

How I got started: I started carving soapstone at Camp Paradise about 5 years ago. At the carving area, I found a piece of white soapstone on the ground and determined I would carve a bear out of it. For the first 4 days I worked on it, everyone who saw it said, "What a cute pig". Then, on the 5th day, it became a bear.

Camp Paradise in Yuba County has called me back two more times, partially because of its large and varied supply of soapstone, and partly because of the great people I have met there. The area has a complex geologic history, and fortunately, that history included the conditions needed to form soapstone. We have also collected fossils and gold from near the camp.



Pig Bear, Bowl and carved Mushroom

Soapstone properties, origin and history of use: Soapstone is the softest stone known, although the presence of dolomite (calcium magnesium carbonate) can affect the hardness of this material. Native Americans first used soapstone grindings as baby powder, since it is a form of talc. Soapstone is also known as steatite. Talc is a basic magnesium silicate ($Mg_3Si_4O_{10}OH_2$). Among its properties are heat retention (high grade steatite is used for insulators), toughness, and softness that leads to relative ease of carving. The material is dense due to its high magnesium-iron content.

Egyptians carved figures and bowls of soapstone to be put into the tombs of pharaohs 3000-4000 years ago). Soapstone seals of Indian origin have been found in Bahrain and Ur. Paleo-Eskimos mined the stone to make bowls and lamps on the Baie Verte Pen-

insula 1600 years ago. Native American Indians throughout North America carved soapstone into ornamental and utilitarian pipes, bowls, utensils, and other implements.

I enjoy the material for its ease of carving and finishing, as well as the variety of colors that it comes in, even from one location. From Camp Paradise, I have collected red, white, green, golden and brown soapstone. The prettiest piece of material I have collected is from Lotus in El Dorado County, near Placerville. It had sunset orange color patches with green streaks and black flecks, and was just lying on the surface. I carved double leaves out of it, and sent it back to the property owners. They seemed pleased to have it since they did not know that they had soapstone on their property prior to my visit.

Finding soapstone: Soapstone is a ubiquitous material that occurs around the world. I have found it in several California locations, and have made beads from each of these locations for a necklace. Places I have found soapstone are: Willow Creek, and Jade Cove in Monterey County; Camp Paradise, and Reservoir Lake in Yuba County; Lotus in El Dorado County; near Coulterville in Mariposa County; and about 5 miles north of Coulterville in Tuolumne County. I am still looking for deposits rumored to be in San Luis Obispo and Santa Barbara Counties.

I have acquired pieces of the material from near Valley Springs in El Dorado Co., CA (sandy gold); the Pulga River in Plumas County, CA (dark green); Olancho in Inyo Co., CA (white with gray streaks), and southwestern Montana (white material with gray dendrites).

The color of soapstone varies according to location and the occurrence of various metallic minerals in the area. Many minerals mix readily with soapstone, creating the hues and markings that delight the eye. There is dark green and black soapstone from the eastern townships of Quebec, Canada; pale pink and green soapstone from China; and black soapstone from Russia and Alaska. Pyrite crystals (fool's gold) can also be found within the stone showing as golden flecks.

Working the material: While the material is easy to work, it can also be cantankerous. Many pieces of soapstone have fractures that one does not see until he is finishing the piece, then the material comes apart along a fracture plane. While the temptation exists to throw it up against the nearest wall, if the break is clean, it can be successfully repaired by an application of 330 epoxy. Another problem that one can encounter is metal inclusions.



Chess "Knight" and my Logo "WM" with a piece of dendritic soapstone from Southwestern Montana

About 100 yards down from the soapstone location at Camp Paradise, is a creekbed full of hematite nodules. Pieces of this material (iron oxide) seem to have become imbedded in the soapstone, and can be easily detected when carving the soapstone by the grating sound one hears when the file hits the inclusion. Recently, while I was making a pair of chess pieces for a friend, I came across the second biggest metal inclusion I have ever seen, and had to grind it away with my bench grinder before finishing the piece.

What I have made from soapstone: In addition to Native American artifact reproductions, other things I have made from soapstone include a necklace with two beads from every place I have collected, a bear, a bowl, boxes, candlestick holders, and eggs. I turned a knight chess-piece from Soapstone Ridge (Calaveras County) soapstone for myself after making a couple of knights for a friend. I have recently been making initial pendants out of soapstone. The pendants are a bit fragile, but it is not too hard (in more ways than one) to carve intricate designs in soapstone.

Cautions in working the stuff: One caution about carving soapstone, is that it forms a fine, powdery dust that can get tracked in the house and get you in a heap of trouble. It is also wise to protect your lungs from this dust by wearing a dust mask. Although, tests by US Dept of Labor-OSHA report states that soapstone contains no asbestos and a low percent of silica, soapstone and asbestos are in the same family of rocks, and often occur in the same area.

Another caution is that it can be addictive and expensive. While some soapstone can be collected for "free", nice, large blocks of the material from quarries in Canada and the US can go for \$5.00 per pound, and because of its density, a 1-foot square block of soapstone can weigh 95 pounds. No wonder some large sculptures in soapstone sell for several hundred dollars!

Making beads: To make beads, I cut a rectangular solid the approximate diameter of the bead that I want to make. Then I drill a hole in the middle of the long dimension of the solid with my drill press and a regular wood drill bit, then roughly round the pieces with a knife or file. I thread a shaved-down coat hanger in the bead-hole, and hold the bead or beads at an angle against the revolving belt of my belt sander that has been clamped (upside down) in my bench vise. For double tapered beads, you would do them one at a time this way. If you want to make round beads, you can get the cylinder to the desired roundness, then cut it to the desired thickness of the beads, then round them by hand.

By carefully holding the bead on the end of a coat hanger, you can sand the ends of the beads, then finish them by hand with 150, 220, 400, and 600-grit sandpaper.

Tools and tips for working the material:

- To get started, have stone (duh...) paper and pencil for design, scissors to cut out the design, and permanent marker to trace design onto the stone
- Rasp or files of varying coarseness. The coarser the file or rasp, the harder it will be to get the scratches out.

- Short blade knife.
- Hammer and chisels (depending on the size of the stone, and amount of material you need to remove).
- Saws- hack saw, bow saw, box saw, tape wrapped hacksaw blade.
- Sand paper 100-150-220-400-600 grits.
- Watco oil, linseed oil, wax, or neutral shoe polish.
- Cotton cloth (old tee-shirt) for polishing.
- 330 Epoxy for repairs.
- Coat hanger.
- Wire brush to clean files.



Typical Soapstone Carving Tools

Power tools that can help: lathe; band saw; Dremel for details; drill press for "pointing" and bead holes.

Tools for working this material can range from simple to expensive. To carve, I use an old modified (small) hunting knife with about a 3-inch blade. One can also use wood chisels, or make your own small bladed or pointed chisel out of an old screwdriver. I also use files of differing coarseness, and sandpaper of different grits. A small, round, single-cut rat-tail file can be used as a knife by holding the file at a 45° angle and pushing with the upper arm. Once you have the piece in pretty good shape, by gouging, scraping, rasping or chipping, sand with 150, 220, 400 and 600 grits, getting all the scratches from the previous operation out before moving onto the next finer

grit. I also wipe the piece with a piece of soft cloth (like an old tee shirt) between each sanding operation. It is fun to see the piece get shinier and shinier even before the polish step. To polish, I use Watco Danish (tongue) oil and buff with cotton cloth. You can also polish with neutral shoe polish, boiled linseed oil, or wax applied to the heated stone.

Even though soapstone is softer than most wood, you probably want to sharpen your wood bits and saw blades before doing more woodwork. You might also want to wire brush the soapstone out of your rasps and files when they start to clog.

Another cool power tool for working soapstone is the lathe. You can cut a rough rectangle, find the center of each face, shave off the corners, and turn a soapstone cylinder (for a vase, pipe, candlestick holder, or a chess piece) pretty quickly, in much the same manner as one would turn a wood spindle or bowl.

By wrapping Duct Tape around one end of a hacksaw blade, you can create a simple cutting tool for sawing your stone into a basic shape. It is even more effective if you grind or break off the front end of the hacksaw blade. This will give you a cutting edge to the very front of the blade. "Stanley" makes a ("mini hack") hacksaw that holds a hacksaw blade by one end, allowing the front of the hacksaw blade access to very confined areas, such as a drill hole.

To remove large amounts of stone, use a saw. I use the bow saw or hacksaw depending on the size of the stone. A "skip tooth" saw blade with half the teeth of a regular blade allows more stone dust to be carried the depth of the stone while you are cutting it. One of the benefits of working in soapstone is that the material readily absorbs heat. This allows the sculptor to use a band saw to cut the stone. The stone will absorb a large portion of the heat generated by friction. The heat absorption keeps the steel of the saw teeth from burning, however, the teeth of the saw blade will still wear. (Remember; the Native Americans were able to carve intricate pipes and bowls out of soapstone using sharp

pieces of flint and polishing their crafts with sand!)

Carving: I believe that the idea for a project has to come from the mind of the carver. It will be a great deal easier if the carver can visualize the finished idea in the rough stone. Great carvers have said that the figure was always in the stone, all they had to do was take away everything that was not the figure they imagined. This is easier said than done.

To carve an odd shape like the big horn sheep illustrated below, start with a rectangular piece of soapstone larger than what you want to carve. Try to make sure it is relatively free from flaws, especially fractures. This can be done by filing off all the rough areas before you start working the piece, or if you have enough material, by cutting the soapstone into a rectangular solid larger than the finished piece will be. Draw a front and side view of the object you want to carve. Trace these onto your piece of soapstone, and carve away the excess materials. Then start shaping your piece. I have had good luck shaping with files of differing coarseness. Modified dental picks often come in handy for detail work.

When using the chisel, limit the amount of stone you wish to remove at one time. There is a grain (and sometimes fractures) to the stone and you could split the stone in two if you are not careful. Remove the broken stone often to give you a better view of the area you are working in. Listen to the stone as you chisel, there will be a distinct difference in the sound of the mallet hitting the chisel when you are forcing the stone. Change the position of the chisel before the stone splits. If you assume the rasp, file or knife is an extension of your arm, you will find that you have a greater control to remove the stone quicker and more effectively. Hold the tool as if you were pointing it. The power of your stroke should come from the upper arm and shoulder. Use the wrist only to position the tool.

Remember the rasp or file cuts the maximum amount of stone during its forward motion. You will also have more control of the cut if you concentrate on the stone you wish to remove.

You may have areas that contain a lot of stone that you wish to remove in the middle of the piece. This can be done by a technique called "pointing". The masters of old would drill hundreds of holes into the marble in places they wanted to get rid of. These holes weaken the stone so it can be easily removed with the mallet and chisel in specific areas.



Wayne helping a young gold panner

Draw a centerline on the carving to help keep the symmetry of the carving as you work. Try to maintain a balance as you carve, it is very difficult to replicate the other side of the carving if you only carve one side at a time.

Carving is hard to teach, but easy to learn by doing. It is a great exercise for hand eye coordination, and it is very fulfilling to take a piece from rough rock to a smooth and shiny piece of art. The time it takes to carve a sculpture is as long as it takes until you are satisfied with your piece.

I hope that you will find carving soapstone as enjoyable as I do. And if you do some carvings from this material, please bring in your creations and share them with us. Everyone has a different idea about what and how they want to create their art, and those ideas can be inspirational to the rest of us. Even if you think your carving is not the greatest, it might fire someone else's imagination.

A good website for soapstone information is: <http://www.sandycline.com/sculpture>