

Wiring The Spoiler Lever Annunciators

Just a simple explanation of how the Spoiler Lever Switches were wired to give correct annunciation dependant on the position of the Spoiler Lever.

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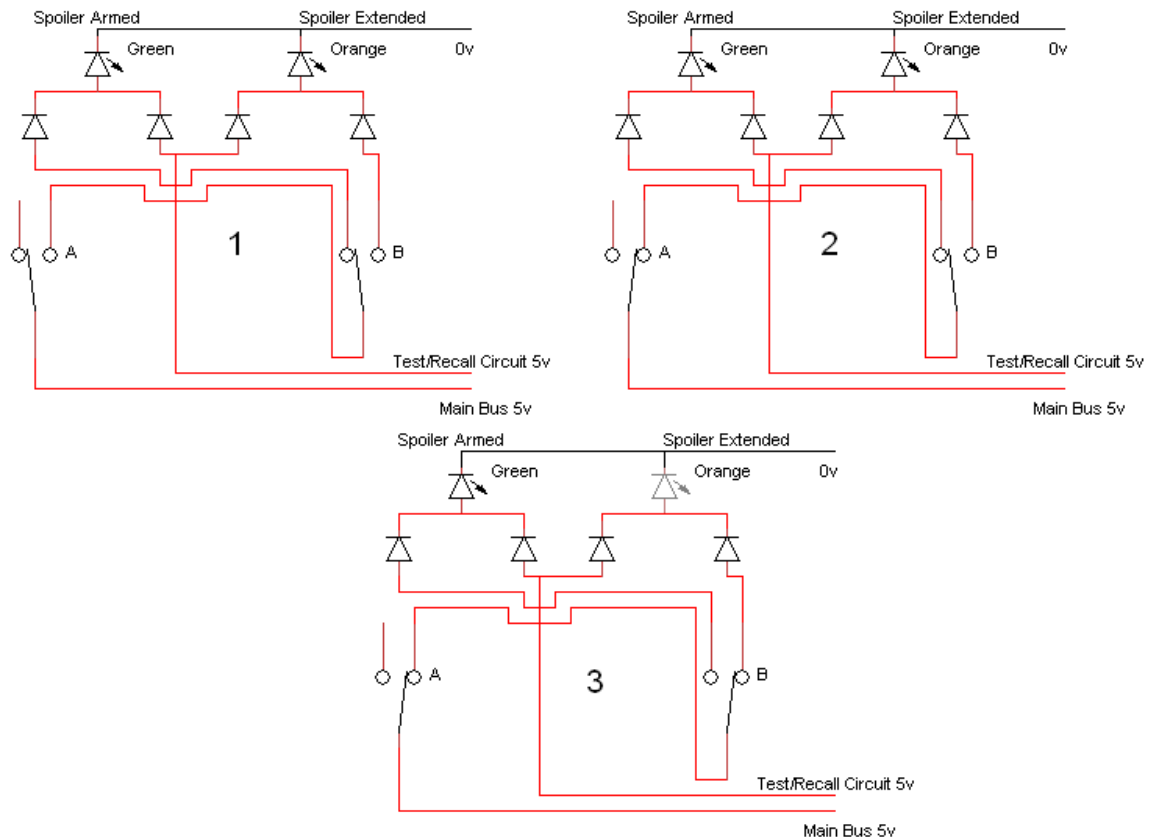


GENERAL DISCUSSION & OPTIONS.

I've tried to get the CPFlight MCPEX1 to do this job for me automatically, but have failed miserably. So as 'Necessity is the Mother of Invention' – Here Goes.

Condition – There are 2 annunciators on the MIP to advise the pilot of the position of the Speedbrakes/Spoilers. One is the GREEN Speedbrake Armed situated on the Captains side and the other is the Orange Speedbrake Extended situated on the First Officers Side. When the Speedbrake Lever is in it's full forward position, the spoilers are down, so no annunciation will occur. If the lever is moved to it's 'Armed' Position, the Green Light (Captains Side) will advise. If the Lever is moved to it's Rearward Position (Flight Détente or UP) either manually or automatically, the Green 'Armed' will go out and the Orange 'Speedbrake Extended' Annunciator will illuminate.

Solution – I have fitted two micro switches inside the TQ casing which are switched based on the position on the Speedbrake Lever.



The two switches are A, the control switch and B, the director Switch. Switch A basically turns the power on and off and switch B directs it to the correct LED based on the position of the lever.

Diagram 1 represents the lever in it's full forward (Down) position. Power is not applied to the circuit at all so consequently, no LED's are on.

Diagram 2 shows the situation where the lever has been moved to it's 'Armed' Position. Consequently switch A has operated and sent power to the Director Switch B. Being in its rest position, Switch B then directs the power to Green Speedbrakes Armed annunciator.

Diagram 3 is the situation where the lever has been moved to it's Flight Détente or UP position. Switch B has changed its direction and is now directing it to the Orange Speedbrakes Extended LED.

TIP. When choosing a micro switch, select a type with a long lever arm with roller. This will allow switching at the Flight Détente position, yet still allow the lever to travel further back to it's fully UP position.

Notes. The use of diodes in the power supply lines is to prevent loopback of voltage to other LED's or part of the circuit when an LED is powered up to illuminate.