

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

18 OCT 1943

Received at London Office.....

Date of writing Report 6th Oct. 1943 When handed in at Local Office 15 OCT 1943 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 17th May Last Survey 7th Oct. 1943
Reg. Book. (Number of Visits.....)

21644 on the M.V. "CHINESE PRINCE" Tons {Gross 948.5
Net 575.2

Built at Sunderland By whom built J. Thompson & Sons Ltd. Yard No. 625 When built 1943

Owners Princo Line Ltd. Port belonging to London

Electrical Installation fitted by The Sunderland Engineering Co. Ltd. Contract No. 625 When fitted 1943

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 Swarmiminated Voltage of supply for Lighting 220

Heating 220 Power 220 Direct Alternating Current, Lighting Yes Power Yes 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 Yes, 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 Yes Have certificates of 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 Engine room - one starboard, two port side

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 bulkhead on main platform

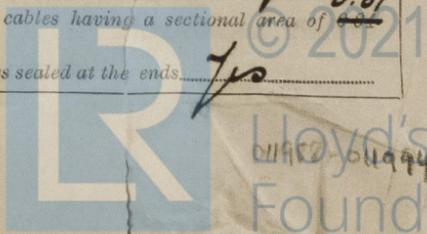
are they in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam and oil Yes, if situated near unprotected combustible material state distance from same horizontally — and vertically —, what insulation material is used for the panels "Kromy Kinsimp", 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 Triple pole circuit breaker with inverse time limit overcurrent release on two poles and reverse current trip, the third pole used for equaliser connection and for each outgoing circuit double pole circuit breakers with overcurrent release on both poles or double pole quick break knife 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 amperes 4 amperes 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 Earth connected to E through two 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 1000A, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions, and at what current did they operate Yes 110A 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 48.8 lightning are the ends of all cables having a sectional area of 0.01 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. Yes, if so, are they adequately protected. Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes or run in conduit. _____ State how the cables are supported and protected. V.C.L.C. cables clipped to avoid plate with cover in 'stowage' and to tray in machinery spaces with protective cover where necessary. V.C.L.C. and W.E.L.C. cables clipped to surface or to wood grounds in access.

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 or fibre. 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. 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. _____ 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. Lighting 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. _____ Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. _____ Are the cables lead covered as per Rule. _____ 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	175	220	796	585	Diesel engines	Dist. 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.				
MAIN GENERATORS	3 x 175	2	61.098	796	2 x 464	176/170	V.C. L.C.
EQUALISER		1	61.098		464	89.85	Do. Do.
M' Coil D.P. Generator	16.6	1	191.082	75	104	260	Do. Do.
F' & Q' Coil D.P. Generator	7.2 x 6.8	1	71.044	32	42	260	Do. Do.
R.D.F. Fuel		1	71.086		28	380	Do. Do.
A.S. Fuel		1	71.064		75	380	Do. Do.
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.				
AUX. SWITCHBOARDS AND SECTION BOARDS						
2nd. Watch H.B. (S.1) Ring Main	2	191.082	228	2 x 191	432.5	V.C. L.C.
3rd. Watch H.B. (S.2)	1	191.082	190	191	104	Do. Do.
4th. Watch H.B. (S.3) Ring Main	2	191.082	228	2 x 191	324.5	Do. Do.
Bridge Deck Lig. H.B. (S.4)	1	71.044	20	42	180	Do. Do.
Upper Deck Lig. H.B. (S.5)	1	191.082	48	104	124	Do. Do.
Salting Deck H.B. (S.6)	1	191.082	91	191	94	Do. Do.
Crew Aft H.B. (S.7)	1	191.082	46	104	588	Do. Do.
Engine Room Lig. H.B. (S.9)	1	71.044	33	42	40	Do. Do.
Engine Room H.B. (S.10)	1	71.064	73	75	140	Do. Do.
Engine Room H.B. (S.11)	1	191.064	100	135	340	Do. Do.
Engine Room H.B. (S.12)	1	71.052	41	57	300	Do. Do.
Engine Room H.B. (S.13)	1	191.052	100	104	180	Do. Do.
Engine Room H.B. (S.14)	1	71.052	40	57	60	Do. Do.
Deck H.B. (S.15) Off S.13	1	71.052	20	57	50	Do. Do.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands, Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (Lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS	1	191.064	85	135	850	V.C. L.C.
NAVIGATION LIGHTS + 4th. C. Cab.	1	71.064	30	75	380	Do. Do.
LIGHTING AND HEATING 5/light (Off S.1)	1	71.064	60	75	264	Do. Do.
2nd. Comp. Lig. Cab. (Off S.1)	1	71.029	5	15	12	Do. Do.
3rd. Comp. Lig. Cab. (Off S.2)	1	71.029	6+5	15	2+40	Do. Do.
4th. Comp. Lig. Cab. (Off S.3)	1	71.029	6	15	20	Do. Do.
5th. Comp. Lig. Cab. (Off S.4)	1	71.029	5+4	15	28, 10, 88	Do. Do.
Upper Deck Lig. (Off S.6)	4 at	71.029	4+4	15	14, 14, 14, 14	Do. Do.
2nd. Deck Lig. Cab. (Off S.6)	1	71.029	30	75	140	Do. Do.
3rd. Deck Lig. Cab. (Off S.6)	1	31.029	2	5	490	W.E. Do.
4th. Deck Lig. Cab. (Off S.6)	1	71.029	5+5	15	6+60	V.C. Do.
Water Boiler	1	71.026	24.6	28	160	Do. Do.
2nd. Boiler	1	71.044	23.7	42	160	Do. Do.
Permeator	1	71.029	11.4	15	160	Do. Do.
Salting Pump Deck Cab. (Off S.7)	2	71.026	32	2 x 28	128	Do. Do.
Water Boiler Cab. (Off S.8)	2 at	71.036	18	28	40, 50	Do. Do.
Engine Room Lig. Cab. (Off S.9) 3 at	1	71.029	3 x 11	15	30, 120, 140	Do. Do.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Sectional Area or No. and Dia. of Strands, Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (Lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
Winches (Off S.1)	6	30	191.064	120	135	20, 60, 150	V.C. L.C.
Winches (Off S.2)	2	30	191.064	120	135	12, 76	Do. Do.
Winches (Off S.3)	7	30	191.064	120	135	18, 4, 13, 78	Do. Do.
Wireless (Off S.1)	1	53	371.072	205	246	220	Do. Do.
Salting Pump Deck Cab. (Off S.7)	1	191.052	99.5	104	308	Do. Do.	
Sea Water Pumps	2	67	371.082	217	296	340, 200	Do. Do.
Ballast Pump	2	25/49	371.072	104/192	246	62, 80	Do. Do.
Forward Pump (Off S.11)	2	18.5	371.072	104/192	246	172	Do. Do.
S.D. Pump (Off S.13)	1	12	191.052	74	104	30, 30	Do. Do.
Bridge Pump (Off S.13)	1	12	71.052	49.5	57	30	Do. Do.
Sanitary Pump (Off S.13)	1	12	71.052	49.5	57	40	Do. Do.
Summing Motors (Off S.12)	2	10	71.052	49.5	57	30	Do. Do.
O.P. Pumps (Off S.10)	2	4	71.036	18.5	28	32, 32	Do. Do.
Boiler Fans (Off S.10)	1	6	71.036	25	28	120	Do. Do.
Oil Pumps (Off S.10)	4	3	71.036	12.7	28	32, 20	Do. Do.
Purging Pumps (Off S.14)	2	1.5	71.029	6.7	15	100, 20	Do. Do.
Forward Water Cooling Pumps (Off S.15)	2	1.5	71.029	7.5	15	24, 20	Do. Do.
Starboard Water Pump	1	1.5	71.029	6.8	15	20	Do. Do.
Starboard Water Pump (Off S.15)	1	1.5	71.029	6.8	15	20	Do. Do.
Starboard Pump	1	1.5	71.029	6.8	15	20	Do. Do.
Vent. Fans Cab. (Off S.2)	1	191.064	48	135	4	Do. Do.	
Supply: Access. Fans	2	3.75	71.036	16	28	80, 320	Do. Do.
E.B. Fans	2	1.6	31.036	8	10	120, 160	W.E. Do.
Aft Vent. Fans (Off S.8)	1	3.75	71.036	16	28	80	V.C. Do.
Refining. Hoop. (Off S.2)	2	3.5/1	71.036	15	28	100	Do. Do.
Workshop (Off S.14)	1	6	71.036	27	28	100	Do. Do.
E.B. Crane (Off S.14)	1	3	71.036	14	28	140	Do. Do.

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 THE SUNDERLAND FORGE & ENGINEERING CO., LTD.**

H. Wilson

Electrical Engineers. Date 7/10/43

COMPASSES.

Minimum distance between electric generators or motors and standard compass 30 feet

Minimum distance between electric generators or motors and steering compass 28 feet

The nearest cables to the compasses are as follows:—

A cable carrying .14 Ampères on the feet from standard compass 7 feet from steering compass.

A cable carrying .14 Ampères 7 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 his degrees on every course in the case of the

standard compass, and his degrees on every course in the case of the steering compass.

R.C. Thompson Builder's Signature. Date 11/10/43

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

Plans. Are approved plans forwarded herewith Yes If not, state date of approval _____

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

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 with satisfactory results, the protective devices of the circuit breakers were adjusted and operated and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a closed vessel.

Total Capacity of Generators 525 Kilowatts.

The amount of Fee 46 : 10 : 0 When applied for, 10 Oct 1943

Travelling Expenses (if any) £ 1 : 5 : 6 When received, 16 OCT 1943

G. Amerson
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 18 NOV 1943

Assigned see minute on J.S. Rpt.

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

