

# REPORT ON ELECTRICAL EQUIPMENT

[OTHER THAN FOR THE PROPULSION OF THE VESSEL]

21 OCT 1947

Received at London Office

Date of writing Report 9/9/1947 When handed in at Local Office 9/9/1947 Port of SYDNEY N.S.W.

No. in Reg. Book Survey held at SYDNEY N.S.W. Date: First Survey 5/12/46 Last Survey 9/9/1947 (Number of Visits 9)

on the twin screw motor vessel "PANT" Tons { Gross 210 Net 113

Built at Melbourne, Victoria By whom built Johnson's Lyne Foundry Ltd. Yard No. 44 When built Nov. 1945

Owners The Anglo-Saxon Petroleum Co. Ltd. Port belonging to Sydney N.S.W.

Electrical Installation fitted by Johnson's Lyne Foundry Ltd Contract No. When fitted 1945

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

Plans of similar installation in sister vessel "BUCKIE" were submitted with Sydney Rpt 20830.

Have plans been submitted and approved 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 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 Winch GEN. Yes \* CRUISING " No \* AUXY " No, are they level compounded under working conditions Winch GEN. Yes \* BATTERY CHARGING GENERATORS.

if not compound wound, state distance between generators 10 feet and from switchboard 10ft & 3ft 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

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

Generators are duplicates of those fitted in sister vessel "BUCKIE". See test certificates with Sydney Rpt 20830.

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

of the generators as per rule Yes Position of Generators Winch generators driven by Southern Cross Diesel engine; Cruising generator belt driven from main engine shaft; Auxiliary generator driven by auxy. diesel engine, all in 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 After port engine room bulkhead

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 MISCOLITE, if of synthetic 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

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 arrangements of equaliser switches Winch generators

20KW 380A. No. volt-overload air circuit breakers. Other generators (used for battery charging) protected by cut outs and air breakers.

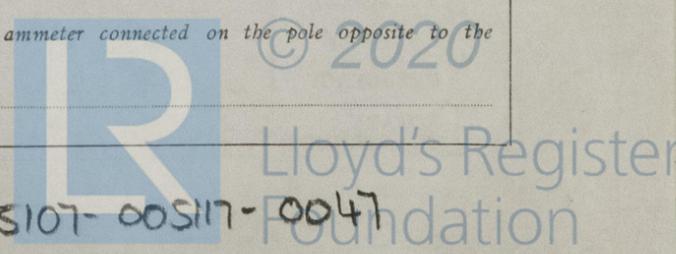
and for each outgoing circuit Lighting, Navigation & Battery circuits protected by D.P. Breakers and fuse on

each pole. Each winch and windlass circuit has D.P. knife switch with fuse on each pole.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 3

ammeters 2V 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.



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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, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. 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 Yes. State maximum fall of pressure between bus bars and any point under maximum load Nil, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Yes with insulating compound Yes 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 Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected Lead sheathed cables supported by clips to perforated metal trays with metal covers where exposed to risk of damage. Cables in exposed positions on deck, forward of engine room led in secured watertight piping adequately supported.

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 effectually bushed Yes and with what material Lead bushes. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position 110 Volt Batteries in steel casings on sides of after deck house and method of control D.P. switches with automatic cut outs and D.P. fuses. 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 No. Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes.

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 Yes.

and where are the controlling switches fitted Yes are all fittings suitably ventilated Yes. are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of 1, whether fixed or portable Yes, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes. are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. 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 Yes and vertically Yes.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. 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 Yes. 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. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type 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 megger tested and found satisfactory Yes.

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PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts	Volts	Amperes	Revs. per Min.		Fuel Used	Flash Point of Fuel
MAIN CRUISING	1	4	120	33.3	1800	Belt from main engine shaft	Light	
WINCH	1	20	110	181.8	1200	Belt from lower diesel engine	Diesel Oil 215° F	
AUX.	1	4	110	37.0	1800	Belt from Kellig Lewis diesel		
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			
WINCH MAIN GENERATOR	20	1	37/.072	182	152	12	V.I.R.	W.T. CONDUIT
" " EQUALISER								
CRUISING GENERATOR	4	1	7/.064	33	46	15	V.I.R.	" "
AUXILIARY GENERATOR	4	1	7/.064	37	46	90	V.I.R.	" "
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS							
DIST. BOARD WITH MAIN SWITCHBOARD IN E.R.	1	7/.064	30	46	10	V.I.R.	LEAD ALLOY SHEATHED
" " IN AFTER ACCOMMODATION ALLEYWAY	1	7/.064	12	46	20	V.I.R.	" "
" " ON BRIDGE	1	7/.064	20	46	50	V.I.R.	" "

LIGHTING AND HEATING, ETC., CABLES

WIRELESS	1	7/.036	10	24	20	V.I.R.	LEAD ALLOY SHEATHED
NAVIGATION LIGHTS	1	3/.036	3	10	50	"	" "
LIGHTING AND HEATING PORT ACCOM.	1	3/.036	6	10	80	"	" "
" " STARBORD "	1	3/.036	7	10	80	"	" "
" " CREWS "	1	3/.036	3	10	50	"	" "
" " ENGINE ROOM	1	3/.036	6	10	40	"	" "
" " CLUSTER LIGHTS & STORES	1	3/.036	6	10	200	"	W.T. SCREWED PIPE
" " WHEELHOUSE	1	3/.036	3	10	30	"	LEAD ALLOY SHEATHED
" " BRIDGE ACCOMMODATION	1	3/.036	3	10	40	"	" "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	B.H.P.					
TRANSFER PUMP	1	1 1/2	1	7/.036	12	24	50 V.I.R. W.T. CONDUIT
WINCHES	4	7 1/2	1	19/.064	51	83	150 " W.T. HEAVY GAUGE SCREWED PIPE
WINDLASS	1	7 1/2	1	19/.064	51	83	200 " " " " " "

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.

..... Electrical Engineers. Date .....

**COMPASSES.**

Minimum distance between electric generators or motors and standard compass 27 feet

Minimum distance between electric generators or motors and steering compass 20 feet

The nearest cables to the compasses are as follows:—

A cable carrying 0.4 Amperes led into ~~feet from~~ standard compass & led into ~~feet from~~ steering compass.

A cable carrying 2 Amperes 3 feet from standard compass 6 feet from steering compass.

A cable carrying ..... Amperes ..... 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.

B. P. Zieeden Builder's Signature. Date 9<sup>th</sup> Sept. 1947

Surveyor to Lloyds Register.

Is this installation a duplicate of a previous case Yes If so, state name of vessel M.V. BUCKIE

**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 not built under the Society's Special Survey but under the supervision of the Commonwealth Government, Ministry of Munitions. The arrangement has been found to comply with Rule requirements and the materials and workmanship appear to be of good quality.*

*Insulation resistance tests and trials have been carried out in accordance with the Rules with satisfactory results and in my opinion, the vessel, so far as electrical equipment is concerned, is eligible to be classed.*

*Noted*  
*[Signature]*  
 13.11.47.

Total Capacity of Generators 28 Kilowatts.

The amount of Fee ... £ 12:0 : 

When applied for,	<u>9/9/</u>	19 <u>47</u>
When received,		19

A. Gerard & B. P. Zieeden  
 Surveyors to Lloyd's Register of Shipping.

Committee's Minute FRI. 5 DEC 1947

Assigned See for machinery etc

100-4/41-1. 3. 0. 5. (PRINTED IN AUSTRALIA) (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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