Group 11 MISCELLANEOUS

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LIST OF ILLUSTRATIONS

Introduction

1. This group contains descriptive and servicing information for the electrically-operated systems on the aircraft that are coded under the circuit function letter M. The only system in this category at present is the pilots' windscreen wipers. Other systems will be included in this Group as they are introduced on the aircraft.

DESCRIPTION AND OPERATION

PILOTS' WINDSCREEN WIPERS

General description

2. A Dunlop Maxivue windscreen wiper installation, Type AC.13846, is provided for each pilot's flat glass windscreen. The system comprises two independent electrically-driven hydraulic pump units, each feeding hydraulic fluid to a windscreen wiper head assembly at each pilot's windscreen. Both pump units are controlled simultaneously by one control switch fitted to the first pilot's instrument panel.

3. The system consists of the following major components:—

Pump units	Type A.C.13444
Wiper head (port)	Type A.C.M.18606
Wiper head (stbd.)	Type A.C.M.18608
Actuating arm (port)	Type A.C.M.18610
Actuating arm (stbd.)	Type A.C.M.18612
Wiper blades	Type A.C.M.18350/12
Pump motors	Type LD.1206

The wiper blades are of the parallel motion type, and are self-parking.

Location

4. The pump units, motors and control boxes are installed on the pilots' floor, one below each console (6P and 7P). The wiper heads, one to each windscreen, are connected by suitable piping one to each pump unit. The LD.1206 pump motors are of the four-pole compound wound type, and each motor is equipped with a gear box providing a 39–1 reduction ratio. Suppressors, Type 04,

mounted one adjacent to each pump unit, are connected in the supply lines to each pump motor to minimise interference with the radio installations.

Controls

5. The control, switch, Type D10004, on the first pilot's panel is of the 3-position double-pole pattern. The switch positions are OFF–FAST–SLOW. The speed control relays and resistance boxes are mounted on the pilots' floor adjacent to the pump units. A routing chart for the circuit is contained in fig. 1.

Circuit operation

6. Referring to fig. 1, it will be seen that d.c. supplies to the motors on the pump units are obtained from the 25-amp. circuit breakers, Type A (No. 5 and 6), on the port fuse and relay panel 3P. These supplies are routed to the motors via the fast control relay in the port control box. The slow control relay is employed to insert suitable resistances in the motor circuits when SLOW is selected on the control switches.

7. When the control switch on the first pilot's panel is moved from the OFF to the FAST position, the following circuit action will take place:—

(1) Supply from fuse 107 will be fed via the control switch contacts 5–4 to energise the fast control relay in the port box.

(2) Contacts 1–1a and 3–3a of the fast control relay will operate to close, and supply from the circuit breakers 5 and 6 will be fed direct to each pump motor via the normally closed contacts 2–2a and 4–4a of the slow control relay. The motors will operate to drive the hydraulic pumps at full speed.

8. When SLOW is selected on the control switch, the following circuit action will take place:—

(1) Supply from fuse 107 will be fed via the control switch contacts 1–2 and 504, and the coil of the slow control relay in the starboard control box will be energised. The fast control relay will remain energised.

(2) The slow control relay contacts 2–2a and 4–4a will operate to break contacts 1–1a and 3–3a will close. The supplies to the pump motors will now be fed via the resistance networks, and the pump units will be driven at a reduced speed, thus giving slow wiper arm operation.

9. On switching OFF, the relays will be de-energised and the supplies to the motors will be cut off. The wiper arms will automatically "park" themselves, thus giving an unobscured view through the windscreen.

SERVICING

GENERAL

10. The supply wiring to the windscreen wiper installation should be examined periodically for signs of general deterioration and security of connections. Servicing details for the suppressors, Type 02, are contained in A.P.4343B, Vol. 1, Sect. 24.

PUMP MOTORS

11. The pump motors, Type LD.1206, require little servicing other than a periodical check on the brush lengths and brush spring pressures. General servicing details for motors is contained in A.P.4343, Vol. 1, Sect. 18.

WIPER ASSEMBLIES

12. Servicing information for the mechanical and hydraulic sections of the windscreen wiper installation, including the replenishing of the pump unit with hydraulic fluid, and check on the wiper arm and blade spring pressures, will be found in A.P.1803S, Vol. 1, Sect. 11. It should be noted that the windscreen wipers must NOT be operated on a dry windscreen.

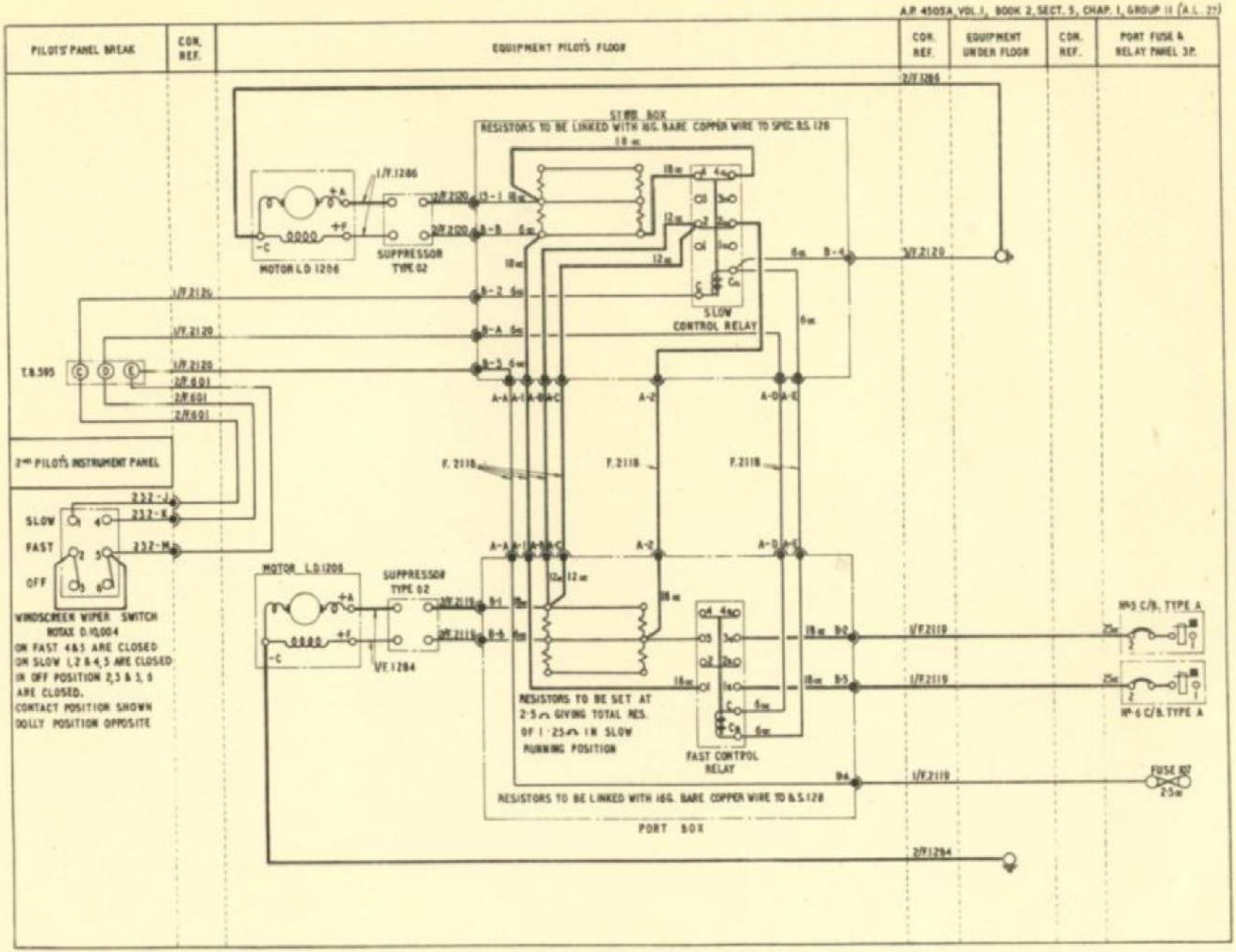

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FIG. 1 PILOTS' WINDSCREEN WIPERS

RESTRICTED

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