

# How to Make a Bowie Knife Sheath

By Mike Zaccardi

a.k.a.

Powderburns

**Introduction:** This tutorial is intended for use by the Mesa District Varsity Scouts and Leaders who are preparing to attend the **Mogollon Mountain Man Rendezvous** held biannually at Camp R-C on Christopher Creek East of Payson, Arizona. These instructions will help you build a leather sheath for a knife. The pattern can be changed to fit your personal knife. The example knife is a large Bowie knife blank model # BL7891 also known as pattern #7. **These knives are not intended to, and should not, be used at other Scout functions, other than at the Rendezvous as a part of your regalia.**

## Safety Message:

- The knives that you will be using to cut the leather are VERY sharp. Keep your fingers clear of where you are cutting. Cut small areas at a time. Do not cut towards your body parts. Be careful picking up the knives. Always put them back in their designated place. Use the knife guards when ever not in use. Do not dispose of used or dull blades, since they are still very sharp. Place them in the film canister labeled “used blades”.
- The needles are also sharp and in some cases you may have to exert considerable pressure on them to get through the stitching holes. Keep your fingers out of the way.
- Keep your fingers and loose clothing away from the drill press or other power tools. Use the clamps to hold the leather in place so you can keep your fingers away.
- Keep your work area clean and organized and always return the tools to their proper places.



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## Tools Needed:

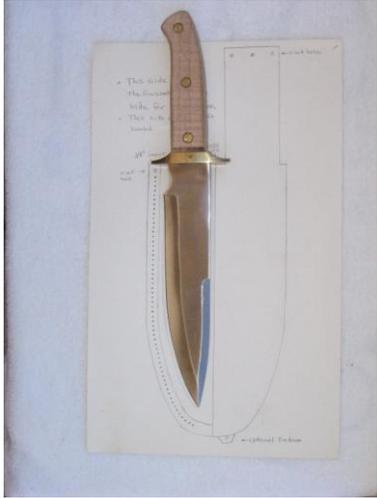
- X-acto Razor knife or rotary cutter or scissors to cut leather
- Scissors to cut paper pattern and leather
- Copper rivet and burr setter #12 (Tandy # 8110-01)
- End cutting pliers or nippers to trim rivets (Channellock 7" model 357)
- Leather V-gouge (Tandy # 8082-00 or 31811-00)
- Leather rotary hole punch (adjustable sizes) (Tandy # 3220 or equivalent)
- Leather overstitcher stitch guide (6 stitches per inch Tandy # 8079-06 or 5 stitches per inch Tandy # 8079-05)
- Metal plate to set rivets (~ 4"x4"x1/4")
- 4 C-clamps (1-2 inch) to compress sheath & welt while rubber cement dries.
- Rawhide or poly mallet to tool leather (Tandy # 3301-04 or equivalent)
- Metal Hammer to set rivets
- Lockstitch sewing awl (Tandy # 1216-00)
- Sewing needles (Tandy # 1191-11)
- 1/16" (0.0625") drill bit for Harness needles size 0 use the 6 stitches per inch overstitcher
- 5/64" (0.0781) drill bit for stitching needles (Tandy #1195-00) use the 5 stitches per inch overstitcher
- Drill press to drill stitching holes
- Sanding disc, drum sander, or belt sander (~120 grit) to smooth edges of sheath.
- 6" pocket ruler Cen-Tech 93684 (Harbor Freight) and/or small compass to set stitch and tooling lines.
- Two 1/8" thick hardboard strips of wood cut to the dimension of the welt to hold the sheath edges while rubber cement dries.

## Materials Needed:

- Sheath pattern
- Vegetable tanned tooling leather (6-7 oz or about 0.108")
- Pencil to sketch pattern
- Leather boot lace about 18" long
- Leather adhesive or rubber cement (Tanner's Bond Tandy # 2526-01)
- Waxed thread (about 60") (Tandy # 11207-03 about 0.042" thick)
- Leather dye (Eco-Flo or Fiebing's dye)
- Wool applicator for leather dye Tandy # 3443-00 or 3445-00)
- Leather conditioner (Eco-Flo Satin or Super Sheen or Fiebing's Leather Balm or Tan Kote)
- 5 #12x1/2" copper rivets and burrs (Tandy # 11280-01)

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## Step-by-Step Instructions:

Step	Description	Illustration
1	<p><b>Prepare the pattern:</b></p> <ul style="list-style-type: none"> <li>• Use an 11x14 sheet of heavy card stock or manila envelope. Fold the paper in half the long way. Place the tip of the knife about 1.5 inches from the bottom of the paper and about 1/8 of an inch to one side of the fold. Trace around the blade, guard, and handle. Trace one line 1/2" from the knife edge. Trace another line 1/8" from the knife edge. The outer 3/8" strip is the welt that will protect the stitching from being cut by the blade.</li> <li>• Fold the pattern in half, place over a piece of glass, place a light below the glass, draw the outside edge of the sheath on the other side of the paper. You now have the actual sheath outline.</li> <li>• On the top of the sheath, measure in 5/16" from the center line on the opposite side of the sheath from the blade outline. Repeat the 5/16" measurement in from the outside of that same side. This defines the belt loop width. Draw two parallel lines about 4" long. Identify 3 rivet holes at the end of the belt loop spaced about 1/4" from the end of the loop.</li> <li>• Make a copy of your original pattern. Cut out the welt pattern.</li> </ul>	
2	<p><b>Transferring the pattern to the leather:</b></p> <ul style="list-style-type: none"> <li>• Carefully select a spot on the hide that is at the edge of the leather that makes the most efficient use of the leather. Do not start in the middle.</li> <li>• Lay your pattern down facing up on the finished side of the hide if you want a right handed knife sheath or one that can be used as a cross-draw sheath for a right handed person. Turn the pattern over on the finished side of the hide for a left handed sheath.</li> <li>• Hold the pattern firmly down and sketch along the outside of the pattern using a pencil.</li> <li>• Mark the five rivet holes at this time with a pencil or fine tip permanent marker.</li> </ul>	

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3	<p><b>Cutting out the main sheath leather:</b></p> <ul style="list-style-type: none"> <li>The leather tong tie down at the bottom of the pattern is <b>optional</b> and is there to attach a leather strip to tie to your leg so that the knife does not get in the way (or to just look cool).</li> <li>Place the area to be cut over a cutting mat. Hold the Exacto razor knife like you would a pencil and very carefully cut the pattern out. Other options are a rotating cutter or a heavy duty pair of scissors. Make the knife safe. Be careful not to slip while cutting with the knife and injure yourself or ruin the pattern/hide.</li> </ul>	
4	<p><b>Mark the gouge line down the middle of the sheath:</b></p> <ul style="list-style-type: none"> <li>Turn the hide over so that the unfinished/rough side is up. Place the sheath pattern on top of the rough side of the hide. Mark the top and bottom of the V-gouge line with the pencil. Lay a straight edge over the two marks and draw a line between them. Use the V-gouge to carefully cut about 1/3 of the way through the rough side of the leather along the V-gouge line.</li> <li>Option: wet the middle of the sheath with water. Bend the sheath over, align the two edges, clamp the bend with small clamps till the leather dries. Use small pieces of wood so the clamps do not mar the leather.</li> </ul>	
5	<p><b>Mark the V-gouge line on the belt loop:</b></p> <ul style="list-style-type: none"> <li>Measure and mark a V-gouge line 1/8" and 1/4" across the belt loop from the top of the sheath on the finished side where the belt loop starts and will be folded over.</li> <li>Cut both V-gouge lines across the belt loop about 1/3 of the way through the smooth side of the leather. These V-gouge lines will facilitate the leather bending over for the belt loop.</li> <li>Option: wet the part of the belt loop that will be folded with water. Bend the belt loop over and clamp the bend with small clamps till the leather dries. Use small pieces of wood so the clamps do not mar the leather.</li> </ul>	
6	<p><b>Cutting out the sheath welt:</b></p> <ul style="list-style-type: none"> <li>The welt or insert is a strip of leather that is sandwiched between the top and bottom parts of the sheath and protects the stitches from being cut by the knife edge.</li> <li>Lay the welt pattern along one side of the main sheath cutout on the finished side of the hide and carefully outline the welt pattern.</li> <li>Place this area over the cutting mat and using the Exacto knife, rotating cutter, or scissors, carefully cut out the welt.</li> </ul>	

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Step	Description	Illustration
7	<p><b>Mark the stitch line</b></p> <ul style="list-style-type: none"> <li>• Mark a faint line 3/16" from the outside edge of the sheath on the side opposite the belt loop on the smooth side of the hide.</li> <li>• Mark a rivet hole 3/16" from the top of the sheath in the middle of the welt.</li> <li>• Starting just beyond where the head of the rivet will be, use the leather stitch guide to mark the stitch locations along the faint line 3/16" from the edge of the sheath where the welt will be. If you are using larger needles that require the 5/64" stitch holes use the 5 stitch per inch overstitcher.</li> </ul>	
8	<p><b>Tool the leather</b></p> <ul style="list-style-type: none"> <li>• If you want to tool a pattern on the front side of the sheath, now is the time to do it. Decide on the pattern, obtain the tools, layout the pattern, moisten the leather and tool the leather.</li> <li>• You can tool both sides of the sheath and the belt loop.</li> <li>• Allow leather to dry before applying leather dye.</li> </ul>	
9	<p><b>Dye the leather</b></p> <ul style="list-style-type: none"> <li>• Select a leather dye color. Using a swab, evenly dye the finished leather sides plus both sides of the belt loop.</li> <li>• Dye the inside one inch of the rough part of the top of the sheath so it will appear finished when viewing from the top.</li> <li>• Allow dye to dry as indicated on the bottle. Repeat to improve consistency or to darken color.</li> </ul>	

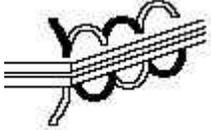
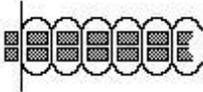
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Step	Description	Illustration
10	<p><b>Attach the belt loop</b></p> <ul style="list-style-type: none"><li>• Using the rotary hole punch or a individual hole punch to punch out the three holes for the belt loop on the body of the sheath.</li><li>• Push three copper rivets through the holes with the flat head on the inside of the sheath. Fold the belt loop over onto the rivets. Position the flat part of the rivet on the metal plate on a solid surface, place a copper burr on the shaft of the rivet. Using the rivet and burr setter, drive the burr down securely on the leather. Use the end cutting pliers or nippers to trim the end of the rivet down to about 1/8". Use the rivet head rounder to set the rivet. You may need to strike it more than once to set the rivet using a metal hammer. Be careful not to bend the rivet.</li></ul>	

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11	<p><b>Attach the welt</b></p> <ul style="list-style-type: none"><li>• If you want to attach fringe to the sheath, select an appropriate weight and color of leather. Cut the welt pattern in the fringe leather so it can be stacked on top of the welt leather.</li><li>• Assemble the welt, rubber cement, cotton dabber, three C-clamps, two 1/8" wood welt forms, 2 copper rivets and burrs, rivet setter, rotary hole punch, metal plate, and hammer.</li><li>• Punch the rivet holes on the top and bottom of the top layer of leather in the middle of where the welt will be.</li><li>• Carefully lay the welt along the inside top edge of the sheath. Mark the rivet holes in the welt and punch them out.</li><li>• Rough up the finished side of the welt with sandpaper to improve the bonding with the cement.</li><li>• Put on latex or nitrile gloves so your hands don't get gooey.</li><li>• Apply rubber cement sparingly to both side of the welt and both edges of the inside of the sheath where the welt will be. Allow the rubber cement to dry to the touch. This will depend on the temperature but is usually 5-10 minutes.</li><li>• Sandwich the welt between the folded sides of the sheath. Insert the two rivets with the flat end on the front side of the sheath. This will hold the welt in place.</li><li>• Ensure that the welt is aligned and even with the edge of the sheath. Clamp the two wooden welt forms in at three - five places along the welt. Allow to dry 1-2 hours.</li><li>• Use the rivet setter to set the two rivets along the welt when you get the clamps on. Repeat the rivet setting process from step 10 above.</li></ul>	  
12	<p><b>Drill the stitch holes</b></p> <ul style="list-style-type: none"><li>• Ensure that the edges of the sheath are lined up. Support the backside of the sheath on the drill press table with a piece of wood so that it is horizontal and the holes will be drilled evenly through the leather. Your main concern is the belt loop.</li><li>• Chuck up either a 1/16" or 5/64" drill bit in your drill press (depending on what size sewing needle you are using). Use the smallest drill possible. Adjust the drill press table so your bit will be very near the leather so you can line up the holes easily. You may have to add a light nearby to clearly see the hole locations.</li></ul>	

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13	<p><b>Stitch up the sheath</b></p> <ul style="list-style-type: none"> <li>You can use a sewing awl (awl-for-all model see <a href="http://www.awlforall.com">www.awlforall.com</a> ) and use the lock stitch that it is famous for. Follow the sewing instructions packaged with the awl or on their web site.</li> <li>Or you can use the stitch often referred to as the double needle stitch, double running stitch, or saddle stitch. You will need at least 60” of waxed thread and two needles for this sheath that will accommodate the thread.</li> <li>Thread a needle on both ends of the waxed thread. Then starting at the bottom of the sheath, pull the thread half way through the hole. The two threads pass each other through the same holes in the leather as shown.</li> <li>Keep the thread and stitches tight by pulling on them at each stitch. Continue to the top of the sheath.</li> <li>Finish the stitch by going back through the last 2-3 stitches. Then tie the two threads off on the back side of the sheath with a square knot and trim the excess thread.</li> </ul>	  <p>Double running Stitch</p>  <p>Stitch cross-section</p>
14	<p><b>Even out the welt edge of the sheath</b></p> <ul style="list-style-type: none"> <li>Carefully sand down the edge of the welt so the three layers of leather are even. The stationary belt sander or drill press mounted sanding drum work great for this. You may have to use a little sandpaper for tight areas that you cannot get to with the belt sander.</li> </ul>	
15	<p><b>Dye the edge of the welt and apply leather finish.</b></p> <ul style="list-style-type: none"> <li>Using the wool dauber, dye the edge of the welt. Allow the dye to dry.</li> <li>Apply a finish treatment to the dyed leather. Eco-Flo Satin or Super Sheen or Fiebing’s Leather Balm or Tan Kote work well. Buff with a soft cotton cloth to bring out the shine.</li> </ul>	

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16	<p><b>Attach the leather tie down</b></p> <ul style="list-style-type: none"><li>• Under normal conditions this knife will stay in the sheath due to gravity. However, it is recommended that you use some type of retention system to keep the knife secure in the sheath. A simple way is to use a piece of leather boot lace or latigo lace.</li><li>• Punch an appropriate size hole in the top of the belt loop near the back of the sheath. Insert a piece of lace about 18-24" long. Tie a knot on the end of the lace to keep it in the belt loop.</li><li>• With the knife in the sheath, wrap the lace around the handle above the brass guard about 4 times then tuck the end of the lace in a simple clove hitch to finish it.</li></ul>	 A photograph showing a red leather sheath for a Bowie knife, a metal handle, and a piece of orange lace being used to secure the knife. The sheath is open, and the handle is visible. The orange lace is wrapped around the handle and tucked into the sheath.