

### **Cigar Lighter Fuse and AD**

AD79-08-03 was issued to address the problem of no fuse or circuit breaker protection for the wire that powers the cigar lighter. The FAA regulations require accessory circuits to be protected with the correct size current limiting device for the gage of the wire not the end use item.

Read that again, because it is the important direction that most have missed. It is the *Gauge of the wire (Ampacity)* that determines what the size of the protection device should be, not the current draw of the accessory connected.

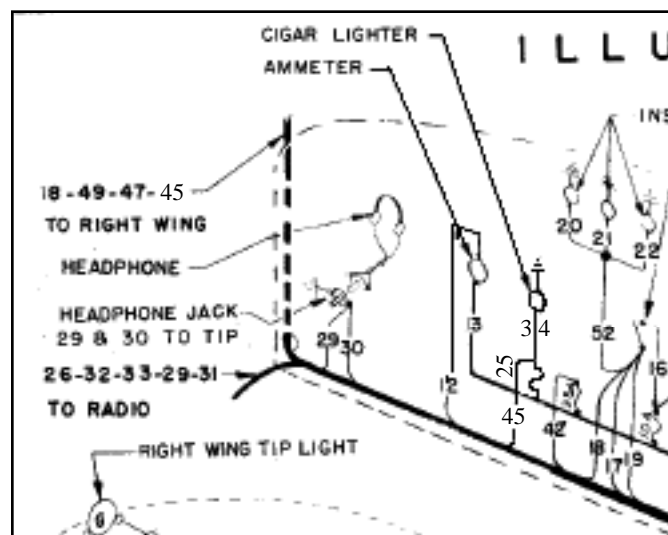
The 120/140 cigar lighter circuit wire was always connected to a fuse, if factory installed, and that served as protection for both wires. The other wire connected to the RH landing gear light fuse of 25 amps (on many planes, the wire “loom” was built into the right hand wing just in case the owner later opted for a landing light there).

What we don’t know is what the size of the wire was running from the fuse to the cigar lighter receptacle. If they did it like they did for the 172, then the planes had an 18 gauge wire to the lighter receptacle and factory compliance with the AD called for an 7.5 amp inline fuse.

To properly comply with the AD, the fuse or circuit breaker of a size matching the capacity of the wire must be connected at the bus or the an ammeter connection. (If you have a fuse holder of the original bus string which is not being used, that could become the fuse for the wire to the lighter).

In the following pages, the original connection is shown as is a more recent Cessna cigar lighter which came with a circuit breaker on the firewall side of the lighter receptacle. It does not comply with the AD because it is at the wrong end of the wire. Its purpose was to have a lesser ampacity breaker which would fail first and allow easier resetting than digging into the bus-end circuit protection. The reason the breaker on the cigar lighter receptacle will not protect the wire is that if the wire broke off the lighter and shorted to ground, the wire would burn up.

This is portion of the wiring circuit from the parts manual for the 120/140’s. Wire 45 and wire 34 are both connected to the 25 amp fuse noted. Wire would have provided current for the right landing light, if installed; on later serial planes the wires which would have supported the right landing light were no longer installed.



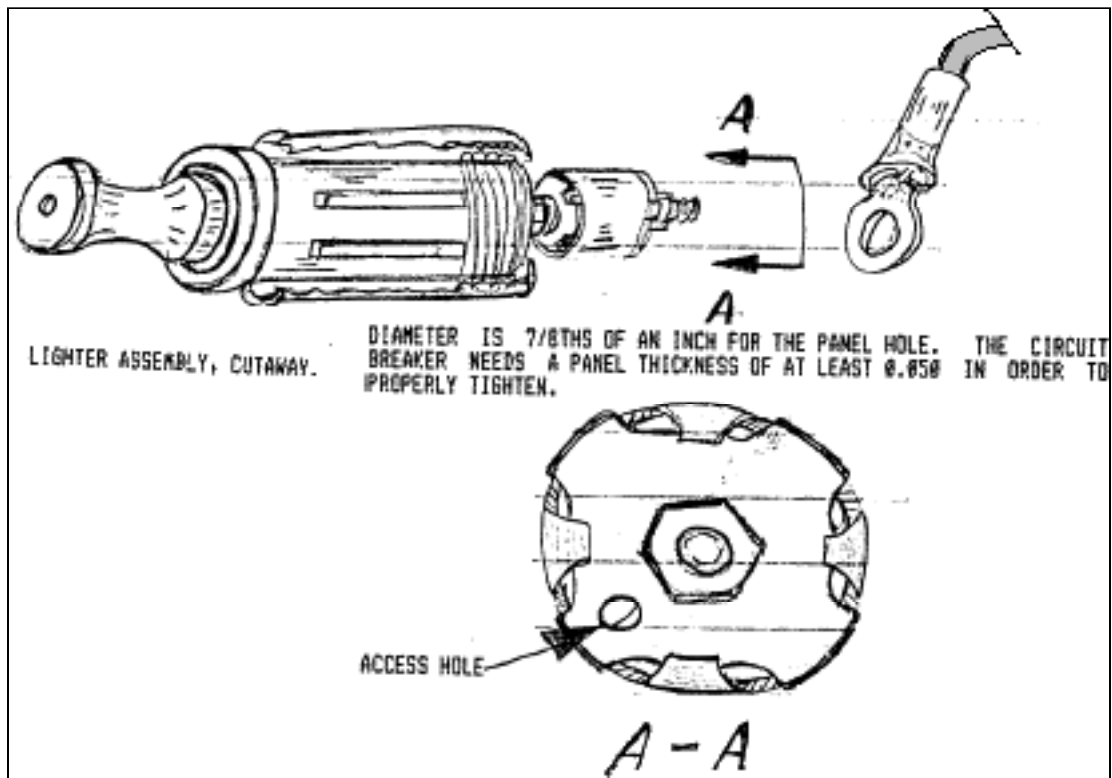
### Cigar Lighter, Cessna

The “new style” of Cessna-furnished cigar lighter has a built-in circuit breaker, mounted on the lighter as noted.

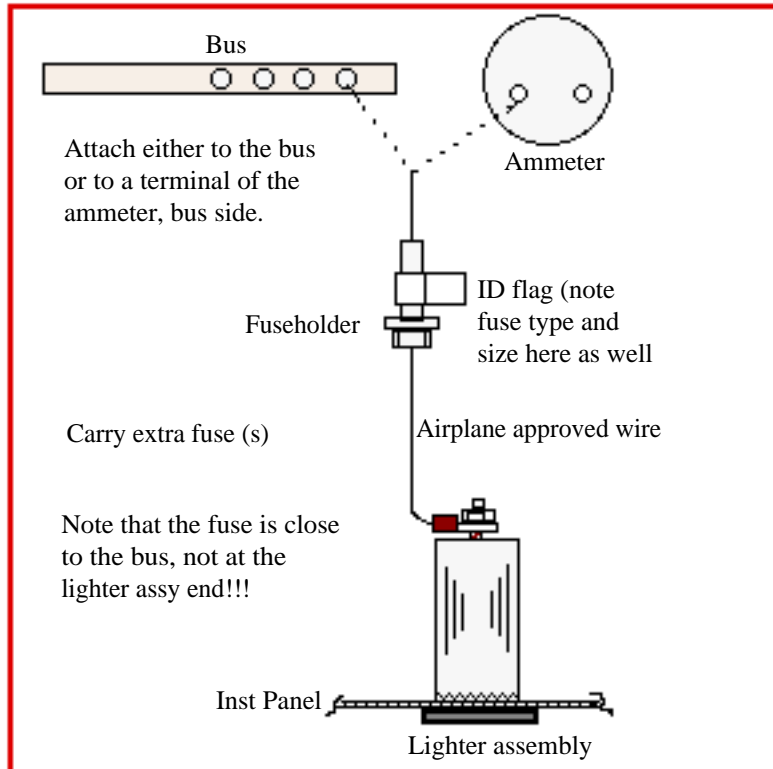
In the event the circuit breaker is popped, it can be reset. With all power off, locate the indicated little access hole on the circuit breaker is...shift the terminal if it is in the way and make sure you retighten.

With a paper clip, insert its end in the hole. Apply pressure slowly and listen for a small click. The click means that it has been reset.

This sketch was created before computers for the home, so be considerate.



Here is how the inline fuse holder should be connected.



From the AC-43B, the capacity of wires when a continuous current is drawn. For intermittent duty, or for routing independently, not in a bundle, a different table should be used

**TABLE 11-9.** Current carrying capacity and resistance of copper wire.

Wire Size	Continuous duty current (amps)-Wires in bundles, groups, harnesses, or conduits. (See Note #1)		
	Wire Conductor Temperature Rating		
	105°C	150°C	200°C
24	2.5	4	5
22	3	5	6
20	4	7	9
18	6	9	12
16	7	11	14
14	10	14	18
12	13	19	25
10	17	26	32

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