



1. Applicability

All Cessna Model 100 through to Model 200 Series aircraft with electrically powered wing trailing edge flap systems employing the spring loaded centre “off” flap position control switches.

2. Purpose

Alert maintainers operators and pilots to the increasing possibility and safety implications of an internal failure of certain cabin flap control switches in flight.

3. Background

One version of the single engine Cessna electric flap system uses a simple flap position control switch which is internally spring-loaded to return to “off” when released from either the flaps “up” or flaps “down” selection. These switches have suffered internal failures including return-spring failure, resulting in the switch not returning to “off” or null position when released from the flaps “down” selection.



CAUTION

Should the flaps be selected DOWN and the spring-loaded “off” switch does not return to “off” or null when released from being held in the DOWN position, it is possible that the flap motor will continue to run to the end of its travel resulting in uncommanded full flap extension with possible reduction of control and / or climb performance.

(Picture: Ken Shuck)

During the evolution of the Cessna electric flap system, various versions of control switches and actuators were produced, resulting in different actuators and control switch actions and functions becoming available for the one model aircraft resulting in some confusion about how the system should operate. Therefore, when checking and/or inspecting the function of the flap control system during a pre-flight or periodic maintenance inspection, ensure the flap control and the system functions as intended. It has been reported that malfunctioning flap switches have remained in service due to lack of system knowledge.



AIRWORTHINESS BULLETIN

Cessna Single Engine Wing Flap Control
Switches and Actuators

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Although a high reliability design standard was selected for the cabin flap control switch, there is no known way to test the switch for impending failure. Switches should be replaced as required by the manufacturer. The SDR database shows that flap switches have failed at around 3000 flight hours time in service during which time it would be possible to achieve the typical projected mechanical life of 20,000 operations or cycles, particularly if the aircraft was predominantly engaged in flying training. It is likely that some switches in service have exceeded their projected design limitations.

Installing unapproved components such as replacement “lookalike” switches, or similar looking or similar Cessna part numbered replacement switches not specifically approved for the application, immediately invalidates the Certificate of Airworthiness and raises the likelihood of flap control system malfunction and failure.

4. References

1. Applicable Cessna Parts and Service Information.
2. Civil Aviation Regulations (1988) regulation 42G Flight control system: additional requirements.
3. MIL-S-15291E(SH) Table XI.

5. Recommendation

Replace cabin flap control switches as required by the manufacturer. Consider replacing the spring loaded centre “off” flap control switches which have accumulated 20,000 operations or cycles or more.

6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

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