

# Getting the most from

# NATURE

# 3

by Mike Jarman

## The Background

For the human race, the ability to light fire on demand was one of the most significant developments in our history. It enabled us to spread across the globe and rise to become the preeminent species on the planet. It represented an incredible quantum leap forward in our development and yet this pivotal discovery is often undervalued by today's society. Why? Because today, firelighting is an everyday and easy occurrence. We have matches, lighters, gel, blocks ...an amazing array of paraphernalia, all with the sole purpose of lighting a fire. And yet, take all these aids away and we are left in exactly the same situation that our ancestors found themselves, so many thousands of years ago – how to light fire, just by rubbing sticks together.

Several different methods of friction firelighting developed over the millennia, from the fire plough to the bow drill. The most sophisticated and mechanically superior way of lighting a fire by friction methods was, and still is, that of the Bow and Drill. It represents the pinnacle of friction firelighting and was used for literally thousands of years by our forebears as one of their principal ways of lighting a fire, since it is the easiest and most efficient of all friction firelighting techniques.

To light a fire this way represents a much deeper level of firelighting skill on your part. It breaks the complete dependence on firelighting aids that most people have and puts you in a definite minority – those who can light fires using just natural materials. Above all else, it develops your confidence and ability to thrive in adverse situations. This is the reason why the bow and drill was used for so many thousands of years and continues to be taught in survival schools around the world today.

## The Bow Drill Set

The bow drill set can be made of many different types of wood and, once you have a good technique, it can be fun to experiment and see which woods work with others.

However, the purpose of this article is to get you to make your own set and have a go, so I am going to be very prescriptive. Collecting the woods I mention will give you the very best chance of succeeding!

## The Drill

Make this from a piece of dead standing hazel (*Corylus avellana*). It needs to be a maximum of thumb thickness and as straight as you can find. It should be 8 inches or so in length. Using a knife, carefully take off the bark and smooth the drill as best you can. Round one end to a blunt point and sharpen the other end to a point. Once made, keep it dry!

## The Hearth Board

There are 3 woods you need to concentrate on and you should try collecting them in the following order;

**Ivy (*Hedera*)**

**Lime (any of the *Tilia* family)**

**Sycamore (*Acer pseudoplatanus*)**

The board should be approximately 12 inches long, 3 inches wide and ½ to ¾ inch thick. The most important measurement here is the thickness – it does not want to be any more than ¾ inch thick. If it is, you may well find that as you start to drill deeper into a hole in your hearth board, you encounter an exhausting level of friction from the sides of a fire hole that actually prevents you from getting an ember.

Again, it should be made from dead standing wood. The best wood to find is a dead branch that has little or no bark left on – this is absolutely ideal. You should just be able to press your thumb nail into the wood to leave a mark – if it's softer or more rotten than this, you may find that you will just drill straight through the hearth board without getting an ember. Again, keep it absolutely dry.

## The Bow

A piece of wood, approximately thumb thick and gently curved. It wants to have a little flex in it but not too much. My bow is

made from oak (*Quercus*) but pretty much any wood will do. The length of the bow should be from your armpit to your fingertips. A good tip is to have a fork at one end – this makes putting your bow string on much easier.

## Hand hold Device

This is a device that comfortably fits your palm and that holds the drill in place while you bow back and forth. It is important that this is neither too small nor too large. Too small and you will burn your fingers on the string or drill. Too large and you will not be able to get a good grip on it.

It can be made from many materials but I find a hard or resinous wood to be good. My hand hold device is made from Scots Pine and I have found that the resin in the device creates a glaze after a period of time. This glaze helps the drill to turn smoothly.

## The Bow Cord

Our ancestors would have used a length of animal pelt or rawhide, twisted into a cord and tied on. For ease, I suggest using a length of good quality nylon cord. Authentic parachute cord is very good. It must be tied on at exactly the right tension. Too slack and the bow will move but the drill won't turn. Too tight and the drill will keep flicking out of the hole in the hearth board. Trial and error will let you know when you get it right, as the drill will keep turning, even when you press down fairly hard to generate more friction.

## Getting Started

Although initially friction firelighting with a bow and drill can seem very difficult, it is actually very simple. Once you have mastered your basic technique, you should be able to get an ember with relative ease. All you should think about is keeping the drill upright, keep the cord in the middle of the drill and use the full length of the bow cord. If you can do this, you are at least 2/3rds of the way to achieving an ember.

Remember also that our ancestors learned firelighting at their parents' knee and they

The end that fits into the hearth board - blunt for increased friction



The end that fits the hand hold device - sharpened to minimise friction



How the notch should look on your hearth board



Ivy hearth board, hazel drill & Scots Pine hand hold device



The complete set, ready to go



# FRICITION FIRELIGHTING WITH BOW AND DRILL

became proficient through repeated practice. Compare this to trying on your own and it is easy to see why this subject in particular, out of all the wilderness skills, is often best learned on a course. Once you become proficient at it, it is actually relatively simple and you should be able to easily light a fire in under 60 seconds.

The secret to becoming proficient at the bow and drill method of firelighting is actually very easy if you concentrate on just 3 things. These are ...

## **Selection Of Wood**

## **Good Technique**

## **Perseverance**

The first thing to do is to carve in a shallow depression in your hearth board. This is where the drill will sit as it spins and where your ember will be created. The depression needs to be carved about 1 inch from the side and must be big enough for the drill to sit in. Once you have carved a suitably sized depression, attach the drill to your bow and bow until the hole is smooth, round and the drill sits comfortably. Now you have to carve in a notch. This needs to be approximately 1/8th the size of your hole and extend from the side to the centre of your notch. To put that into plain English, just think of cutting a piece of pie from the edge of the hearth board to the centre of the hole that is the size of the hole. When this is carved, string your drill on your bow, place a thin slice of bark underneath your notch and get set to make fire!

## **MAKING FIRE**

When learning to bow, your technique is all important. The irony is that many beginners I have instructed over the years have suffered from smoke madness - the moment they see smoke starting to emerge from the notch, they focus so intently on getting an ember that their technique goes to pot, a frenzy of erratic bowing results and they mostly fail.

The easiest way I have found over the years to remedy this problem is to tell them to try and NOT get an ember. As crazy as that sounds, I tell everybody we instruct in bow drill

firelighting to time themselves for 2 minutes as they gently bow away. By concentrating on keeping the cord running in the middle of the drill and using the whole length of the cord to spin the drill, they are actually maximising their chances of success, making the most effective use of the bow and are keeping control of the drill. Mad, frenzied bowing means the drill is often not working as effectively as it should and it is absolutely exhausting.

As a rule, we have found that concentrating on keeping the cord spinning around the centre of the drill and using the longest possible strokes tends to ensure success within 2 minutes. The most surprising thing for many people is actually how easy it is to succeed when all they do is concentrate on good technique and use a good quality set.

A word of caution. As with all things in life, it may not always work first time. I have used sets where one part of the hearth is excellent and a few centimetres to either side is rubbish - you could drill to Christmas in these parts and not get an ember. I have had the cord snap just at the point where an ember is about to form, my bow snap when putting a drill on the cord, the board snap and so on. All of these must be taken with a smile on your face. It makes success all the more rewarding.

And finally, it is important to stress that to become good at bow drill firelighting, you have to put in time 'at the coal face'. When you start trying to light fires this way, you will have successes and failures. As you get better, the failures will become fewer and fewer. My experience in bow drill firelighting has taught me one thing above all others - the theory of bow drill firelighting is sound but sometimes the practical may prove a little more difficult. Success is entirely down to perseverance.

## **Getting From An Ember To Fire**

There will come a time as you bow away that the smoke is coming thick and fast from the notch. Count an extra 20 good strokes from this point and stop. Carefully lift the drill and bow away and examine the notch. If the smoke is continuing to rise, you have created

an ember that now has a life of its own. If the smoke stops, go straight back to bowing away as you are nearly there.

If the smoke is steadily rising, use a very thin stick to gently prod all the black dust or char from the notch onto the thin slice of bark and stand up. This is the time to admire your handiwork, taking care to protect the tiny ember from any strong gusts of wind. There is no need to rush into action either - you have created a small ember that will grow in size if you sprinkle any extra char on top. By doing this, the ember will grow in size and be better able to light your fire.

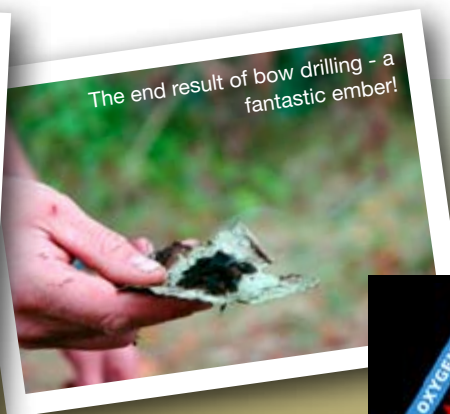
When your ember is as big as it is going to get, carefully transfer it into the centre of a 'birds nest' of dry grass. Now comes the moment of truth. Carefully press the sides of the bird nest, so that the ember is in direct contact with the grass. Blow onto the ember with a long slow breath, all the while maintaining a gentle pressure on the grass against the ember. As the ember glows red hot, it should ignite the grass next to it. It is a good idea to practise this method with pieces of lit cramp ball fungus before you try an ember from bow drilling. There is nothing worse than blowing your ember out, having worked so hard to get it!

If you get it right, the grass will start to smoke and will eventually burst into flames. Place the flaming grass on a pre-prepared fire place, add the different grades of kindling (see the previous article for more details) and enjoy the best fire of your life.

To light a fire in this manner is immensely rewarding and connects you with the natural world and with our ancestors' lifestyle in a way that few other activities can. In fact I defy anyone not to have the biggest smile when they achieve a fire in this way for the first time. No matter how many times I light fire this way, it never fails to produce a feeling of great pride and satisfaction. Sitting around a fire that you created literally from your own hard work is hard to beat.



Lots of smoke as a 3 man team nears success!



The end result of bow drilling - a fantastic ember!



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[www.cambriansurvival.co.uk](http://www.cambriansurvival.co.uk)  
[info@cambriansurvival.co.uk](mailto:info@cambriansurvival.co.uk)

