
Electrical Fire Starts

When setting up electrical fire starts, the weight of the wire used to generate heat will depend on the size of the battery you intend to use and the distance between the battery and the ignition device. Practise beforehand will enable you to properly rig your fire start, but, as a guide, use fine wire for a 6 volt battery source. If your power source is a 12 volt car battery a heavier wire will be required.

1] Steel Wool and "D" cell batteries are frequently used in survival techniques as an emergency method of starting a fire. Based on this principal, one camp fire start idea is to use steel wool in the fire lay (surrounded by small dry kindling) remotely attached to a car battery. The battery could be disguised by hiding in a box that would double as a seat for the Campfire Leader, with a switch on the side of the box to complete the electrical circuit and start off your fire.

2] A variation on the above involves a little more creativity with the electrical connections. From the disguised car battery/campfire seat, you'll need 3 electrical circuits and switches. Switch #1 connects to a yellow taillight secured in the fire and hidden under kindling. Switch #2 is hooked up to a two more light bulbs. Switch #3 hooks up to steel wool, as detailed in the previous method.

As part of your campfire opening, get everyone to assist by blowing towards the fire. As they do so, throw switch #1 and everyone should see a yellow glow coming through the fire. Turn off the switch after a second or two.

Obviously not everyone was helping or blowing hard enough, so get them to blow again. Throw switch #2 and a stronger light will be seen in the fire. Turn the switch off after maybe five seconds.

One last time ! Obviously it was the Scouters who weren't trying hard enough. As everyone blows hard for the last time, trigger the third switch to set the fire alight.

Remember to pull the lights attached to Switches #1 & #2 out of the fire lay before you set the fire going, unless you want to compete with exploding light bulbs !

3] Take a block of scrap 2" x 4" with a saw cut through the centre line. Two nails are driven in at either end of the block on opposite sides of the saw cut. These nails will provide 'terminals' to hook up to the power source. Insert an uncovered paper match book into the saw cut, and thread a very fine piece of wire through the match heads, connect the wire to the 'terminals'. Attach the wires from your power source also to the 'terminals' after connecting them through some switching mechanism. When a current is passed through the wire, heat will be generated which will ignite the matches and then set off your campfire kindling.

4] Take a bunch of friction type matches and secure with a rubber band. The bigger the bunch, the more spectacular will be the fire start. Then take a metal spring from a spring-loaded pen and stretch this spring to be slightly larger than the diameter of your bundle of matches. Lay the spring through the matches, so that it is touching the match heads. Place this bundle on kindling in your fire lay.

Remotely attach a battery to the ends of the spring wire, through a switching mechanism. At the correct time, throw the switch and the spring will generate electrical heat which will ignite the matches.

5] This next idea builds on the previous one, but requires a little more creative electrical and carpentry skills. Once you've set it up, however, it could be either your primary fire start method or a back-up method if "Plan A" fails.

Take a piece of deadwood about 5-6 feet in length and at least 1 1/2 inches in diameter at the base. Carefully drill a hole vertically into the base, of a sufficient depth/breadth to hold your battery power source. Run wires (covered where exposure is not necessary) from the battery up the outside of the staff, with one of the wires going through a simple switch set at about the 4 foot mark. The ends of the wires should be stripped and terminate about 8-10 inches below the top end of the staff. Wrap several layers of dry flammable material around the first 8-10 inches from the top of the staff, secure with wire.

Just below the flammable material, tape an open book of matches and run a fine wire, from the wires attached to the battery/switch, through the match heads.

Hold the staff away from your body - yeh, really this is a good idea ! - and trigger the switch to light the match heads which will then catch the flammable material. Your flaming torch can then light the campfire. Since you always keep a bucket of water near your fire, extinguish the torch after use and it'll be able to be used again.

Chemical Fire Starts

In the fire lay, place a pre-prepared piece of 2 x 4 wood, with four 6 inch nails driven partially into it. Between the nails, on the wood, place a small aluminum tart cup with at least two tablespoons of Potassium Permanganate (available from most pharmacy's) in it. Supported on the heads of the 4 nails place a second aluminum cup that has had three or four small holes punched in the base. Tilt this cup to one side by placing a twig across two of the nails and then balance the cup so it is supported. In this cup place a quantity of Glycerine (also available from Pharmacy's) - but not enough so that it trickles through the holes. The twig should have a length of fishing line tied to it, with the line stretching away from the fire lay.

By pulling on the fishing line and removing the supporting twig, the cup containing Glycerin will drop to rest horizontally and the glycerine will spread out over the cup's base. A couple of drops will then

fall through the pre-punched holes and onto the Potassium Permanganate.

After a short pause the glycerine will react with the Potassium Permanganate and create a flame which will need to catch your kindling thereby setting the fire lay ablaze.

2] Take a model rocket igniter (available at most hobby shops) and pass the igniter through the inside of a paper baggy leaving two little wires sticking out. Then carefully remove the contents of a "Coloured Flower Bloom" or "Giant Fountain" firework (use only one) and place into the paper baggy.

Attach the clips from a model rocket firing device to the two wires coming out of the baggy. Prepare the mechanism by pulling the safety pin. Then, when you're ready, press the firing button and POOF!, another magic fire start.

The next two ideas are particularly clever, and I'll quote from training material prepared by Bill Glover, DRC (Training), Southern Alberta Region, as he explains them excellently....

3] Crush 1 teaspoon of iodine crystals to a very fine powder, then mix with 2 teaspoons of powdered aluminium. **IT IS CRITICAL THAT THIS MIXTURE REMAINS ABSOLUTELY DRY.**

Place this mixture in the fire lay on a piece of plywood, forming a volcano shaped mound. When the participants are gathered around the campfire, ask if anyone has a canteen of water in case the fire gets 'out of hand' (you may want to set this up beforehand). Pat your pockets as if looking for a match, but finding none, ask to borrow some water. Sprinkle it on the fire lay (ensure a few drops hit the iodine/aluminium mixture) and you will be greeted by billowing purple smoke, followed by deep red flames. Someone is bound to ask, "OK. So how do you put it out?" Simply tell them you'll throw matches on it !

Note: The powdered iodine "evaporates" very quickly. As a result this mixture must be used within about 10 minutes of preparation.

A teaspoon of Pinesol or Pine Oil is placed in a shallow container within the fire lay. The story that Bill uses to introduce this magic fire start is based on the ashes from a previous campfire. The "Ashes" are a half a cup of HTH Granulated chlorine. When the two are combined, they produce a large quantity of white smoke, followed by flames. This is a relatively slow reaction, so Bill opens the campfire with the following story.

"As we gather here tonight, for our formal campfire, I think back to the closing campfire from last year. It was such a great fire, and the feelings of love and friendship so strong. In order to try and rekindle those feelings for our fire tonight, I would like to add some of the ashes from last year's fire. Now, before I light the fire tonight, I would like you all to look at this pile of wood, and think about your own feelings

about last year's fire, and what made it special for you."

SPECIAL EFFECTS.

Once your camp fire is nicely roaring, it may be appropriate to add 'special effect' flames to enhance a story or just close down the camp fire ceremony with a little more magic.

Try adding a spray of chemicals to the fire. The following can either be sprinkled on the logs as you build the fire lay or added to the fire itself to enhance a story or activity. They all create a flare of coloured flame than can be really effective if not overdone.

COLOURED FLAMES

Yellow	-	potassium nitrate (salt petre)
	-	sodium chloride (table salt)
Green	-	borax
	-	barium nitrate
	-	copper sulphate
Purple	-	lithium chloride
Red	-	strontium nitrate
Orange	-	calcium chloride ("Road Salt")

SPARKLES

Silver	-	powdered aluminium
Gold	-	iron filings

FLASHES

Red	-	strontium nitrate	} equal parts by
	-	powdered magnesium	} weight.
Green	-	potassium nitrate	}
	-	boric acid	} equal parts by
	-	powdered magnesium	} weight.
	-	powdered sulphur	}

SMOKE

black gunpowder	}	equal parts by
powdered magnesium	}	weight.

Where the above chemicals or compounds are not readily available from Hardware/Grocery Stores or the local Pharmacy, check the 'Yellow Pages' for a chemical supply company.

In talking to your pharmacist (for example) please ensure that you have developed some sort of level of comfort with the owner before you start asking for a variety of chemicals. Let them know the purpose for the chemicals, and that you are a registered scouter not some closet pyromaniac !

One method of adding chemicals to a campfire without anyone being aware that it was done is to use a photographer's airbulb release. These use a tiny black airhose attached to a squeeze-bulb trigger. The airhose can be buried so as to remain unseen, and the simple act of stepping on the airbulb (perhaps further hidden under a piece of bark) will blow the spray of chemicals onto the fire.

Another method is to take a six inch long piece of 1" copper pipe and stuff 4" pieces of good quality lawn soaker hose into both ends (don't use the clear type of hose). Placed in the fire you'll have an abundance of coloured flames. Using 2 or 3 of these can create a super effect.

A third option is to pre-make "shots" that can be flipped into the fire. A "shot" is made by creating a tightly rolled ball of paper, dipped in wood glue and the roll in a tray of the chosen chemical. The chemical will coat the outside of the ball and react when thrown into the fire. Store these "shots" in an egg carton until needed - one "shot" per egg carton section !

Here's another 'sparkling thought' from the pages of The Leader. You need enough sugar to give everyone a small handful. After closing the campfire, have everyone walk past the fire embers and toss their sugar onto the fire. You can compare the flashing sparks and quick flares to happy thoughts, or simply enjoy these thoughts in silence.

PHYSICAL LOCATION.

If you want to make your campfire even more memorable (is this possible? - you ask) consider the actual location of your camp fire. Anyone can light a fire in the middle of an open field - why don't you try something different ?

If you're camping by a lake, why not construct a solid raft and have the fire burning on it? Lighting it out of sight of your assembled audience, then allowing it to drift into position behind the camp fire leader will create a very special image. Remember to suitably anchor the raft so that it doesn't keep drifting past you !

An alternative may be to have the fire towed in by canoe (two towing with a third canoe to provide a trailing anchor). The canoeist's can bring the fire raft in and beach it on the shore in front of the assembly.

Back on dry land, why not construct your fire lay a couple of feet above the ground on a lashed frame? More tricky yet would be to have the fire lay built on a secure frame and then hoisted (using rope and pulley's) some distance above the ground. Once the fire is lit, using a "magic fire start" idea, the campfire could then be lowered to the ground to create another memorable opening.

When you have a particularly large group of participants at a campfire, instead on one central fire why not consider having three or four fires in the circle ? In addition to giving a greater illusion of warmth to participants, a 'stage' is naturally formed between the fires for the campfire leader and any groups doing skits, etc..

CONCLUSION.

As the flames from the fire burn down, and participants slowly walk away in wonderment and appreciation, reflect on your achievement. A campfire can be a memorable occasion for youth and adult alike, but it doesn't happen by accident.

The day was long, we've worked and played. And round this fire, we've good friends made; We've shared a friendship fine and deep, And now this circle leaves, to sleep.

As Campfire Leader you have put a lot of time and effort into planning, setting the scene, and stage-managing the evenings activities. Now it is time for you to walk away from the dying embers, reflect on your success, enjoy a time of friendship and fellowship with the scouts and scouters.

Sit back, relax, and start to figure out how you're going to lead your next magic campfire so that it's even more memorable than this one !

Good Luck, have fun, and let me know how it goes.
Scouter Stewart.

ACKNOWLEDGEMENTS.

I am particularly indebted to Scouter Bill Glover, DRC (Training), Southern Alberta Region, who not only set me on the trail of collecting these ideas, but he also provided me with a copy of material he had gathered for a training course conducted in Calgary.

A large vote of thanks is also due to the many contributors from the International Scouter Echo (see The Leader - Aug/Sept '92) who provide tangible proof and practical experience of the meaning of Worldwide Brotherhood of Scouting. Not only is there an unparalleled depth of knowledge available for anyone to draw on, but - even though we may never actually meet one another - I consider everyone of them a true friend. In particular, special recognition is due to the following who provided much of the information and a lot of inspiration :

- Scouter Dave Tracewell, Lodi, California (& moderator of The Scouter Echo)
- Scouter Randy Carnduff, Regina, Saskatchewan.
- Scouter Fred Welch, Colorado.
- Scouter Brad George, Oklahoma.
- Scouter Carl McCaskey, Florida.
- Scouter John Meed, Regina, Sask.
- Scouter Kihe Blackeagle, Texas.

Last, but certainly not least, the greatest acknowledgement has to go to the youth members we do this for. They come in all shapes & sizes; attitudes & aptitudes; motivated & mischievous; but they make it all worthwhile.

Thank you, one and all.