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DEPARTMENT OF CIVIL AVIATION  
**Airworthiness Notices**

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T/10

**UNPROTECTED STARTER CIRCUITS IN AIRCRAFT NOT EXCEEDING 5700 KG**

1. Minor fires have occurred in light aircraft due to starter motors burning out and electric cables becoming over-heated as a result of starter relay contacts jamming, a defect which may not be apparent prior to take-off.
2. In the past, there was a requirement for the provision of a battery master switch which although not eliminating a defect of this nature, would enable a pilot to isolate the battery and thereby reduce the risk of a serious fire.
3. Development of aircraft electrical systems has subsequently reduced the value of a battery master switch and led to the provision of alternative forms of protection.
4. The DCA recommends that the wiring of all aircraft up to and including a maximum certified take-off mass of 5700kg be checked in conjunction with licensed aircraft maintenance engineer to ascertain whether failure of relay contacts to open on release of the cockpit starter switch may result in overheating of electrical cables and the starter motor.
5. Where such a hazard is found to exist, one of the following methods of protection is acceptable:
  - (a) Provision of a battery master switch or relay. This alternative alone is acceptable on simple aircraft which are able to continue safe flight and effect a landing without electrical power. A battery master switch should not be provided on aircraft with third brush generator systems unless special precautions are taken.
  - (b) Provision of a manually operated starter isolation switch in series with the starter relay contacts.
  - (c) Provision of two starter relays in series.
  - (d) Provision of a warning light, or lights, to indicate to the pilot that take-off should not be attempted and that electrical power should be disconnected as the starter circuit is still energised.
  - (e) Any alternative method of protection, isolation or warning agreed by the DCA.