

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

AUG 21 1939

Date of writing Report... 11th July 1939 When handed in at Local Office... 11th July 1939 Port of... Hongkong
 No. in Survey held at... Hongkong Date, First Survey... April 4th Last Survey... July 7th 1939
 Reg. Book. (Number of Visits 11)
 90267 on the... Steel Twin Screw Motorship "TULAGI" Tons {Gross... 2280.94
 Net... 1679.79
 Built at... Hongkong By whom built... W. H. K. & Whampoa Dock Yard No. 804 When built... 1939
 Owners... Burns Philp (South Sea) Co. Ltd Port belonging to... Hongkong
 Electrical Installation fitted by... The Hongkong & Whampoa Dock Co. Ltd Contract No. ... When fitted... 1939
 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

Have plans been submitted and approved... yes System of Distribution... Two wires Voltage of supply for Lighting... 220
 Heating... 220 Power... 220 Direct or Alternating Current, Lighting... Direct Power... Direct 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... yes 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 Pole 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... 1 Port, 1 Centre + 1 Starboard at fore end of 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... on platform above generator at forward end of
 engine room
 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... Sindanyo, 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... 3-400 amps. triple
 pole Circuit Breakers, with overload coils in each pole + reverse current coil in
 negative pole. Equaliser switches mechanically interlocked.
 and for each outgoing circuit... 1-600 amps. D.P.C.B., 5-200 amps. D.P. Knife Switches, 8-100 amps.
 D.P. Knife switches, 8-60 amps D.P. Knife switches.
 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... yes Instruments on main switchboard... Three
 ammeters... Two voltmeters Voltmeter 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... Two earth lamps.



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 ✓. state maximum fall of pressure between bus bars and any point under maximum load 0.5 Volts, 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 ✓ 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 cables run on perforated plating secured by metal clips and screws, protected by sheet iron where necessary.

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 None 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 ✓. 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 yes, 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 yes. Searchlight Lamps, No. of one Carbon, whether fixed or portable Fixed, 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 ✓ and vertically ✓. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing None. 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 not required 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 ✓, are all fuses of the cartridge type ✓ are they of an approved type ✓. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type ✓. 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.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	3	each 80	220	each 364	540	Oil engines	Heavy oil above 150° F.	
EMERGENCY ...	✓							
ROTARY TRANSFORMER	✓							

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load plus extra 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.	Rate.			
MAIN GENERATORS ... (3 off) ...	each 80	1	61/ each 103	each 364	each 540	90,70,50	V.C.	L.C. + Armoured
" " EQUALISERS ...		1	each 27/093	-	343	53525	V.C.	" "
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

NO. SWITCHBOARDS AND SECTION BOARDS ...								
Bridge Deck Section Box	1	7/064	43	75	270	V.C.	L.C.	
Upper " "	1	7/036	17	28	210	V.C.	"	
Hold Lights " "	1	3/036	7.5	12	120	Rubber	L.C. + armoured	
Large " "	1	7/029	10.6	18.2	40	V.C.	"	
Wireless " "	1	7/029	10.7	18.2	320	"	L.C.	
Navigation Lights Indicator Box	1	3/036	0.9	12	300	Rubber	"	
Heaters Section Box	1	19/052	78	104	210	V.C.	"	
Radiators " "	1	19/064	88.5	135	214	"	"	
Engine Room	1	7/029	15	18.2	30	Rubber	L.C. + armoured	

LIGHTING AND HEATING, ETC., CABLES. from section boards to D. Boards.

WIRELESS Motor	1	3/036	2.3	12	30	Rubber	L.C.
NAVIGATION LIGHTS Masthead Lt. Side Lt. Stern Lt.	each 1	each 3/036	each 0.18	each 12	270, 60	"	"
LIGHTING AND HEATING Bridge Dk Lt. + Fans	each 1	each 3/036	6.7, 2	13	60, 60	"	"
Navigation Bridge + Boat Lt.	each 1	each 3/036	2.7	12	70, 74	"	"
Bridge Dk. Saloon Lt.	each 1	3/036	3.6	12	60	"	"
Midship Accommodation Lt. + Fans	each 1	each 3/036	7.9, 2	12	40, 40, 40	"	"
Upper Dk. " (aft)	each 1	each 3/036	5.5	12	40, 40	"	"
" Hospital D. Boards	1	3/036	2.6	12	80	"	"
" Forecastle " "	1	3/036	4.5	12	300	"	"
Heaters Upper Dk aft, Pantry, Falc.	each 1	each 7/029	13.6	18.2	300, 40	V.C.	"
" Hot Cupboard	1	7/029	13.6	18.2	60	V.C.	"
Radiators Bridge Dk + Upper Dk	each 1	each 7/029	27, 20.7	42, 35	40, 20	V.C.	"
" Hospital	1	3/036	7	12	320	Rubber	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Ballast Pump	1	20	1	19/052	79	164	120	V.C. L.C. + armoured
Bilge Pump	1	12	1	7/052	45	57	100	" " "
Circ. Sea Water Pump	1	12/18	1	7/064	45/68	75	140	" " "
Circ. Fresh Water Pump	1	12/18	1	7/064	45/68	75	140	" " "
Fresh Water Pump	1	3	1	7/029	14.5	18.2	90	" " "
Air Compressor	1	31	1	19/064	116	135	70	" " "
Engine Turning Gear Port	1	2	1	3/036	8.5	12	100	Rubber " "
" " " Starboard	1	2	1	3/036	8.5	12	100	" " "
Lub. oil pump	1	27	1	19/064	110	135	150	V.C. " "
Lub. oil Purifier	2	0.5	1	3/036	each 2.6	each 12	each 150	Rubber " "
Fuel oil Purifier	2	1.3	1	3/036	5.6 each	each 12	each 80	" " "
Oil fuel Transfer Pump	2	3	1	7/029	each 14.5	each 18.2	each 160	" " "
Refrigerator	1	23	1	19/052	86.5	104	40	V.C. " "
Brine Pumps	3	2 each	1 each	3/036	each 8.5	each 12	each 30	Rubber " "
Windlass	1	34	1	19/083	142	191	80	V.C. " "
Capstan	1	12.5	1	7/064	52	75	30	" " "
Winches Forward	2	25 each	1 each	19/064	each 86.5	each 135	each 60	" " "
" Aft	4	25 each	1 each	19/064	each 96.5	each 135	each 50	" " "
Workshop motor	1	5	1	7/036	21	28	80	" " "
Steering Gear	1	6	1	7/064	25	42	80	" " "
Wireless	1	1.3	1	3/036	2.3	12	30	Rubber L.C.
Ring Main for Capstan Windlass	2			37/093	400	686	520	V.C. L.C. + armoured
Engine Auxil Section Box S.	1			19/044	66.7	87	50	" " "
" " " P.	1			7/052	31.2	57	50	" " "
Refrigerator section Box	1			19/064	112	135	100	" " "

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.

HONGKONG & WHAMPOA DOCK Co., Ltd.

Neoh
 Electrical Engineers.
 CHIEF MANAGER

Date *12th July 1939*

COMPASSES.

Minimum distance between electric ~~generators~~ or motors and standard compass *43 feet*

Minimum distance between electric generators or motors and steering compass *36 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.09* Ampères *Compass Light* feet from standard compass *Compass Light* feet from steering compass.

A cable carrying *.36* Ampères *15* feet from standard compass *12* 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.

HONGKONG & WHAMPOA DOCK Co., Ltd.

Neoh
 Builder's Signature.
 CHIEF MANAGER

Date *12th July 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.)

This electric installation has been efficiently fitted on board in accordance with the Rules & approved plans & the materials & workmanship are good.

On completion the installation was magnetically tested & tried under full load conditions & found satisfactory.

See London report No 107086 for the three main generator sets.

See Copenhagen reports dated 31st Oct. 1938 for windlass & Steering Gear. Copies of Test Certificates of Motors of essential pumps enclosed.

Noted
L.S.
4/29/8/39

Total Capacity of Generators *240* Kilowatts.

The amount of Fee	£ 89 = \$ 1448	When applied for, <i>7th July 1939</i>
Travelling Expenses (if any) %	\$ 30	When received, <i>1.9.39</i>
	\$ 1478	

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

Committee's Minute *FRI 1 SEP 1939*

Assigned *see minute as J.E. Rpt.*

2m.10.33.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

