The Skew Knife Project

By Steve Watts and David Wescott, 2016

"Ben Hunt influenced thousands – no tens of thousands of people. When you have a person with that much influence on so many people, he's important."

"I made everything I wrote about." Ben photographed the entire process and illustrated the steps. The final drawing would be a sketch of that piece. Now when a kid would want to make one of those same things he would do it in reverse order. He has a drawing so he would have to make a tracing or use a piece of carbon paper to transfer the outline to a block of wood and then perhaps saw it out on a band saw or jigsaw ... So it was kind of the reverse process [from what] Ben used. He ended up with a drawing, whereas if you were going to follow one of his designs, you start out with the drawing.

Sterkow and Zeit, 2012

For this project, we did exactly what any kid would do by looking at the drawings and following the instructions as best we could. But, we also did what Ben would do - we documented the process with photographs to see how it worked, ending up with a finished knife, or multiple test knives, plus whatever flourishes we wanted to add, such as a custom sheath.

The majority of the Hunt projects were copied from museum examples or artifacts found in the ethnographic record. *The Skew Knife*, however came from a specific need that was the result of a particular skill used in the whittling process.

What Is A Skew Knife?

A skew knife is described as a knife that is used for "carving details, feathers, cleaning stop cuts and making vertical cuts. It is also used to mark outlines and detailed cuts, and smooth out surfaces using the tip of the blade." Skew cuts are made with a slicing motion while holding the knife at an angle. Such cuts may include straight skew cuts, rolling skew cuts, slicing skew cuts and combination skew cuts. Modern skew knives offered by carving tool sources are available as blunt or pointed blades, and are much smaller blades hafted in relatively long handles. Ben Hunt doesn't provide any information describing the source or reason for this particular blade design.

Let's get started!

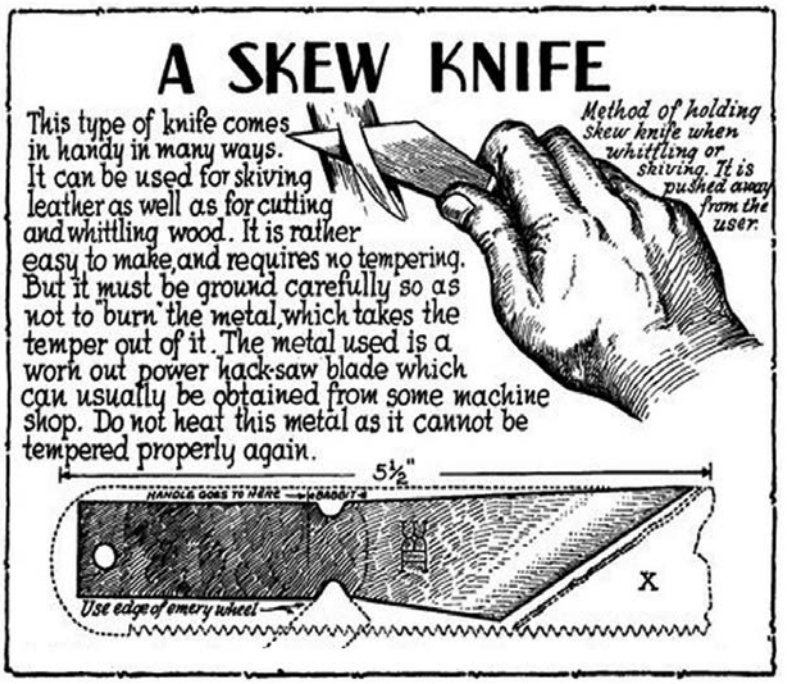


Illustration from *Indiancraft*, 1942.

Steps 1-4: From Blank, to Rough-Out to Blade

An old rip saw works great as a source for multiple blanks. Clamp the saw in a vice and use a sharp cold chisel to remove the blank from the saw blade. The blank can be clamped back into the vice to make a nice clean rolling cut that reduces it to the rough-out stage, eliminating a lot of extra grinding to get the finished blade shape.

There is a slight learning curve to get the chisel to cut a nice clean line, but once you get it, you can cut very close to the final shape of the blade. Be careful not to overheat the tip or cutting edge of the blade when grinding the final shape.

Blank ready for trimming to rough-out stage with pattern.

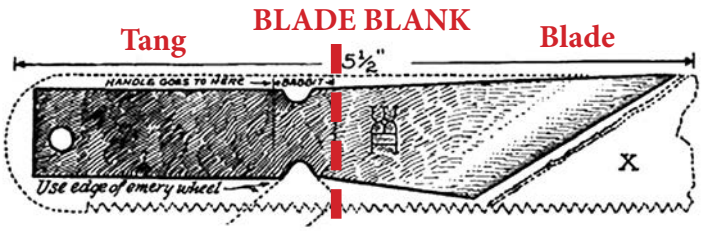
Hold the chisel at an angle so the point of the bevel rides flush with the vice jaws. Use light taps.

To initiate the cut, hold the chisel at a slight angle to the direction of the cut. Holding the chisel at the proper angle is what creates a nice clean roughout.

Creating the Blank - Breaking the blank as suggested on the panel (marked X) is a bad plan when using an old saw blade; it bends but resists breaking. A cold chisel works well but creates a lot of waste when removing the blank from the saw blade source, since cracks have a tendency to run out from the cutline and spoil connecting material. The blank can then be trimmed close to the pattern line with the cold chisel to get it to the rough-out stage - less grinding is needed to produce the final blade.

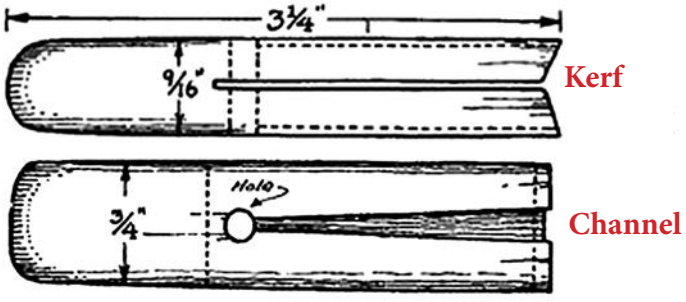
Step 5 - Make the handle of any hard-wood - undercut the channel groove.

- Clamp the handle in a vice and cut the *kerf* with a hand saw.
- Drill the hole (19/64) to line up with the hole in the blank tang.
- Use a knife or box cutter to cut the channel in the handle.

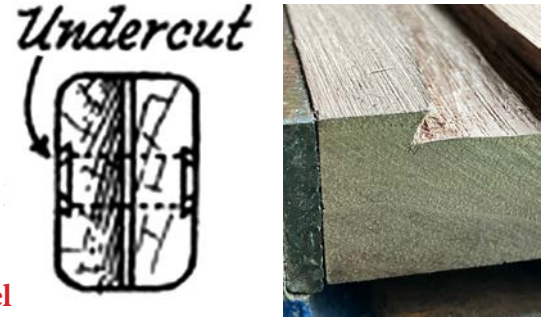


Note: The nicks and hole in the blade allow the pewter to lock the blade securely into the handle.

Top View - The original handle thickness and width seemed a bit small. Cut a handle blank that suits you.



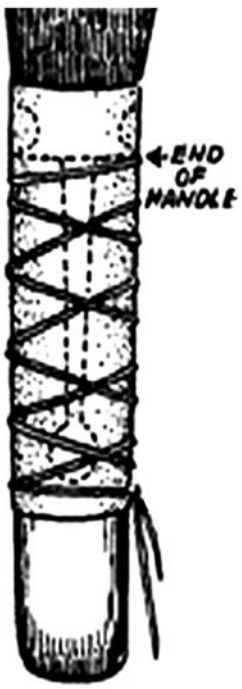
The channel needs to connect to the hole so the pewter flows through it to create a thru-pin.



The beveled undercut holds the pewter in place.

Step 6 - Prepare for casting.

- Wrap with several thicknesses of good wrapping paper as shown and tie with cord - light craft paper works well.
- What? – Molten metal and paper? Ray Bradbury tells us that books will burn at *Fahrenheit 451*. Most papers burn closer to 480-500˚F.
- The paper wrapping should cover the hole and project ½ inch beyond edge of wood handle - see red dotted line above. This creates the bolster.
- Prepare to pour - this was a deceptively simple process.



Illustrations from *Indiancraft*, 1942.

Cutting the kerf. Using a rip saw will create a perfect fit.

Use a knife to carefully cut the channel.

NOTE: Heating the Blade – Annealing - "*must be ground carefully so as not to 'burn' the metal, which takes the temper out of it….. Do not heat this metal as it cannot be tempered properly again.*"

The panel mentions the blade requires no tempering and that you must be cautious when grinding it "not to 'burn' the metal, which takes the temper out." When shaping and sharpening the blade blank on a bench grinder or belt sander, keep a can of water handy and quench the tip of the blade in water regularly to keep it cool – be careful because the tip can burn and discolor in a split second if you're not paying attention.

The hole in the tang and the corresponding hole in the handle are never mentioned, but are key for a solid fit and secure hold on the blade. Hunt never mentions it, but since the blade blank is tempered, it's impossible to drill without annealing the metal. This is done by simply heating the tang of the blank to a cherry red color and then letting it cool slowly. This process removes the temper from that section, so now it can be easily drilled. Be careful to protect the blade from the heat by wrapping it in a damp cloth so the heat remains in the tang area.

Temper is removed by bringing the tang to a cherry red color and letting it cool slowly. The blade is wrapped with a damp cloth.

What Is Pewter - *"Get some pewter or babbit scraps and melt them..."*

The use of pewter dates back to the Bronze Age - over 3000 years ago. It was created as an alloy by mixing copper and tin - more copper than tin got bronze, more tin than copper got pewter. Alloys kept changing, and somewhere in time lead was added. At the height of its use, pewter contained about 70 percent tin and 30 percent lead and was called black metal, as it darkened with age, and the lead leached out when contacted with acidic food and drink.

Pewter was everywhere - through the Middle Ages and Renaissance, tin, lead and copper were England's major export, second only to wool. - but faded from use when ceramic wares replaced it in the mid-eighteenth century. A similar tin/lead alloy called babbitt was patented in 1839 and used mainly for bearings and machine parts, but was also used for household products such as silverware and eating utensils.

Today, pewter may be an alloy of about 90% tin mixed with a variety of metals used to increase its hardness and durability – copper, antimony, bismuth and sometimes silver. The removal of lead from the formula in 1974 makes most products safe to use for eating and drinking.

There is also a zinc-based pewter that is very inexpensive but requires a much higher melting temperature – over 700˚F – so it's not good for this project requiring much lower temperatures to work.

Pewter's low melting temperature makes it perfect for home or workshop casting projects with no need for a foundry. We used a propane or MAPP gas torch to melt it quickly. There are also places that mention melting it on a hot plate, but this was extremely slow and never really worked well (we did not try a gas stovetop). A commercial crucible can be used, but a simple tuna can with a spout crimped into the rim worked just as well.

Completed Skew Knife.

Step 7 - The Pour - What stops most people from trying.

- Use a heavy pair of gloves and eye protection.
- Use a propane or MAPP torch to melt the pewter - look for on-line sources.
- Heat the pewter until it is molten and shinny like mercury.
- Hold the knife upright in a vice and pour down both sides of the blade to fill the hole and channels.

Tuna can with bent spout in the rim works just fine.

Step 8 - Finishing

- Sand the handle and pewter.
- Trim any extra pewter from the bolster area and finish with a file.
- Use your favorite finishing oil on the handle.
- Make a sheath from leather or wood.

Hunt Project Principles

1-A few simple tools
2-Materials easy to obtain
3-Inexpensive to make
4-Projects simple to complete

Rule #1 - A Few Simple Tools

- **Materials Required**
  - Craft Paper
  - Tape / String
  - Pewter
  - Saw Blade
  - Hardwood
  - Sand Paper
  - Oil Finish
- **Hand Tools Required**
  - Cold Chisel
  - Hammer
  - Vice
  - Files
  - Box Cutter / Knife
  - Narrow Wood Chisel
  - Rip Saw
  - Pull Saw
  - Hacksaw
  - Propane Torch
  - Crucible – ceramic or tin can
  - Pliers
- **Power Tool Options**
  - Bench Grinder – Emery wheel and wire wheel
  - Belt Sander
  - Angle Grinder w/ Cut-Off Disc
  - Drill & Bits 17/64 - 19/64
- Expendables
  - Craft paper
  - Tape / String
  - Pewter
  - Saw Blade
  - Wood
  - Sandpaper
  - Oil Finish

The Roycraft / Kochanski Survival Knife

Mors Kochanski was a conduit that the story passed through…The difference between Mors and some of the [bushcraft] followers of Mors is that he had the historical background to go with it…He knew where this stuff came from. **Steve Watts**

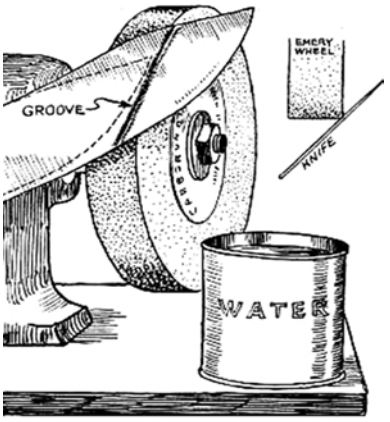
The finished knife from a bandsaw blade. Note the kerf cut part way into the solid handle from a hockey stick, rather than typical half scales. Karamat video photo capture.

Randy Breeuwsma of Karamt Wilderness Ways (center) teaching the survival knife at Rabbitstick, 2016.

Hunt's panel instructions says to grind out the rough blank from a "power hack-saw blade." Since I used a rip saw blade that was much wider than the band saw blade Hunt suggested, I used a cold chisel as I had seen demonstrated with good results by Mors Kochanski, master woodsman and godfather of Northern Bushcraft.

Mors is credited worldwide by popularizing a skill sampler known as the *Try Stick*. He had seen this display of knife skills in an old Boy Scout publication. Knowing his tendency to adapt a good idea to his teaching bag of tricks, one might not be too far off to say that Mors may have been inspired by Hunt's *Skew* and *Camp Knife* panels published in the early 1940s.

Mors grinding the rough blank. Karamat video photo capture.



Always keep water handy for quenching when using power tools. From Ben Hunt's *Camp Knives* panel. *Boy's Life*, July, 1944.

Note: Visit the Karamat Wilderness Ways *YouTube* channel and select - *Survival Knife Making* - for a complete video on Mors Kochanski's process used to create his DIY survival knife, with excellent tips on making the blade and handle. He was able to make 3 per hour this way.