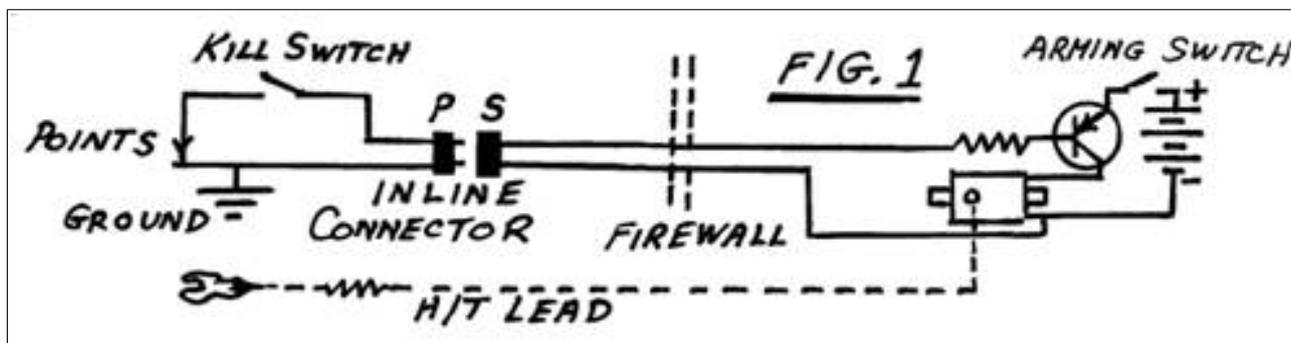


## Roy Bourke – Trouble Shooting Ignition Systems

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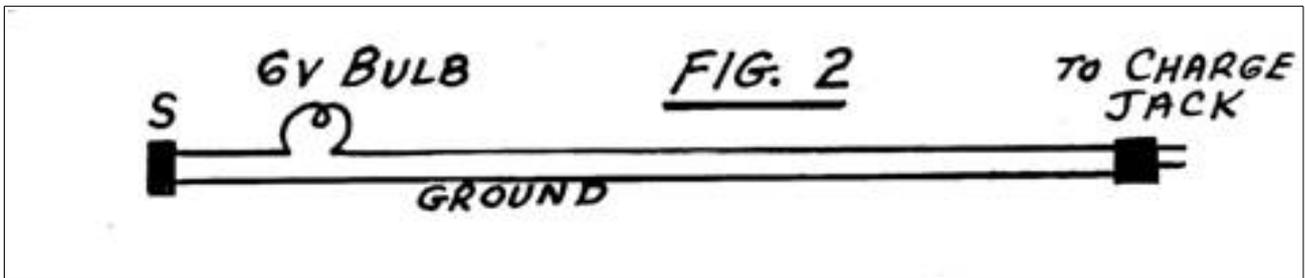
Three things in life that are absolutely certain are death, taxes, and problems with spark ignition systems. Most of the traditional problems with spark ignition systems have been significantly reduced or eliminated with the transistor trigger systems we use today. However, problems still occur so it helps a great deal in finding and solving these problems when we can isolate them to one part of the system.

Figure 1 shows the circuit of a typical transistorized ignition system.



I separate the system into three modules that are connected by inline connectors. I use a kill switch mounted on the engine mount assembly, so the points and kill switch form one module. The coil, transistor and arming switch form an ignition module, and the battery is the power module. The connector to the points and kill switch (I use Deans 2-pin) is accessible in the engine compartment and makes for easy disconnect of the modules for engine removal or for troubleshooting the system. To troubleshoot I use two simple gadgets that are equipped with the same type of connectors.

The test light circuit in Figure 2 will test the points of the engine in isolation from the ignition circuit. (It can also be used to measure the timing and dwell of the points). The tester has a socket S that will mate with the plug P (Fig. 1) when disconnected from the ignition circuit. Also I equip the test circuit with a plug that will mate with the charge jack for the radio system, so the radio battery already in the aircraft will provide power for the test light.



The micro switch circuit in Figure 3 is used to test the ignition circuit when disconnected from the engine module. (Plug P mates with the socket S in Fig.1). The micro switch provides a much cleaner simulated point contact than simply shorting the points with a screwdriver, a common practice which sometimes results in damage to the resistor in the high tension lead. The clip on the tester can be used to hold a spark plug, or to provide a ground path for the spark from the H/T lead (since the engine ground is disconnected for the test).

