A.P.4343V, Vol. 1, Book 1, Sect. 10, Chap. 1 A.L.29, Oct. 64

Chapter 1

FAULT SIMULATOR TEST SET AC GENERATING SYSTEM ANDOVER MF/VIP AIRCRAFT

LIST OF CONTENTS

			P_{ζ}	fra.				Para.
Introduction	 		/	1.	Case	 	 	5
		, ,	/	-	Test leads	 	 	6
Description			/		Operation	 	 	7
General	 		./	4	Servicing	 	 	9
			- /		_			

LIST OF ILLUSTRATIONS

/			Гig.
Test set		 	1
Test panel		 	2
Circuit diagram		 	3
Test lead wiring di	 	4	
1	Ü		

LEADING PARTICULARS

Test set	• •	• •	• •]	Ref. No.	5G/4287
Overall dimensions (in)			• •	 	17½ ×	$13\frac{1}{2}\times9\frac{7}{8}$
Weight				 		25 lb

Introduction

1. The fault simulator test set is designed for use with the a.c. generating system used in the Andover MF and VIP aircraft. The test set enables the line to line, line unbalance and earth leakage protection circuits associa-

ted with this generating system to be checked for correct operation during an engine ground run.

T:~

2. Line to line and line unbalance faults are simulated by connecting a fixed resistor

RESTRICTED



Fig. 1. Test set

between the selected a.c. bus-bars. This resistor is intermittently rated at 150 volts and should not be in circuit for a period more than 1 second. Earth leakage faults are simulated by connecting a variable resistor between the a.c. output and earth.

3. The test set is primarily intended for testing the protection circuits during aircraft periodic servicing. It can also be used for checking these circuits after rectification of faults.

DESCRIPTION

General

4. The test set (fig. 1) consists of a front panel assembly and test leads housed in a wooden case. The front panel (fig. 2), which is of aluminium alloy, is fitted with two fuse blocks, three indicating instruments, five rotary switches, one toggle switch, one

variable resistor, one neon indicator and one test socket, and is secured to battens in the wooden case by four wood screws. Fitted to the underside of the front panel are two aluminium alloy brackets on which are mounted two Mk 4 brass fixed plugs and the Merz Price protection circuit fault resistors respectively. Handles are fitted to the front panel assembly to facilitate the removal of the assembly for servicing. A theoretical circuit diagram for the test set is shown in fig. 3.

Case

5. The wooden case has a removable lid and is fitted with two snap fasteners and a leather carrying handle. Cooling grilles are fitted to the right hand and undersides of the case to permit cooling of the resistors. On the left hand side of the case a cut out is provided to allow connection of the test

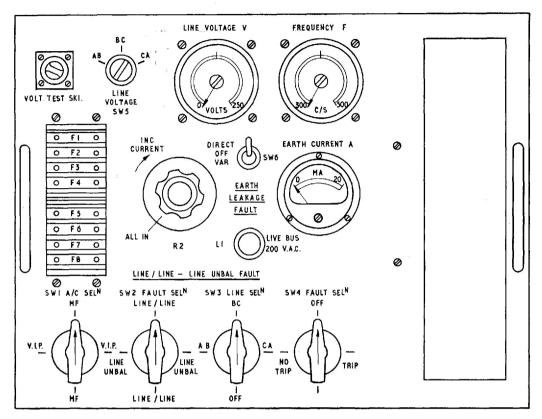


Fig. 2. Test panel

leads. Attached to the lid are operating instructions and a wiring diagram of the test set.

Test leads

6. The two test leads are of unsheathground cable, which terminate in Mk 4 brass free sockets at one end and in cable lugs at the other. During use the end terminating in sockets is connected to the test set and the opposite end connected to the aircraft busbars. The test lead when not in use is stowed in a cable compartment fitted to the test set lid. A wiring diagram for the test lead is shown in fig. 4.

OPERATION

7. To make a functional test of the protection circuits on a single channel, the test

set is initially connected to the appropriate aircraft terminations. The aircraft engine is then ground run at flight idling RPM and the a.c. generator is switched on line for 150V regulation. With the test set selected for MF/VIP aircraft as appropriate, line to line, line unbalance and earth leakage faults are simulated by operation of the selector switches and variable resistor fitted to the test set. In addition, overvoltage, undervoltage, over frequency and underfrequency faults are simulated by existing aircraft facilities. On simulation of each fault, the generating system is observed for correct operation; operating characteristic of voltage and frequency being indicated by instruments fitted to the test set.

8. The aircraft test procedure is contained in the relevant aircraft servicing schedule.

RESTRICTED

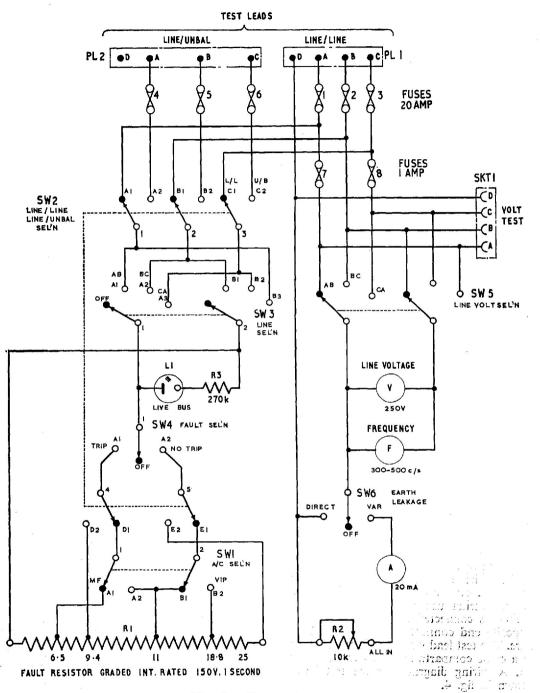


Fig. 3. Circuit diagram

OPE

inako a fun ineuts on a

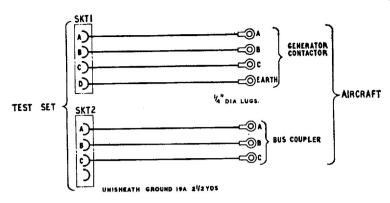


Fig. 4. Test lead wiring diagram

SERVICING

9. Routine servicing is restricted to examination of test set components for security of connections, overheating of resistances and signs of damage or deterioration of the test leads.

10. To ensure serviceability of the test set before use on the aircraft, continuity tests should be made, using a Multimeter type 12889 (Ref. No. 5QP/17447) or similar type of instrument.

t est est to the second of th

.

rigida " e f

The arana

1484111