



# SERVICE BULLETIN 177B

June 30, 1992

**TO:** FAA Approved Propeller Repair Stations

**SUBJECT:** Lightning Strike Inspection Requirements

**MODELS AFFECTED:** All McCauley propellers

**SERVICE MANUALS AFFECTED:** All McCauley propellers

Service Bulletin 177B replaces Service Bulletin 177A dated August 28, 1990. This version clarifies general inspection procedures, particularly as they pertain to blades versus other propeller components. (Vertical lines in margin indicate changes).

This service bulletin details the necessary and required inspection criteria for McCauley propellers following a suspected lightning-strike.

## Determination of Lightning Strike:

If doubt exists as to the occurrence of a lightning strike, the following criteria can be used to verify any suspicion:

- 1) Check for burns or signs of arcing on blades and hub.
- 2) Using a magnetism detector, check all exposed steel areas of propeller for magnetism.
- 3) Look for any signs of localized melting or metal flow, particularly on blades.

(Please note that the above definition is intended for use as example only. Determination as to whether or not a "lightning strike" actually occurred is ultimately the responsibility of the operator.)

---

TO OBTAIN SATISFACTORY RESULTS, PROCEDURES SPECIFIED IN THIS SERVICE INFORMATION MUST BE ACCOMPLISHED IN ACCORDANCE WITH ACCEPTED METHODS AND PREVAILING GOVERNMENT REGULATIONS. MCCAULEY ACCESSORY DIVISION CANNOT BE RESPONSIBLE FOR THE QUALITY OF THE WORK PERFORMED IN ACCOMPLISHING THIS SERVICE INFORMATION.

McCauley Accessory Division  
The Cessna Aircraft Company  
3535 McCauley Drive  
P.O. Drawer 5053  
Vandalia, Ohio 45377-5053  
Telephone (513) 890-5246  
Telefax (513) 890-6001

If preliminary inspection suggests an actual strike, the following steps are to be performed:

**Procedure:**

Complete propeller overhaul is to be accomplished as per the applicable McCauley overhaul manual. During the overhaul inspection procedure, the following additional investigations should be performed:

**Check propeller components, *other than blades*, for indications of lightning entrance or exit.**

*Determination:*

Carefully inspect propeller components (other than blades) for the presence of a small, dark, discolored area. Some erosion and/or localized metal flow (melting) will possibly be present.

*Correction:*

Any non-blade components showing signs of damage as described above are considered unairworthy and should be scrapped.

**Inspect all non-damaged steel components for signs of magnetic charge.**

*Determination:*

Check all suspected components using any standard magnetic detection device.

*Correction:*

All components showing any signs of magnetic charge should be completely demagnetized using an FAA approved method.

**Inspect *blades* for indication of lightning entrance or exit.**

*Determination:*

This damage will be evident, in most cases, by the presence of a small, dark, discolored area. Some erosion and/or localized metal flow (melting) will possibly be present.

*Correction:*

All lightning-damage indications must be removed from blade prior to return to service as follows:

- 1) All burn indications must be removed using mill file, sand paper and/or crocuscloth.
- 2) Following damage indication elimination, remove an additional .020" of material from the affected area.
- 3) Following material removal, perform a dye-penetrant inspection on the affected areas per MIL-STD-6866.
- 4) If any indications of cracks or other flaws are found, additional material must be removed until all indications are gone.
- 5) Inspect blade per the appropriate overhaul manual. If blade is found within dimensional limits, it may be returned to service.

**APPROVAL:** FAA approval has been obtained on technical data within this publication that affects product type design.