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VEHICLE AND TRAILER ELECTRICAL CIRCUITS INSULATION CHECKS

BY COMMAND OF THE DEFENCE COUNCIL

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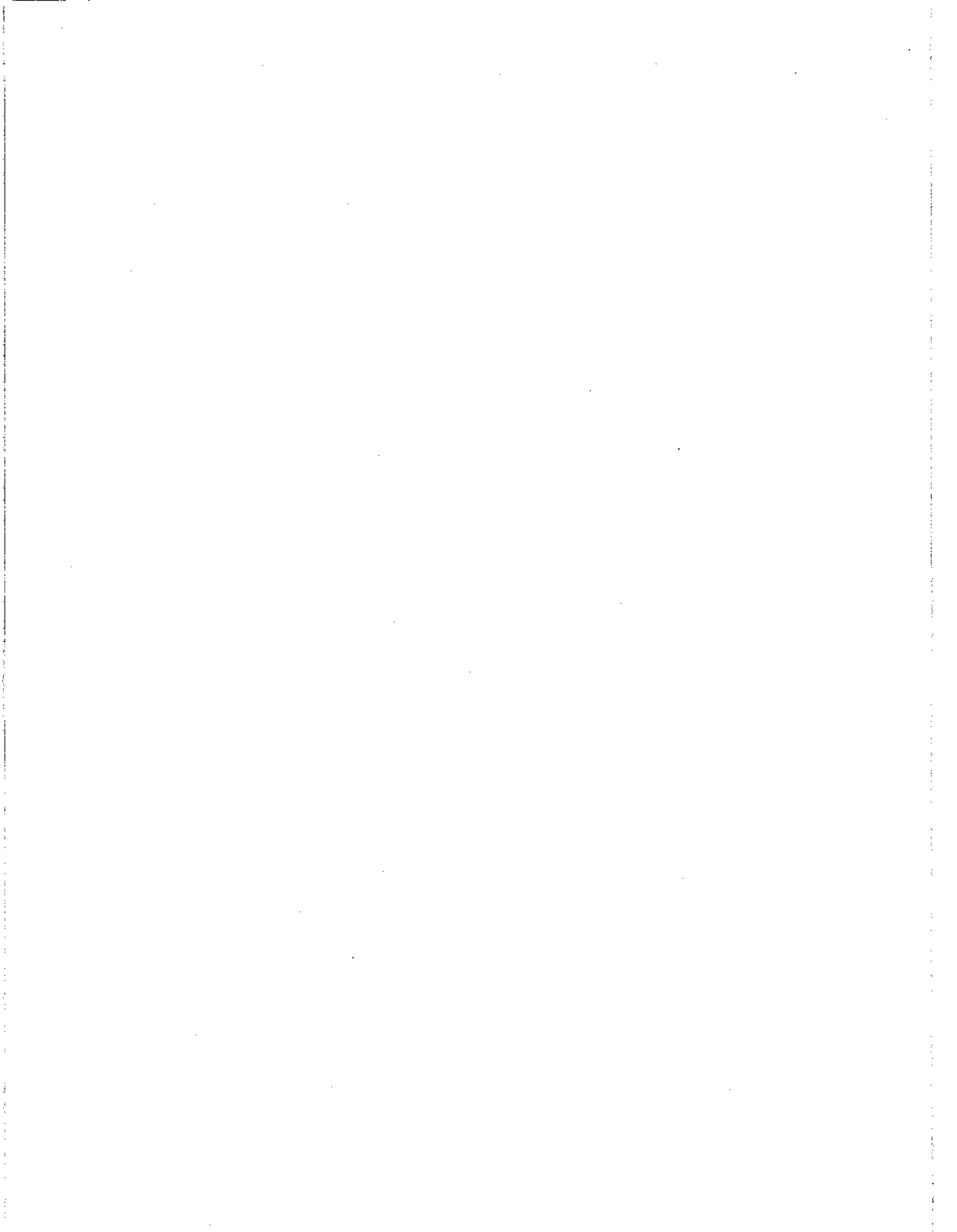
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AMENDMENT RECORD

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PREFACE

1 Amendments are identified by marginal side lining.

2 Comments on this publication are to be forwarded in accordance with AESP 0100-P-011-013 to Vehicles and Weapons Branch REME, Chobham Lane, Chertsey, Surrey KT16 0EE.

WARNING ...

TEST EQUIPMENT WHICH IS NOT INTRINSICALLY SAFE MUST NOT BE USED WITHIN 1.5 M OF THE BULK FUEL CONTAINER FITTED TO REFUELLER/TANKER VEHICLES AND TRAILERS. USE LONGER LOCALLY PRODUCED LEADS.

CAUTION ...

If a positive or negative to earth short circuit exists on a vehicle fitted with an insulated return system then connecting an ammeter from the negative or positive battery terminal to earth will damage the ammeter. Ascertain that no short circuit exists by carrying out procedure in Para 4 first.



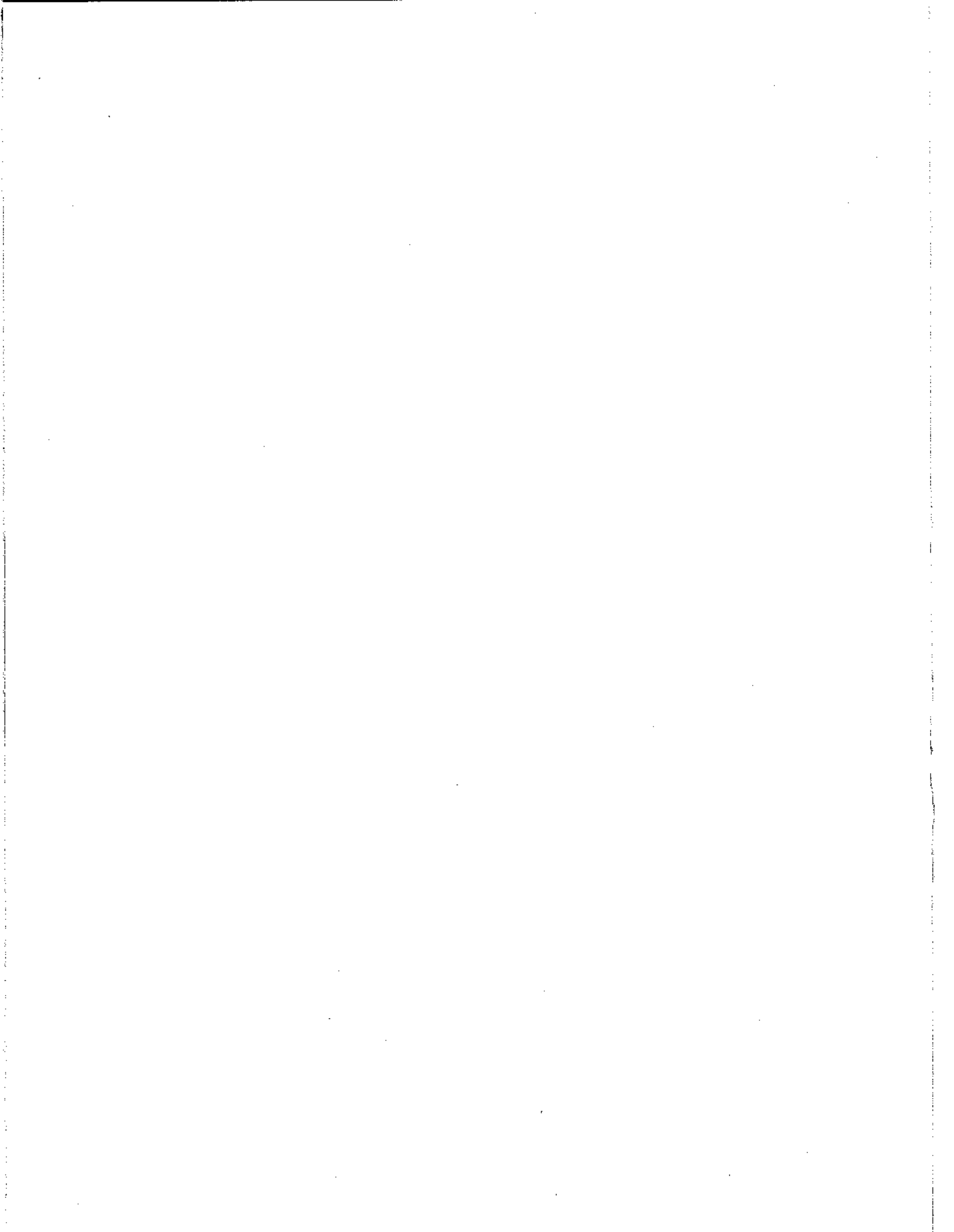
# **RESUSCITATION**

## **TREATMENT OF THE NON-BREATHING CASUALTY**

### **NOTICE**

The inclusion of the emergency resuscitation placard (MOD Form 656) in Military Technical Publications has been discontinued.

This notice is to be retained in the publication until removed by amendment instruction.





## INTRODUCTION

### General

1 A safety hazard exists when a trailer is coupled to a vehicle with a different electrical return system, ie earth return or insulated return. If a 'positive to earth' fault exists on a tractor unit with an insulated return system then a short circuit will result when a trailer with an earth return system is coupled to the tractor.

2 This publication details the method and periodicity for checking the insulation of insulated return systems fitted to vehicles, prime movers, tractor units, trailers and semi-trailers.

### TEST EQUIPMENT

3 The test equipment required is detailed in Table 1.

TABLE 1 TEST EQUIPMENT

Serial	Part Number	Designation	Purpose
(1)	(2)	(3)	(4)
1	Z4/6625-99-252-3606	Multimeter Set GP Hand Held	To measure resistance and current

## PROCEDURE

### Insulation check

4 Proceed as follows:

4.1 Disconnect the battery positive lead.

4.2 Switch all electrical loads ON.

4.3 Connect the multimeter between the battery positive lead and a suitable earth point on the vehicle chassis.

4.4 Switch the multimeter to the ohms range and note the resistance reading.

4.5 Repeat Para 4.4 with the multimeter connected to the battery negative lead.

4.6 In each case the resistance reading is to be greater than 1 k $\Omega$ .

4.7 Remove the multimeter and replace the battery positive lead.

### Rotating electrical components

5 Carry out the procedure detailed in Para 4. If the resistance reading is satisfactory proceed as follows:

- 5.1 Connect the multimeter between the battery positive terminal and a suitable earth point on the vehicle chassis.
- 5.2 Switch the multimeter, initially, to the highest current range.
- 5.3 Switch on the rotating electrical component and read the leakage current on the multimeter.
- 5.4 Repeat Para 5.3 to 5.4 with the multimeter connected to the battery negative lead.
- 5.5 In each case the leakage current is to be less than 30 mA.

### Leakage current

6 Carry out the procedure detailed in Para 4 and 5. If satisfactory proceed as follows:

- 6.1 Connect the multimeter between the battery positive terminal and a suitable earth point on the vehicle chassis.
- 6.2 Switch the multimeter, initially, to the highest current range.
- 6.3 Switch all electrical loads and rotating electrical components ON.
- 6.4 Note the leakage current reading.
- 6.5 Repeat Para 6.2 to 6.4 with the multimeter connected to the battery negative terminal.
- 6.6 In each case the leakage current is not to exceed 30 mA.

### TRAILERS

7 When checking trailers, it will be necessary to connect the trailer to a suitable prime mover whose insulation has been checked in accordance with Para 4 to 6.

### PERIODICITY

8 The insulation check is to be carried out on initial issue of vehicles or trailers to Units, and all subsequent annual REME inspections.