

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 26 AUG 1941

Date of writing Report 18th June 1941 When handed in at Local Office 18th June 1941 Port of Hongkong
 No. in Survey held at Hongkong Date, First Survey Feb 12th 1941 Last Survey 17th June 1941
 Reg. Book. (Number of Visits 14)
 on the Single Screw Motorship "HINSANG" Tons { Gross 4643.91
 Net 3453.55
 Built at Hongkong By whom built HK & Whampoa Dock Co. Yard No. 836 When built 1941
 Owners Inds. China Steam Navigation Co. Port belonging to Hongkong
 Electrical Installation fitted by Hongkong & Whampoa Dock Co. Ltd Contract No. ✓ When fitted 1941
 Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. No Sub.Sig. No

Have plans been submitted and approved Yes System of Distribution 2 Wires, D.C. Voltage of supply for Lighting 220
 Heating 220 Power 220 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 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
 Negative Pole 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 Port, Centre + Starboard, For^d end of Engine room.
 Emergency on platform at top of E. 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 Port 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 E. lony Sindamys, 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 400 amps circuit
 breaker, 1/2 trip on each pole, reverse trip on positive pole; Equaliser switch mechanically
 interlocked.
 and for each outgoing circuit For main Switchboard :- 2-700 amp. C.B., 1-500 D.P. switch, 1-400 D.P. switch
 1-200 D.P. switch, 1-60 D.P. switch. For Emergency Switchboard :- 1-400 C.B., 1-500 D.P. D.T. Switch,
 2-200 D.P. Switches, 12-60 D.P. Switches.
 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard Six
 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 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 ✓, state maximum fall of pressure between bus bars and any point under maximum load 0.5 volt, 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 metal plating, secured by metal clips + screws + protected by galvanized 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 at top of engine room on Bridge deck (Emergency Room) and method of control Switch Board in Emergency Room. 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 no, if so, how are they protected ✓.

and where are the controlling switches fitted ✓, are all fittings suitably ventilated yes, are all fittings and accessories constructed and installed as per Rule yes. Searchlight Lamps, No. of ✓, whether fixed or portable ✓, are their fittings as per Rule ✓. 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 ✓. 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 ✓, 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	3	85 each	220	387	575	Heavy oil engines	Diesel	above 150° F.
EMERGENCY ...	1	17.5	220	79.5	1040/1000	Heavy oil Engine	Diesel	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 ...	N°1 85	2	2 x .2"	387	592	104'	V.C.	L.C.+A
" " EQUALISER ...	N°2 85	1	.2"	387	592	122'	"	"
Equaliser	N°3 85	1	.2"	387	592	140'	"	"
Equaliser		1	.2"	387	592	80'	"	"
EMERGENCY GENERATOR ...	17.5	1	.04"	79.5	104	60'	"	"
ROTARY TRANSFORMER: MOTOR	✓							
" " GENERATOR	✓							

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...							
Winch Tug Mains	2	2 x .4 ^B "	400	928	1300'	V.C.	L.C. + A
Non-essential Engine Room Motors	2	2 x .15 ^B "	330 ^F	492	1020'	"	"
Essential Engine Room Motors	2	2 x .1 ^B "	310	382	1000'	"	"
Emergency Switchboard	2	2 x .4 ^B "	428	576	85'	Rubber	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	.0125"	11	75	180'	V.C.	L.C.
NAVIGATION LIGHTS ...	1	.003"	0.9	10	200'	Rubber	L.C.
LIGHTING AND HEATING ...							
Engine Room	1	.0045"	11	15	30'	Rubber	L.C.+A
Police Lights	1	.0045"	12.7	15	40'	"	L.C.
Boat Lights	1	.003"	9.8	10	210'	"	"
Promenade Deck	1	.007"	19.7	28	80'	V.C.	"
Bridge Deck	1	.007"	15.2	28	60'	"	"
Main Deck	1	.007"	17.5	28	80'	"	"
Cargo Lights	1	.007"	16.5	28	60'	"	L.C.+A.
Bath Heaters	1	.007"	18.0	28	140'	"	L.C.
Radiators	1	.1"	156.0	191	80'	"	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Windlass	1	46	2	2 x .1"	177	382	580'	V.C. L.C.+A.
Steering Gear	1	8	1	.0225"	32.5	75	300'	"
N°1+2 Lub. oil pumps	2	24	1	.06"	92.0	135	60'+80'	"
N°1+2 Circulating Pumps	2	16	1	.0225"	63.3	75	50'+70'	"
Air Compressor	1	30	1	.06"	114.0	135	90'	"
Fuel oil transfer pump	1	5	1	.007"	21.6	28	70'	"
N°1+2 Ventilating Fans	5	3-2.5	1	.0045"	10.6	15.0	160, 180	Rubber
Lub. oil purifier	1	2	1	.003"	8.6	10	20'	Rubber
Fuel oil purifier	1	2	1	.003"	8.6	10	20'	"
N°1+2 F.W. & Sanitary Pumps	2	4	1	.007"	16.75	28	24'-30'	V.C.
Bilge Pump	1	12	1	.0225"	47.3	75	30'	"
Ballast Pump	1	12	1	.0225"	47.3	75	24'	"
Winches	12	3-3.5	1	.015"	12.5	15.7	60'	"
S.O. S. Pump Motor	1	12	1	.0225"	47.3	75	120'	"
Engine Turning Motor	1	7.5	1	.01	30	42	40'	"

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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.

Heoch.

CHIEF MANAGER Electrical Engineers.

Date *17th June 1941*

COMPASSES.

Minimum distance between electric ~~generators or~~ motors and standard compass *58' Approx.*

Minimum distance between electric ~~generators or~~ motors and steering compass *44' Approx.*

The nearest cables to the compasses are as follows:—

A cable carrying *25* Amperes *Compass Light* feet from standard compass *Compass Light* feet from steering compass.

A cable carrying *40* Amperes *✓* feet from standard compass *8* 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.

HONGKONG & WHAMPOA DOCK Co., Ltd.

Heoch.

CHIEF MANAGER

Builder's Signature.

Date *17th June 1941*

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 equipment has been efficiently fitted on board in accordance with the Rules + approved plans + the materials + workmanship are good.

On completion the installation was megger tested + tried under full load conditions + found satisfactory.

See London report N° 108800 for main generator + Manchester report N° 10158 for Emergency Generator. (Photostat Copies enclosed)

Makers test certificates for essential pumps enclosed.

Noted

*L.Y.
3/8/41.*

Total Capacity of Generators *272.5* Kilowatts.

The amount of Fee ... *£92-5/-* : When applied for, *18th June 1941*
= \$1488
Travelling Expenses (if any) *\$ 50* : When received, *.....19.....*
Total *\$1538*

J. L. Morrison
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

FRI. 12 SEP 1941

See HKG J.E 8793



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