

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office MAY 13 1940

Date of writing Report 6th April 40 When handed in at Local Office 22nd April 40 Port of Middlesbrough

No. in Survey held at Middlesbrough Date, First Survey 11th Jan Last Survey 5th Apr 1940  
Reg. Book Suppl. (Number of Visits 3)

40321 on the S.S. "NORMAN PRINCE" Tons {Gross 1913.27  
Net 919.06

Built at Middlesbrough By whom built Smith's Dock Co. Ltd. Yard No. 1066 When built 1940

Owners Princes Line, Ltd. Port belonging to London

Electrical Installation fitted by Richard Pickering & Sons, Ltd. Contract No. 1066 When fitted 1940

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 Double wire Voltage of supply for Lighting 110

Heating Power 110 Direct or Alternating Current, Lighting Yes Power Yes 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 Yes and from switchboard Yes 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

Positive 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 Engine room starboard side aft

Yes, 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 Yes and vertically Yes, 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 starboard side on

after bulkheads near generators

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 Yes and vertically Yes, what insulation

material is used for the panels Slate, 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 Yes 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

double throw knife switch, and double pole fuses for each

generator.

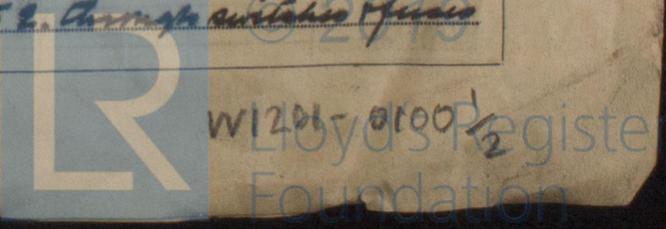
and for each outgoing circuit Double pole knife switch and double pole fuses

Yes

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

ammeters Two voltmeters Two 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 2 lamps connected to 2 terminals suitable fuses



Switches, Circuit Breakers and Fuses, are they as per Rule 7/20, are the fuses an approved type 7/20, are all fuses labelled as per Rule 7/20, are the reversed current protection devices connected on the pole opposite to the equaliser connection 7/20, have they been tested under working conditions 7/20. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule 7/20. Cables, are they insulated and protected as per the appropriate Tables of the Rules 7/20, if otherwise than as per Rule are they of an approved type 7/20, state maximum fall of pressure between bus bars and any point under maximum load 2.5 lbs/sq. in., are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets 7/20. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends 7/20 with insulating compound 7/20 or waterproof insulating tape 7/20. 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 7/20, are cables laid under machines or floorplates 7/20, if so, are they adequately protected 7/20. Are cables in machinery spaces, galleys, laundries, etc., lead covered 7/20 or run in conduit 7/20. State how the cables are supported and protected L.C.A.B. cables clipped to surface in machinery spaces; L.C.A.B. cables clipped to plate in forward timbers and run in galvanized pipe on deck to mainmast; L.C. cables clipped to surface & grounded in accommodation. Are all lead sheaths, armouring and conduits effectually bonded and earthed 7/20. Refrigerated chambers, are the cables and fittings as per Rule 7/20. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands 7/20, where unarmoured cables pass through beams, etc., are the holes effectually bushed 7/20 and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule 7/20. Emergency Supply, state position 7/20 and method of control 7/20. Navigation Lamps, are they separately wired 7/20 controlled by separate single double pole switches 7/20 and fuses D.P. 7/20. Are the switches and fuses in a position accessible only to the officers on watch 7/20, is an automatic indicator fitted 7/20. Secondary Batteries, are they constructed and fitted as per Rule 7/20, are they adequately ventilated 7/20. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof 7/20. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present 7/20, if so, how are they protected 7/20. galvanized fittings bolted in apertures in timber sides - cables outside timber and where are the controlling switches fitted in engine room, are all fittings suitably ventilated 7/20. are all fittings and accessories constructed and installed as per Rule 7/20. Searchlight Lamps, No. of 7/20, whether fixed or portable 7/20, are their fittings as per Rule 7/20. Heating and Cooking, is the general construction as per Rule 7/20. are the frames effectually earthed 7/20, are heaters in the accommodation of the convection type 7/20. Motors, are all motors constructed and installed as per Rule 7/20 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil 7/20, if situated near unprotected combustible material state minimum distance from same horizontally 7/20 and vertically 7/20. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing 7/20. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule 7/20. Control Gear and Resistances, are they constructed and fitted as per Rule 7/20. Lightning Conductors, where required are they fitted as per Rule 7/20. 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 7/20, are all fuses of the cartridge type 7/20 are they of an approved type 7/20. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type 7/20. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule 7/20, are they suitably stored in dry situations 7/20. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 7/20.

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	1	12	110	109	850	Single engine		
						steam engine		
EMERGENCY	1	4.5	110	45.5	1000	Single engine	Fuel Oil 200/150°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	12	1	37/264	109	130	36	V.I.R.	L.C.A.B.
" EQUALISER								
Switching Circuit	4	1	19/244	45.5	53	52	V.I.R.	L.C.A.B.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS						
Indicating & B. feed		1	19/244	42.4	53	160 V.I.R. L.C.A.B.
Supply - Mainmast etc.		1	7/286	13.7	24	188 V.I.R. L.C.
Engin's Saloon etc.		1	7/286	12.2	24	148 V.I.R. L.C.
Officers' Hig. etc.		1	7/286	16.4	24	2 V.I.R. L.C.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS		1	7/286	20	46	374 V.I.R. L.C.A.B.
NAVIGATION LIGHTS		1	7/286	7	24	440 V.I.R. L.C.A.B.
LIGHTING AND HEATING						
Crew Accom. etc.		1	7/286	10.3	24	328 V.I.R. L.C.A.B.
Off. Pass & Wardroom etc.		1	7/286	25.1	31	160 V.I.R. L.C.A.B.
Food Pass & Wardroom etc.		1	7/286	31.6	46	224 V.I.R. L.C.A.B.
Engin's & Boiler Room Hig. etc.		1	7/286	21.5	24	8 V.I.R. L.C.A.B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
Refiq. Machinery	2	201	1	7/286	17+9	24	150 V.I.R. L.C.A.B.

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.

RICHARD PICKERSGILL & SONS, LTD.

*W. H. Spencer*

SECRETARY

Electrical Engineers.

Date 16 APR 1940

COMPASSES.

Minimum distance between electric generators or motors and standard compass *40 feet*

Minimum distance between electric generators or motors and steering compass *40 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *1/2* Ampères *on the* feet from standard compass *7* feet from steering compass.

A cable carrying *1/2* Ampères *7* feet from standard compass *on the* feet from steering compass.

A cable carrying *1/2* Ampères *7* feet from standard compass *7* 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 *any* course in the case of the

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

*W. H. Spencer* Builder's Signature. Date *18<sup>th</sup> April 1940*

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.) *The electrical*

*equipment of this vessel has been installed under special survey. The materials used and the workmanship are good. On completion the equipment was run under working conditions, the governing, regulation and compensation of the generating sets was tested, the insulation resistance of all circuits was measured and the spare gear was examined. This equipment is in my opinion suitable for a closed vessel.*

*Noted  
F.J.  
15/5/40*

Total Capacity of Generators *16 17* Kilowatts.

The amount of Fee ... £ *15:10* : When applied for, *10:5* ..... *19:40*

Travelling Expenses (if any) £ : : When received. *3/7* ..... *19:40*

*Spencer*

Surveyor to Lloyd's Register of Shipping.

FRI: 17 MAY 1940

Committee's Minute \_\_\_\_\_

Assigned \_\_\_\_\_

*See Mdb 56 16835*

2nd 1038.—TRANSFER. (MADE IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minutes.)



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