LEARN TO MAKE FIRE

OR DIE IN PLACE

An evader's ability to produce fire at will can literally mean the prevention of death or disfigurement. Not to mention the ability to make water potable and signal SAR assets. Many of the cadre carry different fire starters that are virtually waterproof and foolproof. From mini blowtorch lighters to commercially produced flint rods and steel. And all of those have back-ups to the primary. FRONTIER FIRESTATERS by DONE-RIGHT Mnf. seems to be the most popular throughout the group. As every instructor points out in his class, a POW escapee will probably be without any man-made fire producing devices after escaping. So, every possible survivor should master at least one primitive fire building method. To date the easiest method that we have found to teach military personnel with no training is the "bowdrill." The principles of fire by friction are very simple. Most students still have preconceived notions that it takes years of training under a Native American medicine man to learn how to "make fire." This of course is not true. The most important part of the process is the selection of the right types of wood for the parts of the device. It can be considered an art form, but it is still based all on scientific principles. Just the simple step by step rules of building a fire can evade many highly trained individuals.

One of our instructors once watched a high speed, highly respected, hard to the bone sergeant try to start a fire with a magnesium trip flare that burns at 5000 degrees. After all the smoke

cleared he and his squad was still without a fire. And it was in a pine forest on a dry summer day. He later went on to SFOD Delta and became the youngest man to ever make it in. We won't mention his name or unit because we admire him for the professional that he is and he is a true killer of the enemies of our country. But, he still probably can't build a fire all these many years later. Why ? Because like most warriors he envisions that his enemies will be conquered by bullets, blades and high explosives. The fact that he may find himself battling forces greater than man (like frigid cold, wet hypothermic conditions) are not on the radar screen. To most military personnel and worst yet their officers (who should know better), the field is all about camo face paint, shoot-move-communicate, MREs, map and compass, and humping great big mule sack rucks. To them living off the land, wilderness adaptation skills and fighting with blade and pistol is what Jeremiah Johnson is all about, not the modern military man. Survival skills, adaptation skills, primitive living skills or emergency survival skills, what ever tag line you want to place on it is an important part of every soldier and Marines arsenal of knowledge. Because it will bring him home to fight another day. It is a historical fact that can not be denied. Hand to hand combat is just as important as reading a CEOI. And knowing how to build a fire in any terrain or climate is just as important as knowing how to rig your pro-mask. Enough said.

Some Fundamentals

Knowing the process of turning a small flame from a match into a large flame of a campfire is all about the using "patience" and going in the right order of advancement (for all of you

military types). The first piece of the construction process is the most important and that is the "tinder ball."

Tinder ball- is a baseball sized mass of fluffed up, dry plant fiber in most cases. It is built by collecting dried plant or clothing fibers (dry grasses or weeds, dead pine needles, shredded cedar or birch bark, lint from clothing, shredded cloth, very thin ripped up cardboard strips, paper strips, mouse's nest, thin dry wood shavings or combination of all of these). The only plant material that makes a poor tinder material is leaves (a lot of smoke and low temperature flame). If the climate is wet (after it rains etc.) look for dry tinder material under logs or up in the trees themselves. Even under wreckage or bushes. The tinder must be dry, dead, and combustible. To fluff plant material, start by ripping and twisting it over and over. Until the fibers are exposed and soft to the touch. The ball should not be packed tightly, it needs air inside of all of those fibers. Place the tinder ball on a dry fire site, on top of a bed of flat sticks

or rocks. Protect it from any type of precipitation. Then start collecting your first pile of lumber the thickness of matchsticks or thinner.

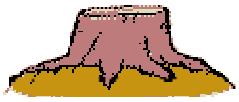
Match sticks- a large hand full of twigs that are preferably dry and dead and thin. If your tinder ball is dry and large enough it can dry out damp matchstick twigs (not soaking wet). Start leaning these twigs around the tinder ball just like a teepee (hence the name teepee fire). Two massive hand full's of these twigs are good to have by your side when a novice is starting a fire. Now, start collecting pencil sized dry sticks (we call it lumber instead of sticks, but that's another story).

Pencil sticks- The pencil sticks should be a couple of inches longer than the matchsticks. Start the teepee process, but don't get carried away. One every 1 - 2 inches around the teepee is good. The fire must have air to feed the flame. Most colleges have a fire fighting class of some level. They teach that because fire needs air to live it is a living being. What does that mean ? Don't smother the beast before you bring it to life. Now, collect lumber the diameter of broomsticks.

Broom sticks- the broomstick lumber is laid off to the side until the fire is burning hot. Now, apply your fire source (match, flaming tinder from a bow drill ember, flaming tinder from a flint rod sparking, lighter, etc.) to the bottom side of the tinder ball. The flame should spread throughout the tinder ball creating a super heated mass, which ignites the matchstick twigs and so on. IMPORTANT: if you see smoke rising from the tinder ball and the tinder ball fibers are igniting, but without good flame, it needs air. Turn your head sideways get

close to ground level and blow right into the burning embers in the tinder ball. Sometimes it takes some huffing and puffing to get it cranking.

That is the bare boned basics of starting a fire. Reading about it and just getting out there and practicing is two different things. Practice in all types of weather conditions. One last hint for starting fires in the rain in a pine forest. When there is a forest fire pine tree stumps and remains are left behind. The sap in those stumps and attached root systems turns to turpentine. Many times you may just see an old dead, green moss covered, stub sticking out of the ground. Kick it and work it loose, then pull it up roots and all. Other times a large black and molded stump may be sitting there. Cut into any of these types of lumber and you will smell that strong turpentine vapor. This stuff will burn in the rain. This wonderful product is called Lighter Knot. For years one of our cadre carried a snuff can full of lighter knot shavings that he collected from the Fort Benning School for boys and the criminally insane. Ten years later he opened the can, the shavings were still potent.



ALTERNATIVES TO MATCHES

BOW DRILL- The bow drill is one of the time honored and easiest primitive methods of fire production. The skill of mastering the bow drill is in the selection of the wood used for the fireboard and friction shaft. And the all-important notch cut in the fire socket is another detail

of great importance. A "feel" for the technique will come with practical application in the field or back yard.

FIREBOARD- The fireboard is constructed from a "medium" wood. Meaning not oak (hard) and not pine (soft). More in the line of ash, poplar, cottonwood, maybe cedar, etc. Then collect a good thick dry limb (2 - 3 inches in diameter) and split it with a knife, down to a flat thickness of ½ - ¾ inch. About 12 inches long if possible.

FRICTION SHAFT- The friction shaft is a dowel made from the same wood as the fireboard. About 6-8 inches long and ½ to ¾ of an inch in diameter. One end is blunt shaped and other end is sharpened with about a 1½ - 2 inch taper, but is still blunt as well. When

carving the shaft it should not be smooth and rounded. More of an octagon-ish shape with plenty of ridges.

HAND SOCKET- The hand socket is usually made out of a hard wood or a smooth rock with a depression in it. The hard wood version is a block of wood that fits comfortably in the hand. A small hole is begun in the middle with a knife. The bluntest end of the friction shaft will begin twirling a socket hole in this small starter hole.

BOW- The bow limb is a dry stick that will bend, but not break. About 24 inches long and ¾ of an inch in diameter. Tying a length of cordage from one end of the bow limb and wrapping it around the other end forms a miniature bow. This tying method should be able to hold the bows shape but be easy to adjust the tension on the bow without untying knots. Military 550-LB cord with the inner lines cannibalized out of it works very well. Most any cordage can work, some better than others.

TINDER BALL- The tinder ball is an important part as well. It should be very dry and fluffed very well. Again the tinder ball is very important to the success of the fire making process. The finer and dryer the material used the better. (lint, shredded cedar bark, cloth fibers, fine dead grasses etc.)

- Start by carving a very small hole about a 1/8 inch deep, ¼ inch round, ½ inch from the edge of the end of the fireboard.
- Place the friction shaft's long tapered end into the small starter hole. Put one turn around

the friction shaft with the bowstring. Fit the hand socket on the top end of the shaft.

- Slowly work the bow back and forth, exerting very little pressure on the hand socket. The ends of the friction shaft will slowly bore holes into the fire board and hand socket. Once the holes are established stop.
- Now with a knife start at the edge of the fireboard and carve a "V" notch into the middle of the new fire socket (see illustration).
- On the under side of the fireboard carve a dished out area 1 ½ inches wide, and 1 inch under the fire socket, but no more then a ¼ inch into the thickness of the board. This is the tinder pocket.
- The fireboard is placed over the tinder ball right at the tinder pocket. The tinder should only be half covered with the board. Or you can skip the tinder pocket step and lay a piece of flat bark down to catch the ember and move it to the tinder ball.
- The friction shafts end that fits into the hand socket should be greased. It can be run through the hair or along side of the nose for natural grease. Oil or grease from wreckage can be utilized as well.
- Set up the apparatus and begin to smoothly manipulate the bow back and forth. At first it will move freely and then the two materials will start to work together. It will start to feel very gritty like sandpaper twisting in the fire socket. Do not let the friction shaft stop moving at this point.
- As soon as smoke appears speed the motion up. This is the magic moment when the shaft must not stop. If you get tired slow the motion but do not stop. Black dust will start to form in a pile this is where the ember will be found. When the pile starts to smoke it is a good sign that an ember has formed.

- (10) Slowly remove the apparatus and curl the tinder ball around the ember. Gently blow on the ember making sure that it is touching the tinder ball material.
- (11) Don't be afraid to start new fire sockets on the fireboard. As you are working the friction shaft it may be worn smooth. A little work with a knife will bring the ridges out again.
- (12) As the process wears on the bowstring it may become loose. To deal with this just hold the bowstring between the index finger and thumb as you move the bow. Push down on the string with your thumb and pull up with your index finger, this tightens the string.
- (13) The wrist of the hand that holds the hand socket should be held against the shin of your closest leg.

WORKING THE MACHINE

The bow drill can take much time and effort to master or just a short time. There are many elements that contribute to the end result. Once the survivor masters the art, it gets easier every time after. Remember a large part of the process is the selection of the lumber and getting the feel for the pieces as they are worked. If all of that scares you, maybe you should pack more butane lighters.