Protect the Butternut 30-Meter Doorknob Capacitor
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My Butternut HF-6 has served me very well for the past 20 years. The only problem I've had is that the 67 pf doorknob capacitor on the 30-meter coil has failed three times (most recently just a few months ago). This problem is characterized by loss of sensitivity and high SWR on 20- and 30-meters meters – usually intermittently at first, which makes it difficult and frustrating to determine where the problem is. I believe this problem is due to stresses placed on the capacitor when the antenna sways in the wind. If you examine the way in which this doorknob capacitor is mounted compared to the other doorknob capacitors, you can see why this could occur (the capacitor is mounted with aluminum brackets to a possibly flexible piece of dielectric material). To resolve this problem, I cut out a small 1" x 1/2" x 0.037" aluminum bracket (aluminum sheet available from ACE Hardware). I drilled 1/8" holes on either end of this bracket, and mounted the 67 pf capacitor to one side of the existing bracket on the 30 meter coil using a #4 screw, lockwasher and nut. Next, I made up a 1" piece of wire with #4 solder lugs on each end and used this to connect the other end of the capacitor to the 30 meter mounting bracket, again with #4 hardware. This wire eliminates any potential stress on this capacitor. The photo shows the details.

Will this solve the problem? I think so, but only time will tell!