

## **Making Fire with Flint and Steel.**

### **Early Failures**

Many survival or scouting books give different instructions on how one can start a fire with flint and steel. These books suggest various materials that are supposed to catch the spark (punk – the powdery dry rot from the insides of fallen logs, cottonwood fluff, fine dry grass, fine wood shavings, dry moss, and various lichens. The people who wrote those books had obviously never tried it. None of these materials work well, although they all make excellent small kindling once you have a fire started.

### **Problem Solved**

The Oxford Universal Dictionary defines tinder as "*a flammable substance used to kindle a fire, especially charred linen*". When a spark hits charred cloth, it creates a tiny red spot, which slowly grows like a glowing fairy ring. It is impossible to blow out; in fact, the more wind there is the better, as the spark simply gets hotter and hotter. The only way to put it out is by suffocation (which preserves the rest of the charred cloth for future use), or by dousing it with water (which ruins the char cloth). The amazing thing is that charred cloth in windy weather makes it easier to start a fire with flint and steel than a match. Well, almost!

### **Making Charred Cloth**

Here is how to put together your own tinder box, so that you can make a fire the same way that people did two hundred years ago. First, you will need some cloth. Linen is the traditional fabric, but 100% cotton works just fine, and it is a lot cheaper! Do not use synthetic or synthetic blend fabrics. Synthetics don't char – they melt and leave you with a useless mess! Cut the cloth into pieces no smaller than two inches square. It's best to start with patches that are about four to five inches on a side.

Next, you will have to find a small tin can with a tight lid. A small paint tin would work. You will have to punch two small holes – one in the top and one in the bottom of the can. The holes should be less than 1/8" in diameter. You should have two little twigs on hand, about six inches or more in length and whittled so as to fit snugly into the holes you punched in the tin. Some tongs will be needed to remove the hot tin from the fire safely.

Build a fire, and let it die down until you have a nice bed of roasting coals. (You could probably use a charcoal barbecue for this, if it is more convenient.) If this is the first time you have used your tin, put it in the fire to burn off any paint or oils that might be on the can. If you don't, these materials will ruin your first batch of char cloth. When the tin is black with peeling paint, take it out of the fire, let it cool, and brush off the ash. You will be left with a dark, mottled steel effect.

Once your tin has been cleaned out, put the pieces of cloth into the tin, and tighten down the lid. Place the tin on or near the coals, and watch it carefully. The secret to charring cloth is that the chemical transformation of the cloth occurs only in the absence of oxygen. If air is present, then the cloth will not char; instead it will burn to ashes and be useless. As the cloth heats up, it gives off volatile gasses which rapidly fill the interior of the tin, driving out the air. These gasses are then vented to the outside of the tin through the tiny holes in the top and bottom. You will see these hot gasses ignite when they hit the air, and tiny jets of flame will come out of both ends of

the tin. A lot of smoke also comes out of the holes of the tin, and this is what you must watch for. When the volume of smoke dies down, turn the tin over. This will ensure even charring of the cloth and will usually cause an increase in the volume of smoke. Once smoke has ceased to come out of the holes, the cooking process is finished. Using your tongs, pull the tin out of the fire and immediately plug the two holes with the twigs. If air gets into the tin while it is still hot, then the cloth will burn to ashes. Set the tin aside and wait ten minutes for it to cool before you open it.

### **Problems Encountered when Charring**

Properly charred cloth should be a uniform black. If there is still color left in the fabric, then you did not cook it for long enough, or the tin was not hot enough. Putting it back in the fire to cook some more yields an inferior product. You should start again from scratch. The cloth should not be sooty, although the pieces next to the holes in the tin tend to be so. The cloth, although weak, should not disintegrate, fall apart under its own weight, or be ashy. Properly charred cloth requires a gentle force to tear it, and it should not leave black marks on the fingers when handled. If this happens, then you have over-cooked the cloth, or air got into the tin either during or after cooking. When cooking, heating the tin beyond a very dull red can lead to over charring. The tin only needs to be hot enough to induce the smoke to flow from the holes. Although it sounds like it might be difficult to get it just right, it really isn't. Just wait until the smoke stops flowing from the holes, wait maybe thirty seconds longer just for luck, then plug the holes and you will get a usable product. The length of time that it takes to cook varies depending upon the amount of cloth that you have in the tin. If you do about a dozen pieces at a time in a small tin, it will usually take about five minutes to cook. Never time it; always go by watching the smoke.

### **Generating Sparks**

To use the char cloth, you need to generate a spark. You will need a length of hard high-carbon steel. Use the bare steel handle of a metal file. Other types of steel are generally too soft to produce a good spark. Fortunately, old steel files are relatively easy to find. For flints, you can use flint, jasper, and chert. You can obtain these materials from a rock shop or lapidary supplier (supplies artists who work in stone). Hold the flint in one hand, and strike a downward blow with the steel. When you can hear your sparks fizzing as they fly, you know you have achieved your goal!

### **Creating a Flame**

The first time you attempt to make a fire, place a nice nest of small kindling on the ground. Select a nice piece of char cloth for tinder, and place it on top of the "nest". Hold your flint over the cloth, and strike away! When a spark has been caught, pick up the nest of kindling, and fold it around the cloth. Hold it above the level of your face (to avoid getting smoke in your eyes) and blow gently. Within a few seconds, your bundle should burst into flames.

Once you have had a little practice, you can try another method which is great if the ground is snowy or wet. Take your piece of tinder and fold it down to a compact square. Place this on top of a flat flint so that the edge of the tinder is right next to the edge that you are going to strike. Hold the flint and tinder tightly with your thumb, and strike. The tinder catches a spark. Folding a piece of tinder this way is also a great way to increase its heat, which really helps when your small kindling is shavings or thin sticks that you have split from your large kindling with a knife.