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**Subject:** CEN22LA344, Memorandum of Correspondence

**Contact:** Stephen Simpson, Aviation Safety Inspector, Federal Aviation Administration, North Texas Flight Standards District Office

Stephen Simpson stated that postaccident examination of magneto revealed all four of the magneto case screws were loose before the case was opened. Grounding of the magneto halves and its capacitors was through the magneto case. Upon opening of the case, the cam follower for the right side of the magneto assembly was melted, which did not provide clearance for the contact point. The left side of the magneto assembly did not exhibit melting or electrical arching, and its contact point clearance was 0.008 in. According to the magneto manufacturer's maintenance information, the contact point clearance is specified as 0.016 +/-0.002 in.

The magneto capacitors that were installed at the time of the accident were tested and found to be within the magneto manufacturer's specifications.

The magneto case was reassembled in preparation for an initial bench test of the magneto. During the test, there was no ignition on the right side and very intermittent, almost nonexistent, ignition from the left side. The test leads were then swapped so that the left side was operating off the right capacitor and the right side was operating off the left capacitor; no ignition was produced. Examination of the magneto afterward revealed that the left side cam follower began to melt.

In preparation of a second bench test, the magneto's left side contact point clearance was then re-gapped to 0.018 and good test capacitors were utilized with

test leads bypassing the installed capacitors. During the test, the ignition from the left side of the magneto functioned normally.

In preparation of a third bench test, the test capacitors that were utilized for the second bench test were disconnected and the leads from the original capacitors from the time of the accident were reconnected. During the test, intermittent ignition was produced again. When a separate ground lead was connected directly to the left side capacitor to bypass the magneto case, the ignition from the left side of the magneto functioned normally. The right side capacitor was then tested in the same manner, and the ignition from the right side functioned normally. When the direct ground wire was removed, ignition was almost nonexistent, and arcing was observed melting the cam follower.

The left capacitor was then removed from the magneto case and corrosion was present on the inner and outer portions of the case, which provided a ground to the capacitor.