

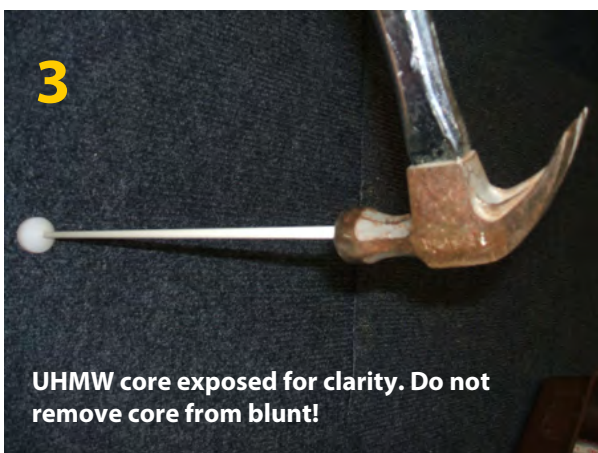
## BUILDING MISSILES WITH STAR BLUNTS - NOTE THAT SOME PHOTOS MAY STILL DEPICT FATHEAD BLUNT

**REQUIRED TOOLS & MATERIALS:** A marker, ruler, scissors, hammer, suitable work area and **PATIENCE**. Everything else is in your kit.

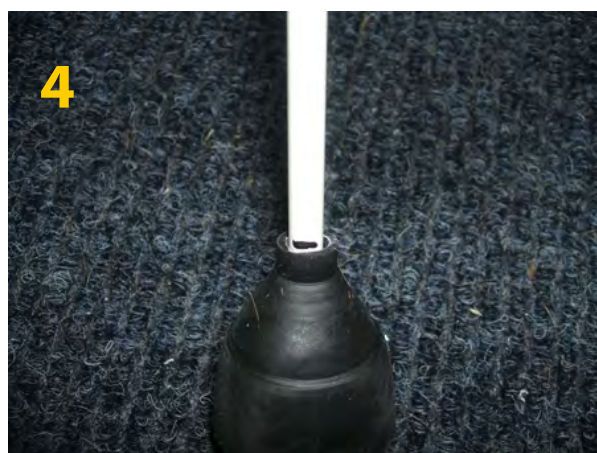
**FOR BEST RESULTS:** Please understand that this is **NOT** a one-day procedure. Take your time and do it right. Make sure you allow 7 days drying time after you glue on your APDs. Your shafts have already been sanded and cleaned with acetone, but if you see any dust, just give them a quick wipe with a clean cloth.

**A NOTE ABOUT DURABILITY:** We are often asked how long assembled missiles should last or why a particular arrow or bolt was damaged or failed inspection after its first battle. The only way to answer these questions is to set proper expectations. First and foremost, SCA combat is a full-contact and aggressive hobby in which thousands of people with different equipment, training and sensibilities take the field in a wide range of environmental conditions and smack each other around. A fully armored fighter averages about 250 lbs and we've personally witnessed mutants pushing a quarter of a ton. Add the speed, adrenaline and "fog of war" common in a typical battle and you've created a destructive environment for gear. The Society Marshalate has gone to unbelievable lengths to ensure your safety. Decades of testing and scrutiny have defined the materials, assembly methods and testing procedures for each piece of equipment taking the field. The products in this kit and the assembly instructions herein represent the best possible balance between safety, performance, durability and practicality of manufacture. **Your missiles are NOT made of closed-cell Unobtainium.** They will wear out and they will get damaged. Some may be irreparably damaged during their first use when the aforementioned quarter ton charging Duke of Destruction stomps on your lovingly crafted combat missile. Such is the price of war... By assembling this kit, you acknowledge these risks and agree that NorthStar Archery, the Society, the Marshals and your fellow fighters cannot be held responsible for damage incurred. Broken shafts (virtually unheard of), crushed or split APDs (common), peeling tape (inevitable) and damaged blunts (rare) are all possible. Damage may also be incurred during inspections. Although there will always be reports of heavy-handed Marshals tearing heads off, remember that they are just doing their part to keep you safe. If you are uncomfortable with the potential monetary loss of a few missiles during battle, **STOP NOW**, repackage the kit and shoot it back to us. We will happily refund the original purchase price minus shipping. If, however, you can't wait to experience the thrill of taking down Sir Uglystick from a comfortable range where he can fully take in your child-like grin and happy dance, then proceed fellow leveler of the battlefield!

**1) ATTACHING BLUNTS:** Inside the Star blunt is a UHMW (Ultra High Molecular Weight) core. It is a very dense plastic and has a  $\frac{1}{4}$ " diameter hole into which you need to insert your  $\frac{1}{4}$ " diameter shaft. You will need to **POUND** the shaft into the hole of the UHMW core. The tolerances require the shafts to be hammered in. **It is critical that you pound the heads on BEFORE installing APDs.** Your shafts are beveled on one end; the other end is cut square. The beveled end is for the blunt, the other end is for the APD. Place a mark  $1\frac{1}{4}$ " from the beveled end of the shaft (**FIG 1**). Place that end in the hole of the blunt (**FIG 2**). The blunt should be placed on a hard surface suitable for hammering. A carpeted floor doesn't work well. Tap lightly, then pound with a hammer on the other end of the shaft (**FIG 3**) until your mark reaches the blunt (**FIG 4**).



UHMW core exposed for clarity. Do not remove core from blunt!



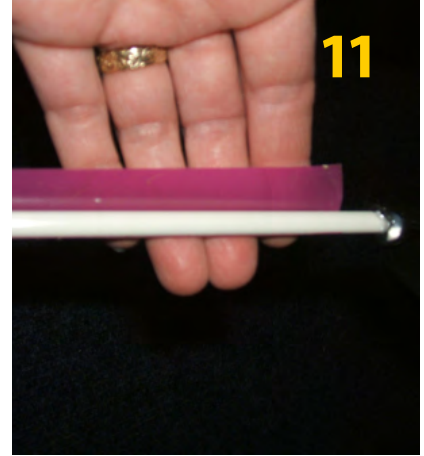
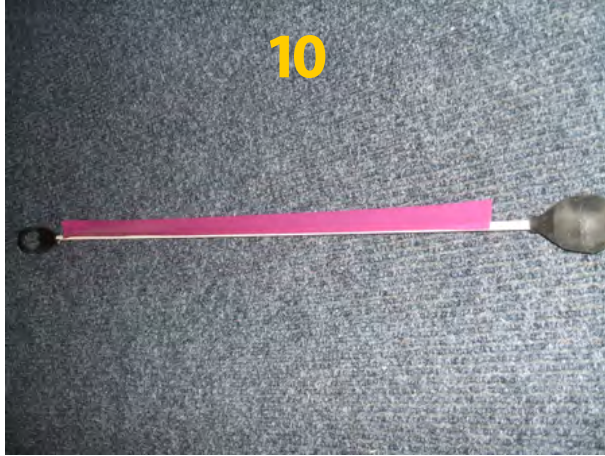
**2) WARMING THE APD:** If the APD end of the shaft has spread because of the hammering in the previous step, lightly sand the edge to bring it back to the right size so the APD will fit. **Do not reduce the shaft diameter with sanding unless it's absolutely necessary as described at the end of step 3.** APDs for arrows have a splitnock, while those for bolts have a solidnock. The shaft holes of the APDs have already been roughened by NorthStar for better adhesion. The hole in the APD is ¼". The shaft you are placing into that hole is ¼". The plastic APD will need to expand just a little as the shaft is inserted. This is made easier if the APD is warm. Holding them in your hands for a couple of minutes, placing them in the sun, placing them in a tied off pillow case and running them through the clothes dryer on low heat or using a hair drier on low heat are all suitable methods for making the APDs slightly more pliable for this step. Don't put them in hot water as water trapped inside the APD will undermine glue adhesion. **Don't put them in the oven, blast them with a heat gun or use a lighter or other open flame. Such methods will bubble, melt, ignite and otherwise irreparably damage the APD.** They just need to be about 85F. If you are assembling your missiles at a backyard BBQ in July in Arizona, you can probably skip warming them up. If you are assembling them from inside your ice fishing tent on Lake Winnebago in January, then warming the APDs will be crucial to prevent the plastic from splitting during shaft insertion. An air conditioned home is generally enough justification for warming the APDs first.

**3) ATTACHING THE APD:** Use the GOOP glue as a lubricant to get the APD to slide on. Put a generous amount of glue over the shaft hole of the APD (**FIG 5 & 6**). **Push the shaft slowly (REPEAT - SLOWLY) into the APD until it touches the bottom of the hole.** Push hard! Twist the shaft to distribute the glue evenly. Be careful not to damage thenock when you push the APD onto the shaft. I do this by placing the large round hole of the APD on the table withnock off the edge of the table (**FIG 7**). The fiberglass shaft will be vertical while you push the APD onto it. The APD fits the 1/4-inch diameter shafts very snugly. So snugly, that the shaft will push almost all the glue down to the bottom of the shaft hole. There is a small weep hole at the bottom of the shaft to allow excess glue to come out. You must push the shaft in hard enough to get the glue to distribute between the shaft and the APD. **Glue will suddenly spurt out of the weep hole, so cover up that nice dining room table and floor you're working on (FIG 8).** Getting GOOP adhesive out of carpeting is icky. Learn from my experience. Trust me yet again. After gluing, let it set for seven days without moving it. Yes, I really mean seven whole days. Learn from my experience. I have had APDs ready after 2 days, but not always! After seven days test the APD to make sure it is secure. Test it by grasping it and trying to pull it off. If you can pull it off or twist it around the shaft, re-glue it. If it's really, really, really hard to push the shaft into the APD, try warming them immediately before inserting (See step 2). As a last resort, you can sand down the shaft diameter **VERY SLIGHTLY**. The fiberglass is easy to sand with coarse sand paper or a concrete block or a rock. You are going to hate doing this because the fiberglass dust is nasty and itchy. Don't breath the dust; don't touch your face or eyes with hands that have the dust on them. After you are done sanding, wipe the shaft with alcohol to get rid of the dust and oils.

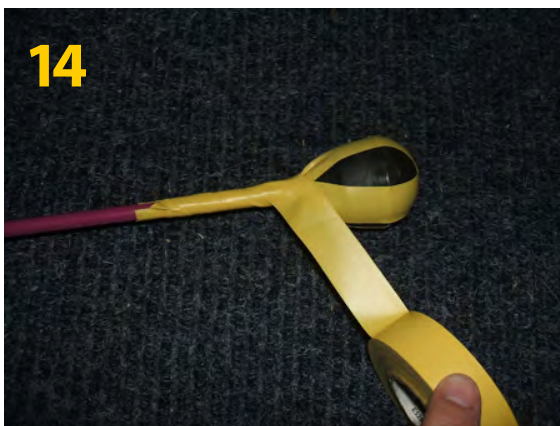
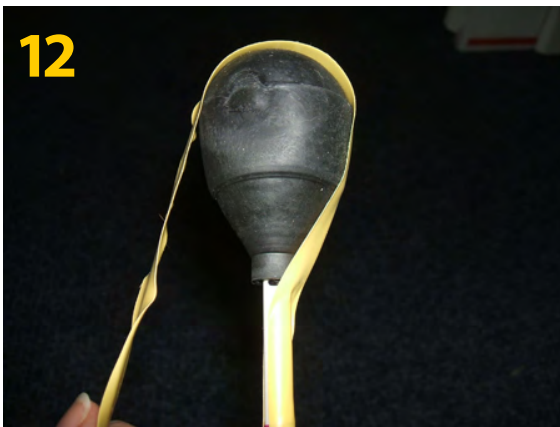




**4) TAPE AND LABEL THE SHAFT:** Tape the shaft between the Blunt and the APD. This takes time and care. Cut a piece of tape the needed length. Lay one long edge of the tape carefully lengthwise down the shaft. Get that one edge of the tape, the long edge, stuck onto the shaft straight before proceeding (**FIG 9 & 10**). Roll the shaft a little and then push down the tape lengthwise. Do this in increments. Each time you push down on the tape, you will stick a little bit more of the tape to the shaft. Roll the shaft, push down on the tape lengthwise, roll the shaft, push on the tape, roll, tape (**FIG 11**)... The colored tapes stretch a bit after you pull them off the roll. Allow the length to shrink back to size for a couple of minutes before you stick it onto the shaft. Midrealm allows only 1" wide strapping/fiber tape on the shafts. **West Kingdom requires electrical tape on the shafts.** When taping is complete, you must label your shafts with your name and kingdom for SCA combat. **Midrealm and Pennsic War require pre-printed labels, not hand written.**



**5) TAPE THE STAR BLUNT:** Place a piece of tape (8 to 10 inches) over the top of the blunt and down the sides of the shaft (**FIG 12**). Another piece of tape needs to go around the shaft to cover the ends of the tape that went over the head of the blunt (**FIG 15 - 17**). Some kingdoms have a rule that two pieces of tape need to go over the top of the blunt (**FIG 13**). Better check with your local authority or better yet, just use two pieces of tape over the top. You have enough tape in your kit. Yea, just trust me. You may use strapping tape over the heads and then cover it with electrical tape. I like to use 1/2" strapping tape covered with 3/4" electrical tape. **For Midrealm's special rules, please read [35footspear.com](http://35footspear.com).**





**6) TAKE CARE OF YOUR MISSILES:** You just put an awful lot of work into your arrows/bolts. Please take good loving care of them. **After shooting, you MUST inspect them.** Even if someone else has inspected them after a battle, you need to re-inspect your own arrows again. Do not shoot them again if you find any kind of damage, or if the Blunt is not seated or taped correctly. Arrows, like other weapons, need attention and up-keep. You will need to fix and re-tape them occasionally. Inspect them between battles and when you get them home. Don't wait until it's time to take them back out onto the battlefield to inspect them. **Don't store your arrows in a shed or car where the temperature is uncontrolled. Extreme temperatures will make the tape come loose.** I find this makes the arrow inspectors grumpy.

**7) BE RESPONSIBLE AND HELP ME OUT:** **Society and Kingdom rules are always evolving.** Hopefully these instructions do not conflict with any rules, but you better check for yourself. If you find any problems with these instructions as they relate to your Kingdom, I would love to hear from you.

Thanks for purchasing your combat archery equipment from NorthStar Archery!

Shoot Straight!

Sir Erika Bjornsdottir (mka Linda Archer)

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**NORTHSTAR ARCHERY** • 11717 SW 99th Ave • Gainesville, FL 32608 • 352-219-1706 • [www.northstararchery.com](http://www.northstararchery.com)

