

Rpt. 13.

No. 14457

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 FEB 1951

Date of writing Report 20th Jan 1951. When handed in at Local Office 19. Port of Calcutta.

No. in Survey held at VIZAGAPATAM. Date, First Survey 14th Sept 50. Last Survey 13th Jan 1951. Reg. Book.

(Number of Visits 5) Tons { Gross 510.4 Net 301.5

on the SS "JALAPADMA"

Built at Vizagapatam By whom built Scindia Steam Nav Co Ltd. Yard No. When built 1950

Owners Scindia Steam Nav Co Ltd. Port belonging to Bombay.

Electrical Installation fitted by Scindia Steam Navigation Co Ltd. Contract No. 7105. When fitted 1950

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 wire parallel Voltage of supply for Lighting 110

Heating - Power - Direct or Alternating Current, Lighting D.C. Power - 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 no, 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 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 main engine room, starboard 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 main engine, starboard side.

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 Sindanaga, 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 8 way circuit

main switchboard fitted with D.P., D.T. switches, ammeter, voltmeter

pilot lamp and earth lamps.

and for each outgoing circuit D.P. D.T. knife switches.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes. Instruments on main switchboard 2.

ammeters 2. 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 indicator 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 —, have they been tested under working conditions —. 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 —, 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 — with insulating compound — or waterproof insulating tape —. 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 fitted on mild steel perforated channeling.

Are all lead sheaths, armouring and conduits effectually bonded and earthed yes. Refrigerated chambers, are the cables and fittings as per Rule —. 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 brass glands fitted with plastic compound. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule —. 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 —. 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 —.

are the frames effectually earthed —, are heaters in the accommodation of the convection type —. Motors, are all motors constructed and installed as per Rule — and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil —, if situated near unprotected combustible material state minimum distance from same horizontally — and vertically —.

Have motors of 100 B.H.P. and over been inspected by the Surveyors during manufacture and testing —. Have certificates of test for motors under 100 B.H.P. intended for essential services been supplied and the results found as per Rule —. 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 —, 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	<u>Two</u>	<u>20</u>	<u>110</u>	<u>180</u>	<u>400</u>	<u>Direct coupled to single cylinder steam engines.</u>	<u>—</u>	<u>—</u>
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			
MAIN GENERATOR	<u>20</u>	<u>6</u>	<u>0.2</u>	<u>180</u>	<u>229</u>	<u>44</u>	<u>L.C.A.</u>	<u>Fitted on mild steel perforated channels.</u>
EQUALISER	<u>20</u>	<u>6</u>	<u>0.2</u>	<u>180</u>	<u>229</u>	<u>38</u>	<u>L.C.A.</u>	<u>braided.</u>
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
GENERATOR								

**MAIN DISTRIBUTION CABLES.**

AUX. SWITCHBOARDS AND SECTION BOARDS	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule	APPROX. LENGTH (lead plus return feet).	INSULATED WITH	HOW PROTECTED.
Saloon circuit	<u>1</u>	<u>.0225</u>	<u>26</u>	<u>185</u>	<u>185</u>	<u>L.C.A.</u>	<u>Fitted on M.S. &amp; perforated channel.</u>
Wireless	<u>1</u>	<u>.0225</u>	<u>10</u>	<u>220</u>	<u>220</u>	<u>L.C.A.</u>	<u>perforated channel.</u>
Navigation	<u>1</u>	<u>.007</u>	<u>7</u>	<u>230</u>	<u>230</u>	<u>L.C.A.</u>	<u>perforated channel.</u>
Large	<u>1</u>	<u>.0225</u>	<u>36</u>	<u>70</u>	<u>70</u>	<u>L.C.A.</u>	<u>braided.</u>
Engine amidship	<u>1</u>	<u>.01</u>	<u>28</u>	<u>90</u>	<u>90</u>	<u>L.C.A.</u>	<u>perforated channel.</u>
Ventilator	<u>1</u>	<u>.06</u>	<u>63</u>	<u>180</u>	<u>180</u>	<u>L.C.A.</u>	<u>perforated channel.</u>
After accommodation	<u>1</u>	<u>.0225</u>	<u>32</u>	<u>203</u>	<u>203</u>	<u>L.C.A.</u>	<u>perforated channel.</u>
Engine & Boiler Rooms	<u>1</u>	<u>.0225</u>	<u>40</u>	<u>20</u>	<u>20</u>	<u>L.C.A.</u>	<u>perforated channel.</u>

**LIGHTING AND HEATING, ETC., CABLES.**

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule	APPROX. LENGTH (lead plus return feet).	INSULATED WITH	HOW PROTECTED.
WIRELESS	<u>1</u>	<u>.0145</u>	<u>10</u>	<u>56</u>	<u>220</u>	<u>L.C.A.</u>	<u>Fitted on M.S. &amp; perforated channel.</u>
NAVIGATION LIGHTS	<u>1</u>	<u>.007</u>	<u>7</u>	<u>28</u>	<u>230</u>	<u>L.C.A.</u>	<u>perforated channel.</u>
LIGHTING AND HEATING						<u>braided</u>	<u>perforated channel.</u>

**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.	In the Circuit.	Rule	APPROX. LENGTH (lead plus return feet).	INSULATED WITH	HOW PROTECTED.
Thermotank ventilator motors								
Saloon	<u>1</u>	<u>1.5</u>	<u>.007</u>	<u>13.6</u>	<u>220</u>	<u>L.C.A.</u>	<u>Fitted on M.S. &amp; perforated channel.</u>	
Midship	<u>1</u>	<u>1.5</u>	<u>.007</u>	<u>13.6</u>	<u>21</u>	<u>L.C.A.</u>	<u>perforated channel.</u>	
After supply	<u>1</u>	<u>3.0</u>	<u>.0225</u>	<u>25.7</u>	<u>185</u>	<u>L.C.A.</u>	<u>braided.</u>	
Fresh water	<u>1</u>	<u>1.25</u>	<u>.007</u>	<u>11.8</u>	<u>30</u>	<u>L.C.A.</u>	<u>perforated channel.</u>	
Midship exhaust	<u>1</u>	<u>.25</u>	<u>.003</u>	<u>1.7</u>	<u>80</u>	<u>L.C.A.</u>	<u>perforated channel.</u>	
Refrigerator motor	<u>1</u>	<u>.5</u>	<u>.003</u>	<u>5.5</u>	<u>53</u>	<u>L.C.A.</u>	<u>perforated channel.</u>	

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 Scindia Steam Navigation Co. Ltd.

*James G. Campbell* Electrical Engineers. Date 29th Dec. 1950.  
Chief Shipyard Manager

### COMPASSES.

Minimum distance between electric generators or motors and standard compass 15 ft.

Minimum distance between electric generators or motors and steering compass 15 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 5 Ampères 15 ft. feet from standard compass, 15 ft. feet from steering compass.

A cable carrying - Ampères - feet from standard compass, - 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 all course in the case of the standard compass, and nil degrees on all course in the case of the steering compass.

For The Scindia Steam Navigation Co. Ltd.

*James G. Campbell* Builder's Signature. Date 29th Dec. 1950.  
Chief Shipyard Manager

Is this installation a duplicate of a previous case yes. If so, state name of vessel "JALAPRAKASH"

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 in accordance with approved plans and the Secretary's letters.

The workmanship is good.

On completion of the installation, the insulation tested in accordance with Rule requirements, with satisfactory results.

The installation has been examined under full working conditions, speed governors tried, with satisfactory results.

It is submitted that this installation be classed in the Register Book in accordance with the machinery class as now recommended.

Noted Ewh 27/2/51

Total Capacity of Generators 40 Kilowatts.

The amount of Fee 1430/- Rs. :  
When applied for, 19  
Travelling Expenses (if any) £ / :  
When received, 19

*E. Grieres*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 6 MAR 1951

Assigned See F.E. mch. rpt.

(The Surveyors are requested not to write on or below the space for Committee's Minute.)