

Navigation Lamps, are they separately wired YES controlled by separate double pole switches YES and fuses YES. Are the switches and fuses in a position accessible only to the officers on watch YES, is an automatic indicator fitted YES. Secondary Batteries, are they constructed and fitted as per Rule —, are they adequately ventilated — what is the battery capacity in ampere hours —.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof YES. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present NO, if so, how are they protected —.

and where are the controlling switches fitted —, are all fittings suitably ventilated —, are all fittings and accessories constructed and installed as per Rule —. Searchlight Lamps, No. of —, whether fixed or portable —, are their fittings as per Rule —.

Heating and Cooking, is the general construction as per Rule —, are the frames effectually earthed —, are heaters in the accommodation of the convection type —. Motors, are all motors constructed and installed as per Rule YES and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil YES, if situated near unprotected combustible material state minimum distance from same horizontally — and vertically —. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment YES.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing —. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule YES. Control Gear and Resistances, are they constructed and fitted as per Rule YES.

Lightning Conductors, where required are they fitted as per Rule —. 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 YES, are all fuses of the cartridge type YES are they of an approved type YES. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships YES. Are the cables lead covered as per Rule YES. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule YES, are they suitably stored in dry situations YES. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory YES.

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	1	30	110	243	646	Steam		
	1	30	110	243	646	Diesel	Diesel Oil Above 150°F	
EMERGENCY								
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	2X30	1	34.083	242	296	24X24	V.C.	L.C.A.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	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.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
MIDSHIP SUB SWITCH BOARD	1	24/102	164	385	600	V.C.	L.C.A.B.
MIDSHIP ACCOMM. SECTION BOARD	1	4/064	68	45	24	V.C.	L.C.
AFT ACCOMM. SECTION BOARD	1	4/064	36	45	160	V.C.	L.C.A.
ENGINE ROOM LIGHTING SECTION BOARD	1	4/052	50	54	30	V.C.	L.C.A.
ENGINE ROOM POWER SECTION BOARD	1	19/064	96	135	200	V.C.	L.C.A.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	12/052	24	104	630	V.C.	L.C.A.
NAVIGATION LIGHTS	1	4/036	25	28	830	V.C.	L.C.
LIGHTING AND HEATING	ALTERNATE SUPPLY FROM MIDSHIP SUB SWITCH BOARD.						
DIS FUSE BD. NO. 1 CHART ROOM LIGHTING	1	4/044	27.5	42	120	V.C.	L.C.
" 2 UPPER BRIDGE "	1	4/036	10.0	28	70	V.C.	L.C.
" 3 BOGE DK. PORT "	1	4/036	18	28	15	V.C.	L.C.
" 4 " " STBD "	1	4/036	12	28	60	V.C.	L.C.
" 5 " " PORT "	1	4/036	11.5	28	24	V.C.	L.C.
" 6 ALLEYWAY STBD "	1	4/036	5.2	28	180	V.C.	L.C.
" 7 " " PORT "	1	4/044	19	42	168	V.C.	L.C.
" 8 " AFT STBD "	1	4/036	14.4	28	24	V.C.	L.C.
" 9 TO 14 ENGINE ROOM "	6	4/036	53.7	28	750	V.C.	L.C. (6 CIRCUITS)
" 15 POOP DK STBD "	1	4/064	30	45	200	V.C.	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	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.			
TURNING MOTOR	1	4.5	1	4/064	60	45	194	V.C.	L.C.A.
LATHE MOTOR	1	3	1	4/036	24	28	60	V.C.	L.C.A.
DRILL MOTOR	1	3	1	4/036	24	28	60	V.C.	L.C.A.
GRINDER MOTOR	1	3	1	4/036	24	28	60	V.C.	L.C.A.
LUB OIL PUMP MOTOR	1	2	1	4/036	16	28	150	V.C.	L.C.A.
FUEL OIL PUMP MOTOR	1	1	1	4/036	8	28	150	V.C.	L.C.A.
ENGINE ROOM VENT FAN	1	4	1	4/064	32	45	300	V.C.	L.C.A.
STBD. VENT FAN	1	4	1	4/052	32	54	120	V.C.	L.C.A.
REFRIGERATOR MOTOR	1	0.5	1	3/036	4	10	63	V.I.R.	L.C.

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.

*[Signature]*

Electrical Engineers.

Date 25<sup>th</sup> June 1943

COMPASSES.

Minimum distance between electric generators or motors and standard compass.....

Minimum distance between electric generators or motors and steering compass.....

The nearest cables to the compasses are as follows:—

A cable carrying .14 Ampères ..... <sup>INSIDE</sup> ~~feet from~~ standard compass ..... feet from steering compass.

A cable carrying .14 Ampères ..... feet from standard compass ..... <sup>INSIDE</sup> ~~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 .....

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

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

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

*[Signature]*

Builder's Signature.

Date 25.6.43.

Is this installation a duplicate of a previous case..... If so, state name of vessel .....

Plans. Are approved plans forwarded herewith..... If not, state date of approval 12-4-43.

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith .....

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.).....

*The Electrical Installation of this Vessel was installed under special Survey, and is in accordance with the approved plans, and the Societies Rules.*

*The materials used are of good quality, and the workmanship is satisfactory.*

*On completion, Insulation resistance in every circuit, was satisfactory, and the Generators were operated under working conditions with satisfactory results.*

*The equipment, as installed, is suitable in my opinion, for a classed vessel.*

*Noted  
 [Signature]  
 14/7/43.*

Total Capacity of Generators..... 60 Kilowatts.

The amount of Fee ... .. £ 28 : 10 :

When applied for, 12.9.1943

Travelling Expenses (if any) £ : :

When received, .....19.....

*A. Dimens*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute .....

FRI 16 JUL 1943

Assigned.....

*Sec minute  
 or L.B. Rph*

501.438.—Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minutes.)



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