

Photo 1: The Extra Long Reach Pliers in action, fixing a wayward Aquila XL fuselage.

Extra Long Reach Pliers

The perfect tool for repairing that long, skinny fuselage.



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I have a couple of long reach tools, but none long enough for what I was working on. I've had a need for something that could open and close and get way down in a fuse. Soooo... I needed to make something...



Photo 2: There are a number of types of long reach tools available. Here are a couple of mine — they get a lot of use.



Photos 3 and 4: The first thing I did was look around at what I had extra of. I had an old set from Harbor Freight that cost \$5, so I picked out one that was not too long and not too short.



Photo 5: I grabbed a 3ft fiberglass tube (carbon will work fine also) from my stock. This one looked good.



Photo 6: I marked where they should be cut off.



Photo 7: I was thinking of keeping the springs, but later found them unnecessary.



Photo 8: After cutting and grinding, I drilled a couple of holes for the pushrods.

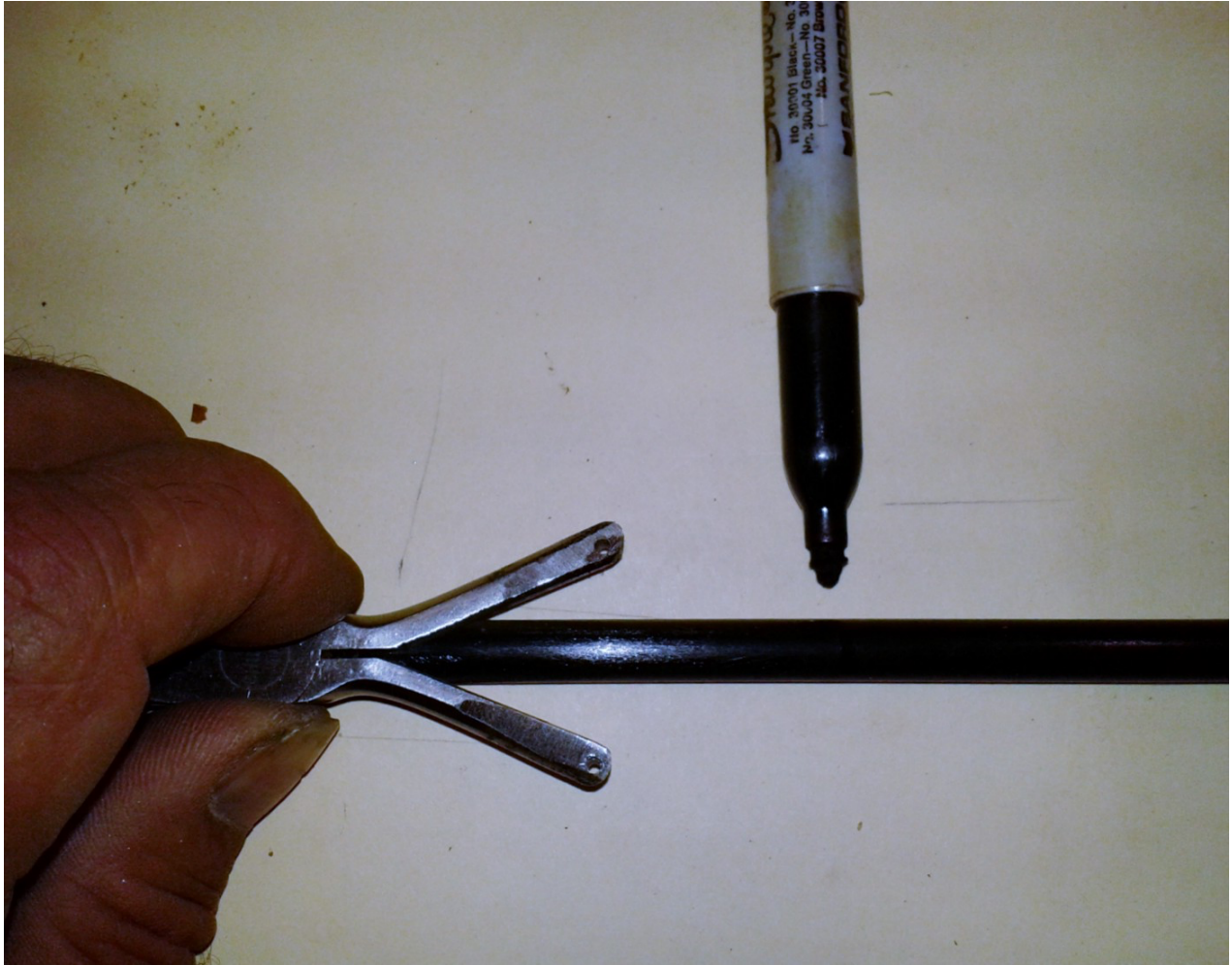


Photo 9: I marked a place that look reasonable for the pushrods to exit.



Photos 10 and 11: I cut a slot in each side of the tube about 3/4 in long.



Photo 12: I drilled through the center of the pliers, took a piece of aluminum rod, turned down one end to fit the tube, drilled and tapped it for a tiny socket head cap screw. You could just as easily fill the rod with epoxy or a dowel and put the pliers right on the rod. Just account for that when making the slots.

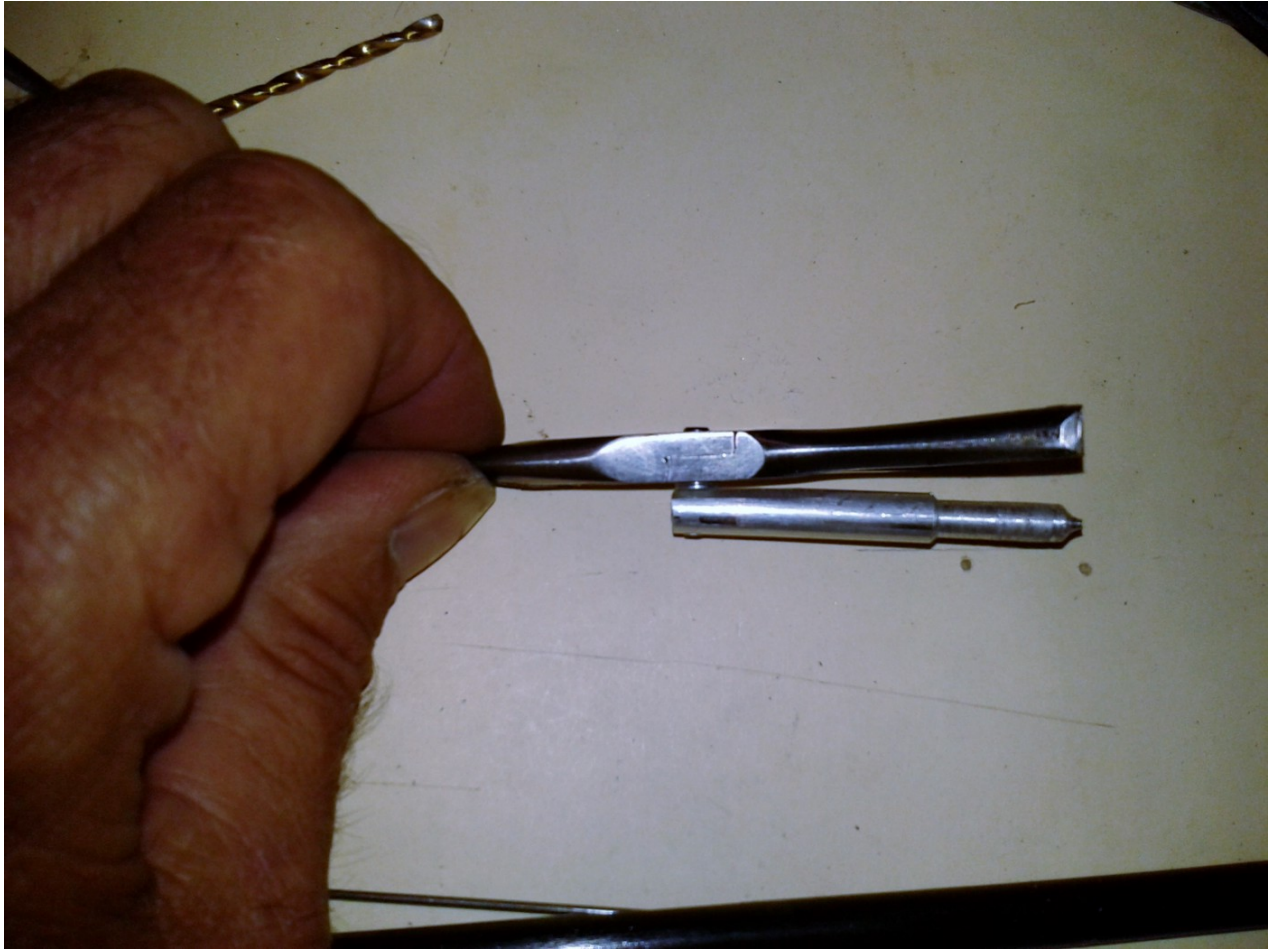


Photo 13: I added the washers as spacers and screwed it together.

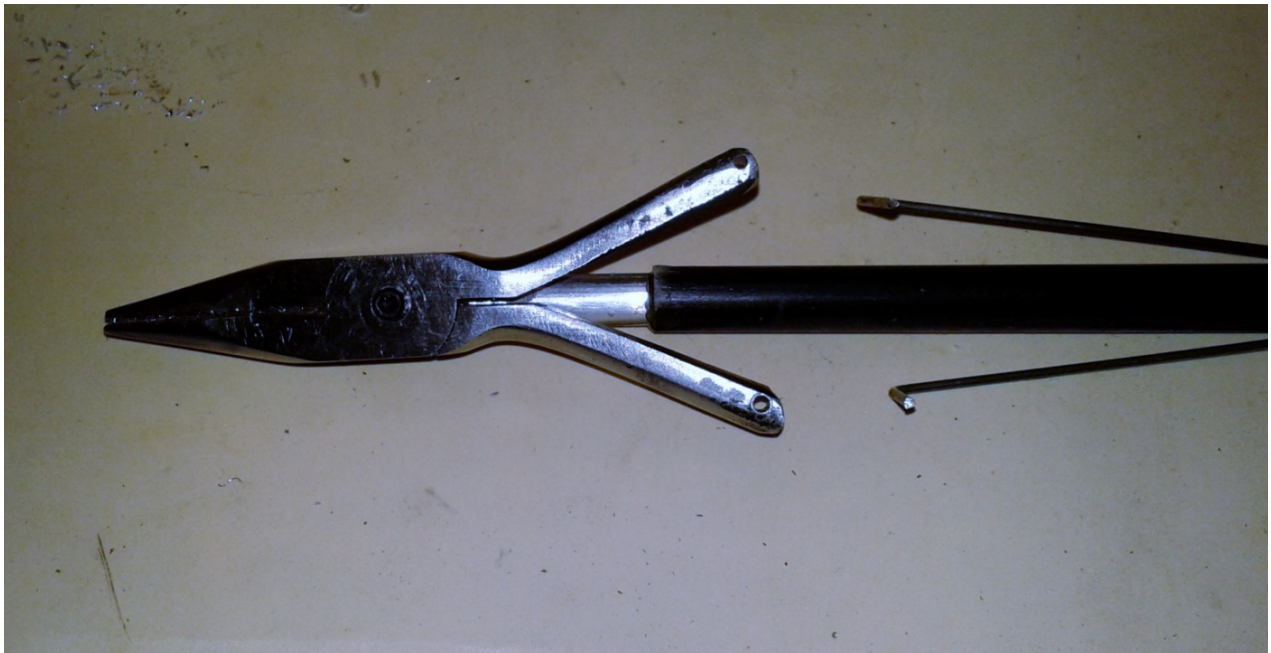


Photo 14: Glued it in the tube. Then I inserted some music wire into the slots in the tube and bent the ends at 90 degrees.



Photo 15: Put the rods into the holes in the handle and...

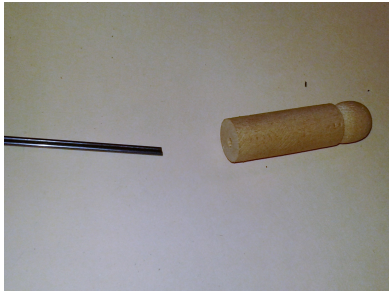


Photo 16 and 17: ...went way down to the other end and made a simple handle out of a dowel and...

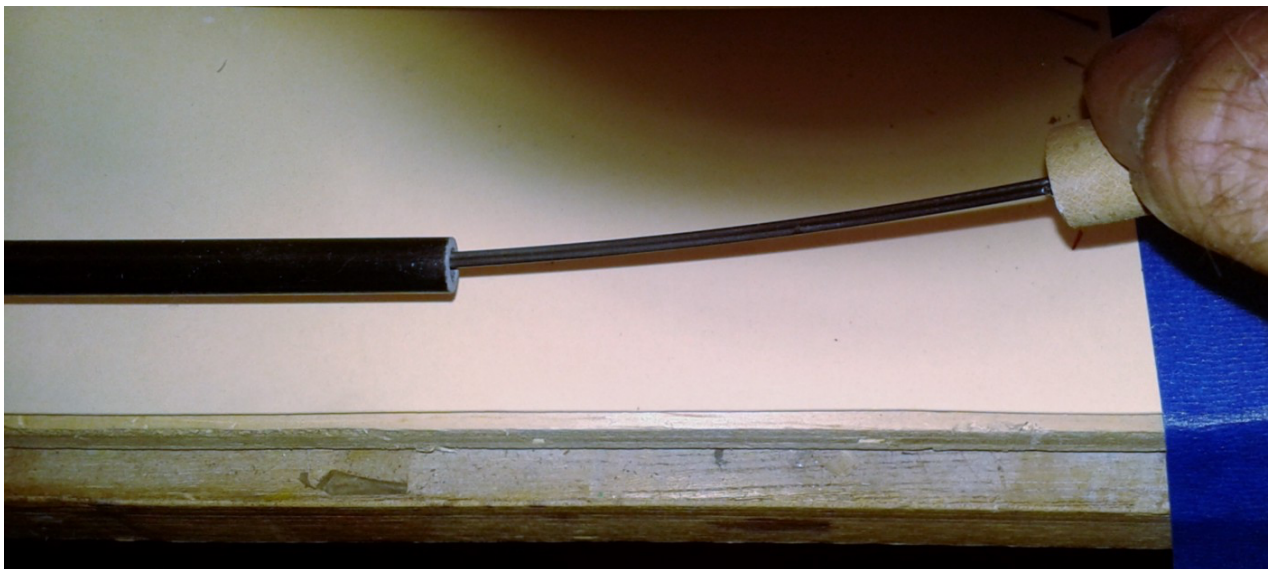


Photo 18: ...glued it on.



Photo 19: Left plenty of rod out the end so it could flex if necessary.

And there it is. It worked amazingly well. 45 minutes work — that I wish I had spent years ago when I was building (and repairing) a lot of planes. Here's how I used it to repair an Aquila XL fuse.

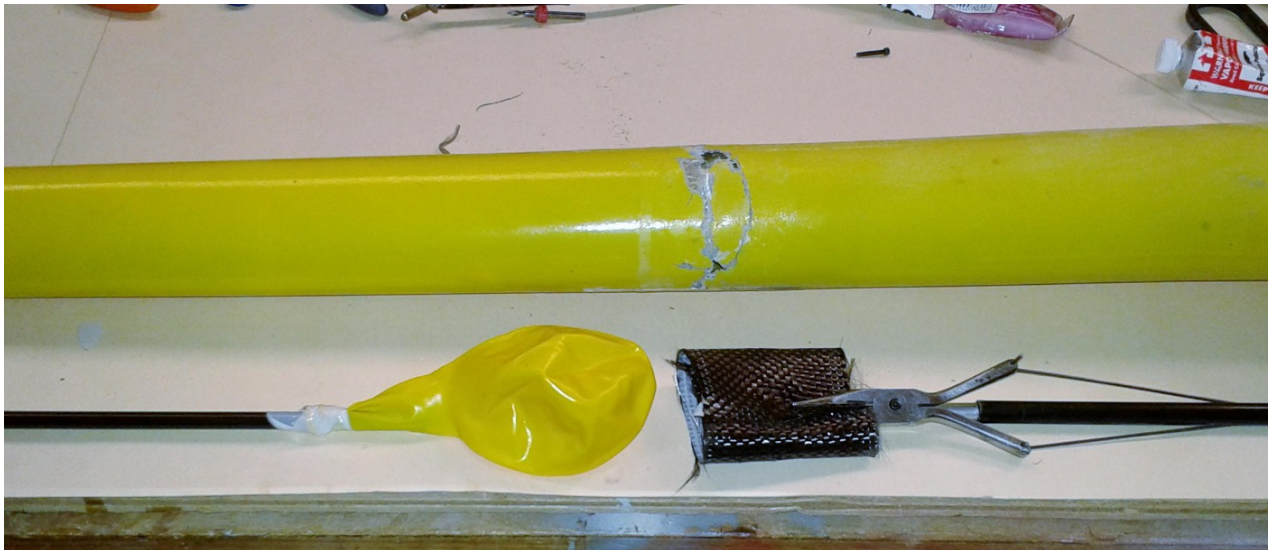


Photo 20: Long reach pliers and a tube with a balloon.



Photo 21: Marked where the pliers and cloth should end up.

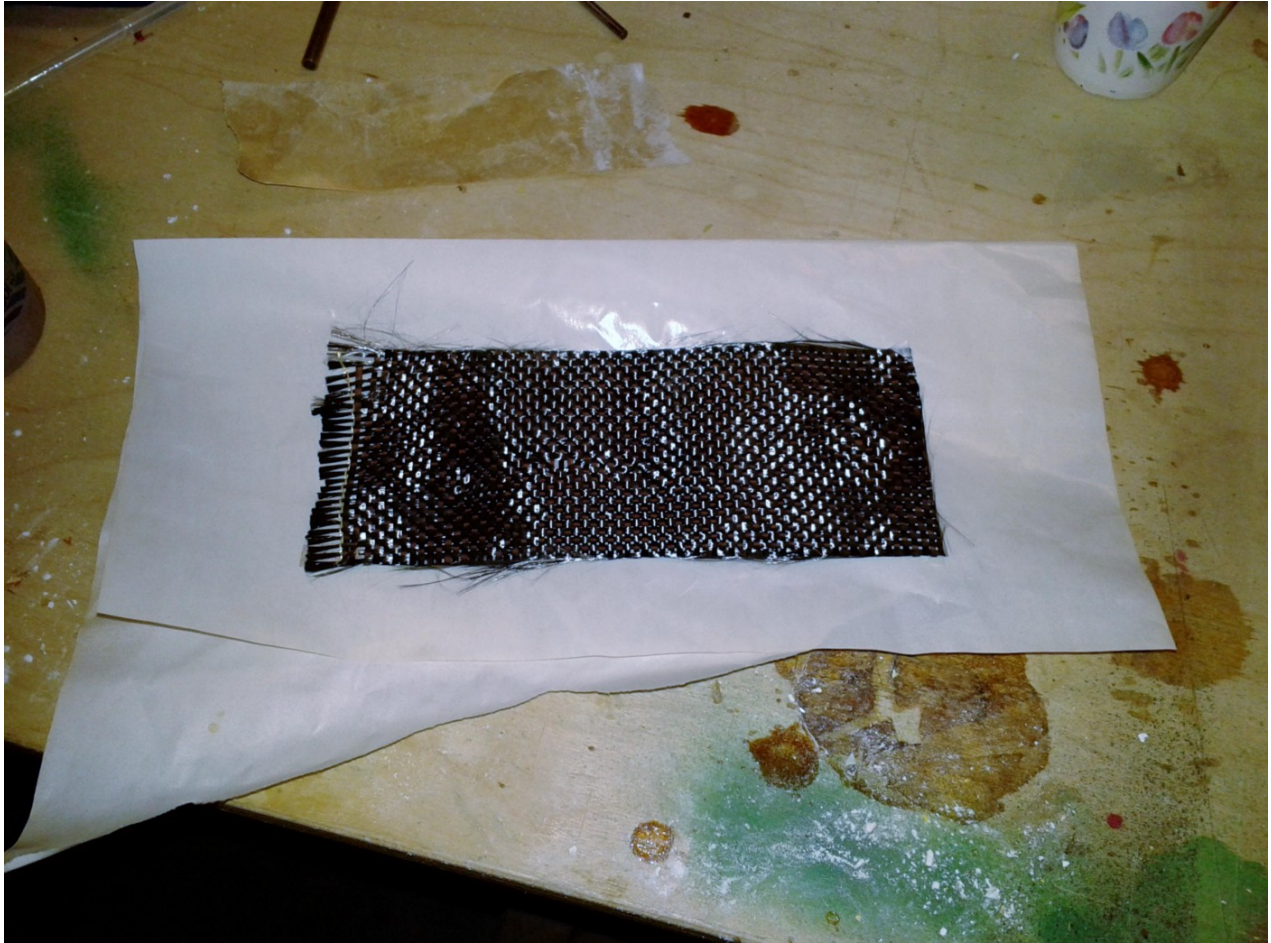


Photo 22: Cut and wet out a piece of carbon cloth.

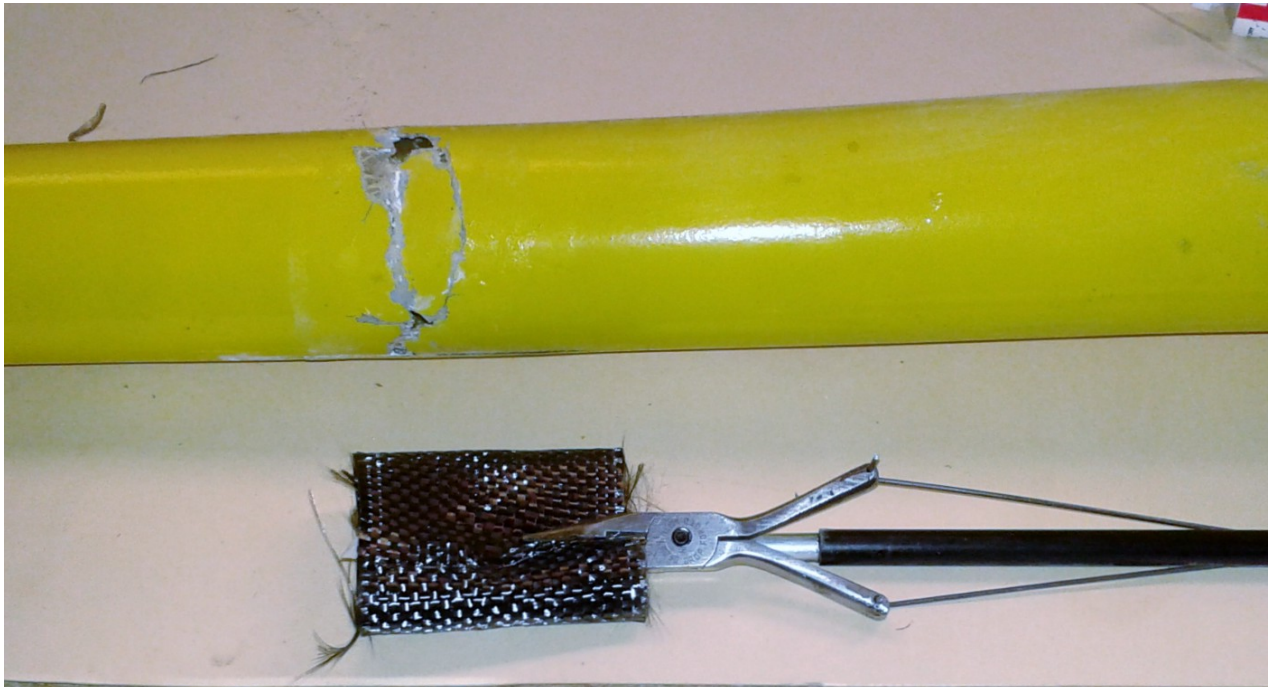


Photo 23: Rolled it and grabbed it with the Extra Long Reach Pliers.



Photo 24: Stuck it down in the fuse and released it.



Photo 25: Put a little extra epoxy in the big holes. I had dripped in some extra epoxy before running the cloth in also.



Photo 26: Ran the balloon in to the right spot and blew it up gently. Then blew hard to pop it and pulled it out. I did it again with a surgical glove since I ran out of balloons. I left it in until the epoxy got tacky and then blew until it popped and pulled it out.



Photo 27: The nose on this Aquila was fuse totally demolished, but I managed to put Humpty Dumpty back together again. After some sanding and filling, the fuse came out great.

'Til next month!

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