

Group A & B ARMAMENT AND PHOTOGRAPHIC

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INTRODUCTION

1. This group contains information relating to the armament and photographic circuits. Details of the individual items of equipment are given in the appropriate specialist Air Publications listed below. The aircraft is fitted with four guns mounted in the fuselage and eight rocket projectiles, four under each wing. The rockets can be fired in either pairs or salvo. Selection of guns or rockets is by an armament master switch located in the cabin while actual firing control is through push-switches on the top of the control column. The camera circuit is arranged to operate in conjunction with the armament services if required. Reference should be made to the combined armament and photographic theoretical diagram (fig. 1).

Equipment	Air Publication
Relay, Type S	A. P. 4343C, Vol. 1, Sect. 3
Maxiflux gun firing relay	A. P. 1641E, Vol. 1, Sect. 3
Relay and resistance box, Type C	A. P. 4343X, Vol. 1, Sect. 3
Switch, autoselector Type C, No. 2	A. P. 1095B, Vol. 1, Sect. 2

Control column firing switches
2. A hinged cover cap over the control column headacts as a mechanical safety catch to lock the gun trigger switch, and as a supply switch to operate the gun firing master relay. With this cover raised, the gun firing trigger switch drops into the firing position on the forward face of the control column. The rocket projectile firing push-switch has a guard which can be raised without movement of the gun firing safety catch. The G45 camera control push-switch is positioned under the gun firing safety catch, which has a small cut-away aperture through which the push-switch can be depressed. The camera circuit can therefore be operated independently of any other circuit.

GUN FIRING (AA, AG)

OPERATION

3. The supplies to all the gun firing circuits are fed from fuses contained in fuse block C, located in fusebox C. The armament master switch selects the main supply to the armament service required and is positioned on panel AF. This switch should be placed to GUNS (Contacts A and 1 linked).

4. Operation of the safety switch on the control column releases the gun firing trigger switch to the 'ready' position and places a supply to the master relay. The contacts of the master relay complete the circuit to

earth of all the control relays and the circuit is now ready for gun firing.

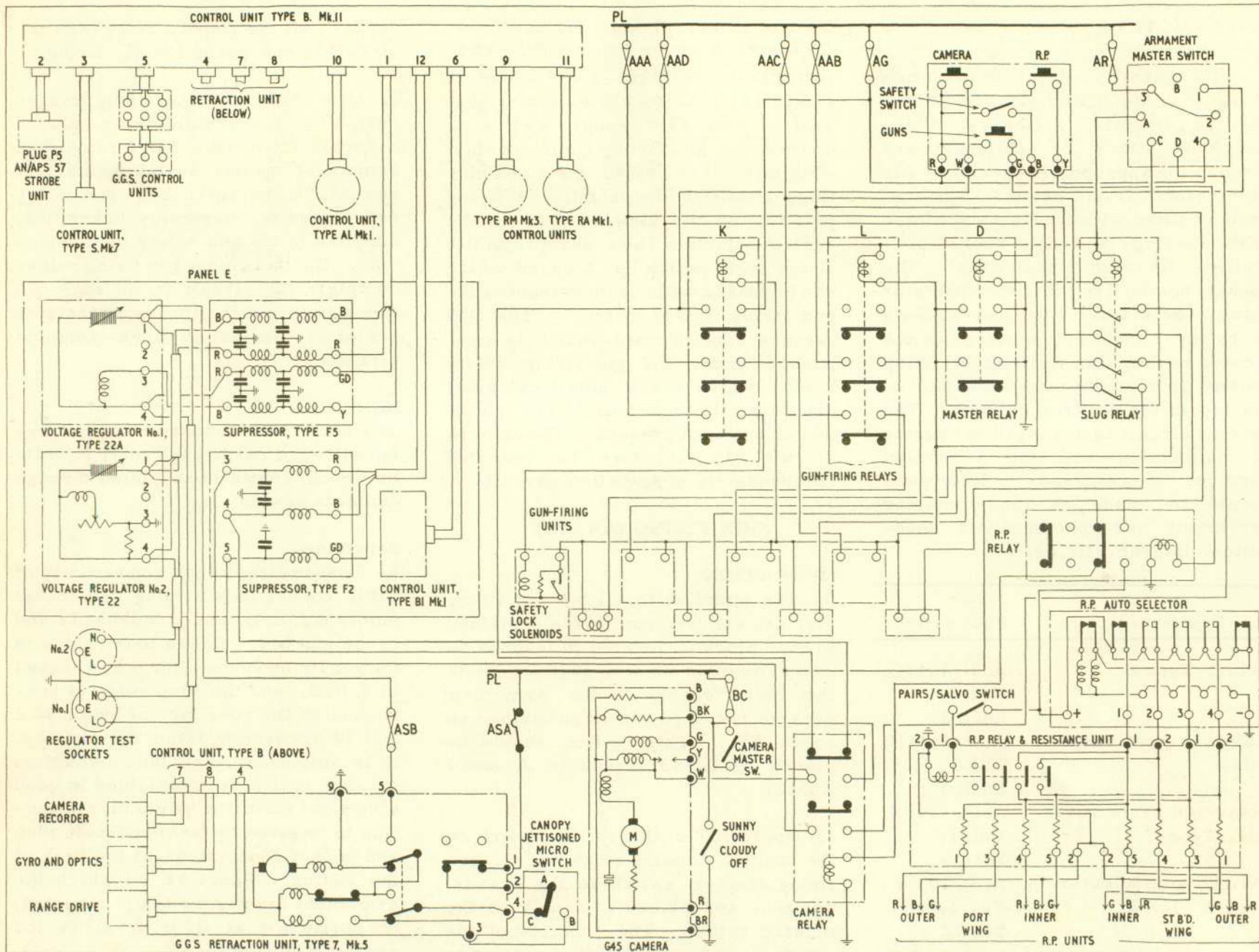
5. Depressing the gun firing trigger switch on the control column, places a supply from fuse AG through the armament master switch (contacts 1 and A), to energize both gun firing relays and the slug relay controlling supplies to the gun safety lock solenoids. Contacts in the gun firing relays complete the circuit to all four gun firing units, and the slug relay contacts complete the safety lock solenoid circuits.

Note..

The port and starboard outboard firing units are fed through relay K while the inboard units are supplied through contacts of relay L.

Servicing

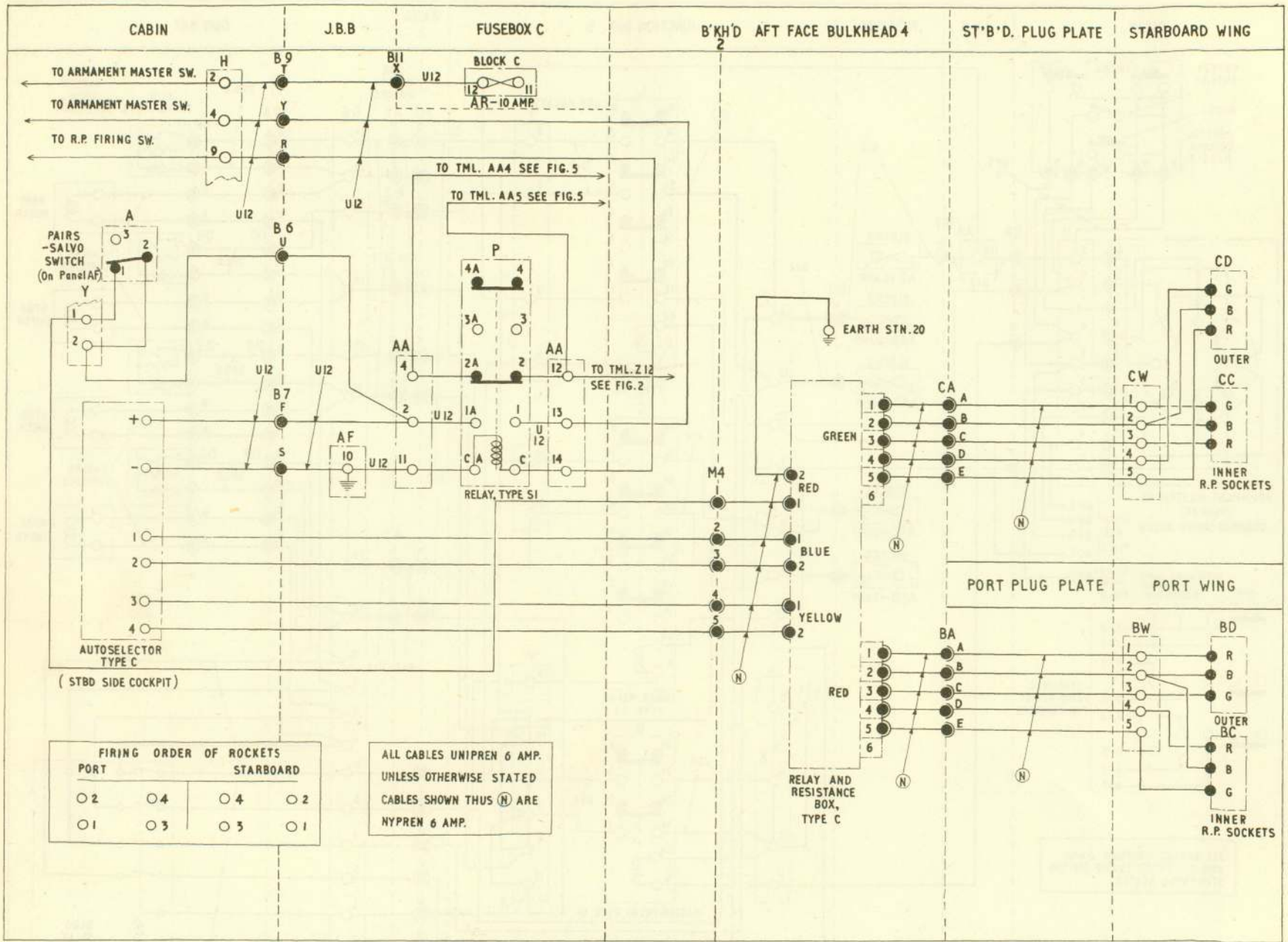
6. Ensure cleanliness and security of cable connections at plug and socket points at J. B. B. and on bulkhead 2 and in the gun bay. Of the four relays in the gun firing system, three are housed in J. B. B. and the slug relay is positioned on the rear face of bulkhead 2 and is accessible from the gun bay. It is important that the armament master switch be maintained in good electrical condition; particular attention to be given to the multi-pole plug and socket connections at the back of the switch. Panel AF on which the armament master switch is mounted, is positioned at floor level in the centre of the cabin.



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Fig.1. Armament and photographic services (theoretical)

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Fig.3. R.P. firing supply-AR

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WARNING

To minimize the risk of accidents, and prior to any work being carried out on the armament circuits, ensure that ARMAMENT MASTER switch is OFF, gun firing buttons are set to SAFE, disconnect all gun firing circuit safety breaks, BATTERY ISOLATION switch to OFF. These instructions and other precautions detailed in A.P.(N)1023 (7), Sect.A, must be fully complied with.

R.P. FIRING (AR)**OPERATION**

7. Four rocket projectiles are fitted beneath each wing and are mounted in pairs. The circuit is controlled from the armament master switch which should be selected to the GUNS AND RP's position. An auto selector switch automatically makes the electrical contact to each set of rockets in turn in the correct firing order.

Note...

It is important that the auto selector switch be set to No.1 position prior to any R.P. firing. There is a push-button on the side of the switch and a numerical indicator, visible through a small window on the front of the unit; operation of the push-switch rotates the numerical indicator and the contact selector mechanism.

8. The supply from the auto selector switch in position No.1, will normally

fire a R.P. from the outboard set under each wing. When required the PAIRS/SALVO switch located on panel AF can be selected to the SALVO position. This energizes a relay in the relay and resistance box and, when the R.P. firing push-switch is operated, both an inner and outer pair of rockets will be fired simultaneously.

SERVICING

9. Particular attention should be paid to the cleanliness and security of all plug and socket connections. Further information on the rocket firing and their mountings is given in Sect.7, Chap.2.

WARNING

To minimize the risk of accidents and prior to any work being carried out on the armament circuits, ensure that, ARMAMENT MASTER switch is OFF, PAIRS/SALVO switch to PAIRS, BATTERY ISOLATION switch to OFF. No electrical equipment in the aircraft is to be tested or switched on while rockets are being loaded or unloaded. Before plugging in any rocket, always ensure that a test lamp is fitted in the socket and is NOT alight. The safety precautions detailed in A.P.(N)1023 (7), Sect.B, must be adhered to strictly.

Testing

10. R.P. circuits should be tested by using an approved test-set usually comprising a series of suitable indic-

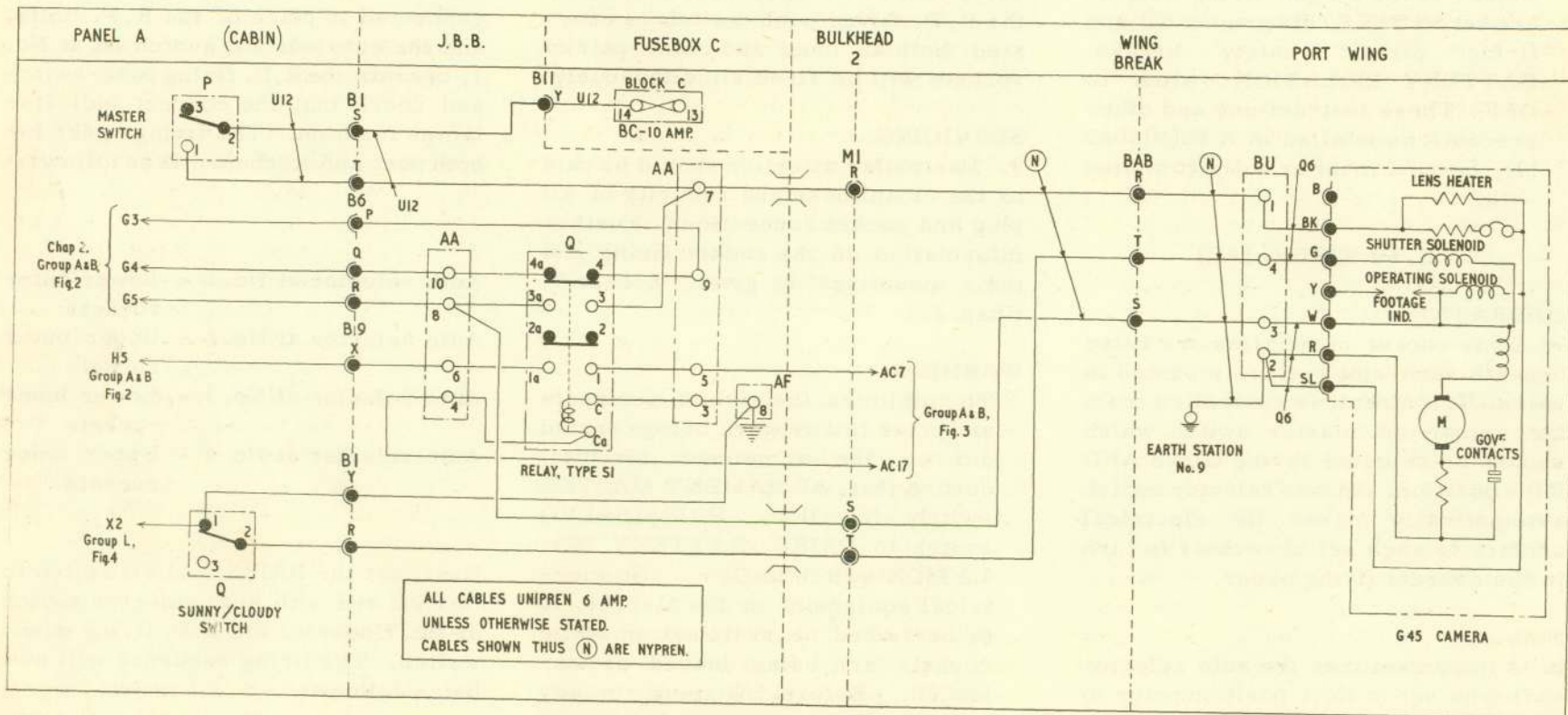
ator lamps connected, by plug and socket connectors, into the aircraft wiring. It is imperative that correct connections are made otherwise inaccurate indications will occur during the tests. With the approved tests set connected in place of the R.P. units, and the auto selector switch set at No. 1, operate the R.P. firing push-switch and check that the correct indicator lamps function. The firing order for both port and starboard is as follows:-

- Auto selector at No.1 - Lower outer rockets
- Auto selector at No.2 - Upper outer rockets
- Auto selector at No.3 - Lower inner rockets
- Auto selector at No.4 - Upper inner rockets

Next, set the PAIRS/SALVO switch to SALVO and with auto selector switch at No.1 operate the R.P. firing push-switch. The firing sequence will now be as follows:-

- Auto selector at No.1 - Lower outer & lower inner rockets
- Auto selector at No.2 - Upper outer & upper inner rockets

On completion of all tests, reset all switches to their normal position.



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Fig.4. G45 camera supply - BC

GYRO GUN SIGHT RETRACTABLE MOUNTING (AS)

DESCRIPTION

11. The supply to the G.G.S retractable mounting is taken from a 5 amp. circuit breaker located on panel A in the cabin. The control switch is positioned at the top of the mounting on the starboard side while cable connections are routed through a plug and socket assembly on panel D. With the G.G.S. in the combat position, the mounting forms an obstruction in an emergency when using the ejector seat. Under these conditions when the canopy is jettisoned, a micro switch is operated by the canopy jettison toggle, completing an electrical circuit to automatically retract the G.G.S. mounting, by-passing the selector switch. If an electrical failure occurs when the sight is in the combat position, it can be retracted manually by a knob on the port side of the mounting. At the same time a switch is opened breaking the supply to the motor. Full details of the operation and servicing of the unit are given in Sect. 5, Chap. 2.

G45 CAMERA (BC)

OPERATION

12. The supply to the camera is taken

from fuse BC in fuse block C in fusebox C, through the camera master switch on panel A in the cabin. With the master switch ON, the supply is fed to the lens-heater of the camera. The camera relay, located, in J.B.B., must be energized before the camera can operate. The camera operation is interconnected with the associated armament services and reference should be made to the simplified theoretical diagram.

13. The camera can be operated as a separate component by switching on the camera master switch and operating the camera push-button on the control column. The camera relay is energized and a supply is placed direct to the camera motor. At the same time, a supply is fed to the camera recorder which will operate if the gyro gun sight is set to the operational position.

14. Under gun firing conditions with the ARMAMENT MASTER switch selected to GUNS and the safety switch and gun firing switches depressed, relay K is energized operating the gun firing units and energizing the camera relay. Provided the CAMERA MASTER switch is ON, the camera will operate. As the gyro gun sight

will in these circumstances be selected to the operation position, the camera recorder will also operate.

Note...

The camera and guns will only operate while the gun firing button is depressed.

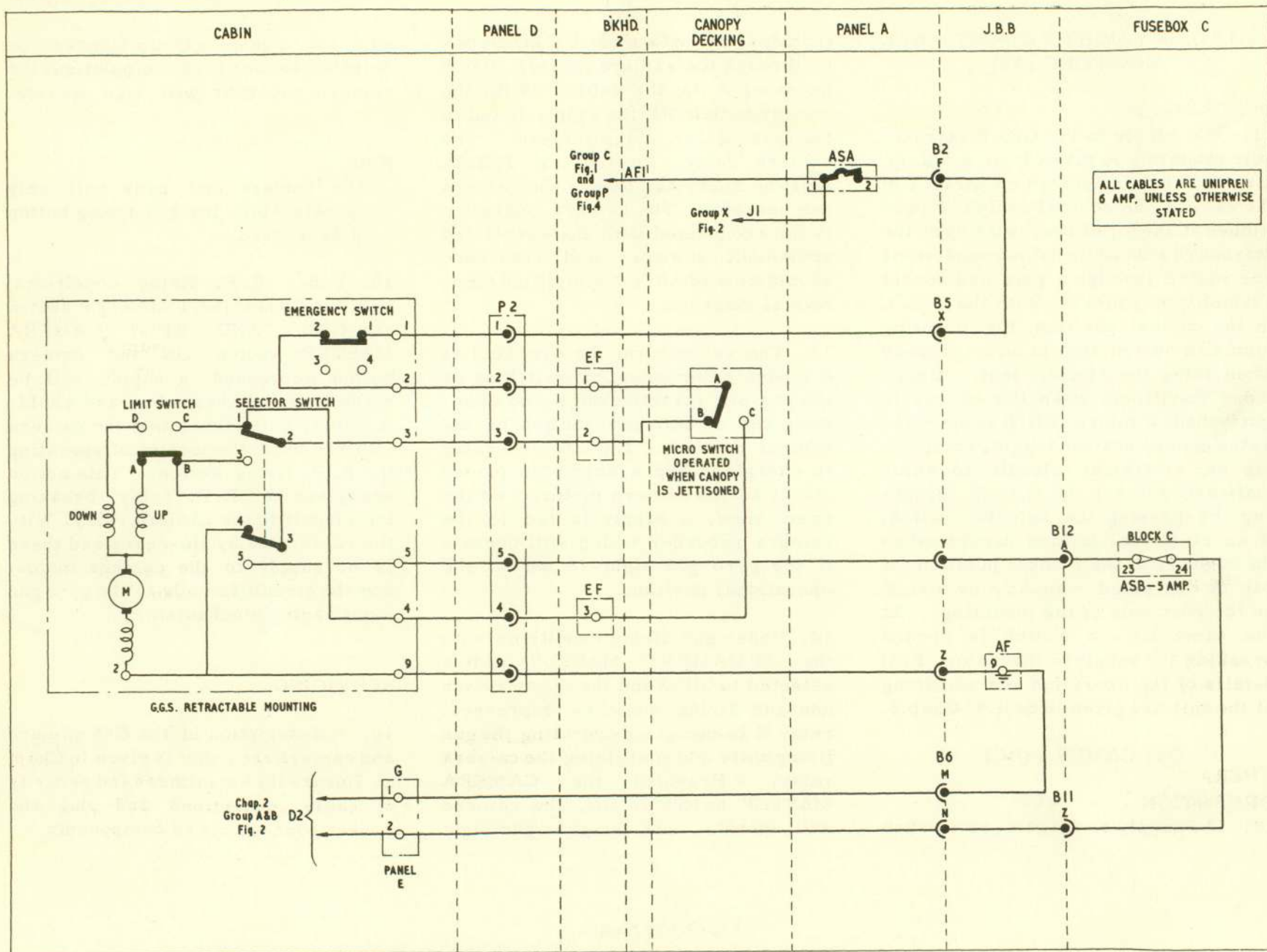
15. Under R.P. firing conditions, with the ARMAMENT MASTER switch at GUNS AND RP's, CAMERA MASTER switch ON and camera button depressed, a supply will be made to the camera relay, and a hold-in supply will ensure that the camera will run until the instant of operating the R.P. firing switch. This action energizes the R.P. relay, breaking the circuit to the camera relay. With the camera relay de-energized there is no supply to the camera motor, and the circuit is made to the gyro gun sight caging mechanism.

SERVICING

16. A description of the G45 camera and camera recorder is given in Chap. 2. Ensure the cleanliness and security of cable connections and plug and socket connections to components.

Fig. 5 overleaf

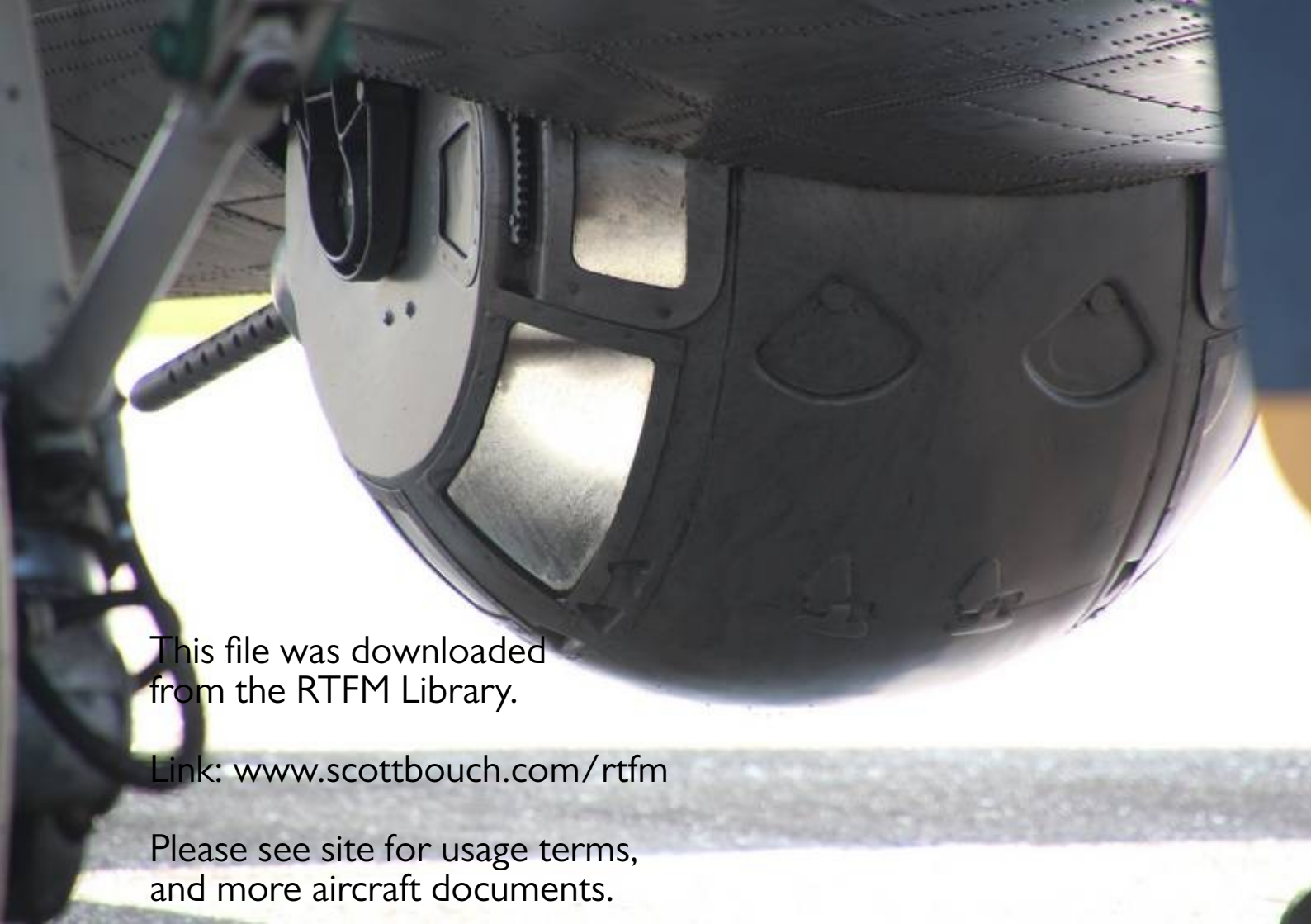
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Fig.5. G.G.S. retractable mounting supply-AS

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