

## SHOP NOTES King Midget Maintenance and Restoration

### D-20 M2 Brake Shoes

**Bob:** I pulled the left wheel off today checking the brakes (see picture). Is this the normal setting for the square brake cam to be when the brakes are released?

**Roger Orcutt**

Good question, Roger. Ideally, the square peg should pretty much fill that square opening, but as the brake shoes wear down, the brakes are adjusted—and that's the adjustment—just rotate the peg, including the whole brake arm a bit.



There are differing opinions on the linings. We all agree they must be the old style soft linings as used originally, but some think the linings should cover the entire shoe (I'm in that camp), others think yours are correct while others use the same amount of lining as on yours, but in two pieces, with the ends at the top and a gap at the bottom. The important thing is the brakes need to retract enough that the wheel can rotate freely, and that can require some sanding with new soft linings. **Bob V.**

**Roger:** That's correct. It is the adjustment. I did a Model 2 a few years ago and I had to add two thin pieces of metal to the side of the square peg to get it back to square. The shoe material was fine and that fixed the problem. What was happening is the peg was going past half and not returning. Could have been wear on the drum and shoe combination. I think I used two pieces 1/16" thick, tack welded it to the peg and good to go. **Lee**

**Lee:** I'm not having the problem of the square going past half way and not returning. This is what we call camming over in the truck industry. These brakes are very similar in design to a Class 8 semi tractor, but as Bob mentioned, if the square peg should fill the opening, I think I'll follow what you did and add some metal to the square peg with the high point on the peg setting at the 11:00 / 5:00 position. As the picture shows, my drums do not have any resistance unless you tell me the lining is worn down. Then I will change lining and readjust. I'm changing my cable after reading *Shop Notes*. My cable is the plastic coated mentioned in the book and does not seem to stay in adjustment. My brake material looks to be in good shape. It measures .215 thick. Can you tell me the thickness of new lining? **Roger**

**Roger:** I think they used .250 material, but you're in the wear area. I would let it ride, get some good cable and you will feel more solid brakes. **Lee**

**Roger:** Great. Be sure to get 3/16" soft aircraft cable, and be sure it is well swaged on both ends. And while you're at it, Roger, I've reviewed the several articles in *Shop Notes*

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on M2 brakes and the consensus is, the brake shoes should float on the bottom pivot and the soft lining should wrap the whole shoe. I don't know the thickness of the new lining and have no way to measure, but your linings look good to me, but too short. **Bob**

**Bob & Lee:** I have another question for you guys. The brake shoe is held on at the bottom with one 5/16" bolt which looks like it goes thru a 1/2" hole. My question is, should this tighten the brake shoe to the backing plate (that is how mine is) or should the shoe be held on with a shoulder bolt allowing the bottom of the brake shoe to float so it can always be in the center of the brake drum? I think the latter method would allow the brake lining to have maximum contact with the brake drum when the brake was applied. **Roger**

**Roger:** Yes, that's what we meant by letting it float. Otherwise, as you suggest, the braking action will be confined mostly to the top of the brake pads. **Bob**

**Thanks for all the advice.** I will go on the hunt for cable today. I will keep you posted as this project continues. **Roger**