

Originally Displayed on P-80 Systems

Explosives

Underground computer bulletin boards vary in emphasis. I have seen boards that were devoted to finding a mate, reminiscent of the want ads in certain underground newspapers. Some are primarily interested in software piracy. Others are strong on hacking computer systems or phone phreaking. In 1984 a new interest appeared which was quite startling to your present author -- do it yourself explosives. Though seemingly unrelated to telecommunications, it was on the phreak/hack boards that this information began appearing.

The longest and most descriptive article on explosives ever written for a computer bulletin board showed up about the middle of the year on Pirate-80 and a few other elite underground systems. About the only subjects of consequence not covered by the article are thermite and nitroglycerin both of which established themselves early as very popular. Because of its comprehensive and representative nature I am presenting it here in its entirety including the warning statement which is a part of the original article.

EXPLOSIVES AND INCENDIARIES

*** W A R N I N G ***

THIS INFORMATION IS PRESENTED FOR ACADEMIC STUDY ONLY. THE ACTUAL CONSTRUCTION OF THE DEVICES AND MATERIALS DESCRIBED IN THIS FILE WOULD BE DANGEROUS, EVEN FOR AN EXPERIENCED CHEMIST. ALSO, THE CONSTRUCTION OR POSSESSION OF MANY OF THESE DEVICES WOULD BE IN VIOLATION OF VARIOUS FEDERAL, STATE, AND LOCAL LAWS.

INTRODUCTION: The trouble with text books on chemistry and explosives is the attitude with which they are written. They don't say, "Now I know you would like to blow Holy Hell out of something just for the fun of it so here is how to whip up something in your kitchen to do it". They tell you how Dupont does it or how the ancient Chinese did it but not how you can do it with the resources and materials available to you. Even army manuals on field expedient explosives are almost useless because they are just outlines written with the understanding that an instructor is going to fill in the blanks.

It is a fun game to search out the materials that can be put together to make something go "boom". You can find what you need in grocery stores, hardware stores, and farm supplies. An interesting point to remember is that it is much easier to make a big explosion than a small one. It is very difficult for a home experimenter to make a fire-cracker, but a bomb capable of blowing the walls out of a building is easy. The king of explosives for the do-it-yourselfer is black powder. It is easy to make and when properly confined is capable of devastating power. For this reason, I will begin by telling you how to make black powder, how to make black match fuse, and how to put the two together with results that would please even a wild-eyed anarchist. I will end this introduction and begin my instructions with this

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statement: "I know you would like to blow Holy Hell out of something just for the fun of it so here is how to whip up something in your kitchen to do it".

HOW TO MAKE BLACK POWDER: You will need potassium or Sodium Nitrate, Sulfur, and hardwood charcoal. The common name for Potassium Nitrate is saltpeter. Sodium Nitrate is sold at farm supplies under the name of Nitrate of Soda. It is also called Chile Saltpeter. Sodium Nitrate makes a slightly more powerful black powder but has the disadvantage of being hygroscopic (absorbs moisture from the air), so if you use it, store it in tightly closed containers. You can also get sulfur at farm supplies as a wettable powder used for spraying. It is cheap and works well. Some drug stores sell sulfur under the name Flowers of Sulfur. If you use Nitrate of Soda, it will be in the form of prills (little round beads). Bake it in an oven at 200 degrees for 10-15 minutes to drive out the moisture. Then dump a cup or two into a blender and switch it on. It will do a beautiful job of reducing it to powder. Buy a bag of charcoal briquettes at a grocery store. Put a few briquettes in a rag and pound with a hammer. Dump the result into the blender, grind, then strain through a tea strainer. Mix by volume: 6 parts potassium or Sodium Nitrate, 2 parts powdered charcoal, 1 part sulfur. This mixture will burn if ignited and will explode if ignited while tightly confined. It can be greatly improved, however, by processing it as follows: Moisten with water until it will stick together when pinched between thumb and finger. Press it into a disposable aluminum pie pan. Bake in a preheated oven at 200 degrees for about 30 minutes. get it totally dry. Grind into as fine a powder as possible. A mortar and pestle is best. If you use a blender at this point, there is a danger of explosion. It is not very sensitive to friction or impact, but is very sensitive to sparks. If you followed these directions, you should have a fine slate-grey powder.

When baking black powder, remember to preheat the oven. Place your pie pan approximately in the center of the oven. Do not set it on the bottom of the oven. These warnings are to prevent hot spots that could ignite the powder causing a fire or explosion. Something went wrong once when my father-in-law was doing this and it blew the door right off the oven. His training in military demolitions included field expedient explosives. The point is that things can go wrong even when you know what you are doing. Protect yourself at all times. Use common sense. Wear safety glasses; don't stand in front of the oven, etc.

HOW TO MAKE BLACKMATCH FUSE: Take a flat piece of plastic or metal (brass or aluminum are easy to work with and won't rust). Drill a 1/16th inch hole through it. This is your die for sizing the fuse. You can make fuses as big as you want, but this is the right size for the pipe bomb I will be getting to later. To about 1/2 cup of black powder add water to make a thin paste. Add 1/2 teaspoon of corn starch. Cut some one foot lengths of cotton thread. Use cotton, not silk or thread made from synthetic fibers. Put these together until you have a thickness that fills the hole in the die but can be drawn through very easily. Tie your bundle of threads together at one end. Separate the threads and hold the bundle over the black powder mixture. Lower the threads with a circular motion so they start curling onto the mixture. Press them under with the back of a teaspoon and continue lowering them so they coil into the paste. Take the end you are holding and thread it through the die. Pull it

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through smoothly in one long motion. To dry your fuse, lay it on a piece of aluminum foil and bake it in your 200 degree oven or tie it to a grill in the oven and let it hang down. The fuse must be baked to make it stiff enough for the uses it will be put to later. Air drying will not do the job. If you used Sodium Nitrate, it will not even dry completely at room temperature. Cut the dry fuse with sissors into 2 inch lengths and store in an air tight container. Handle this fuse carefully to avoid breaking it. You can also use a firecracker fuse if you have any available. The fuses can usually be pulled out without breaking. To give yourself some running time, you will be extending these fuses (blackmatch or firecracker fuse) with sulfured wick.

HOW TO MAKE SULFURED WICK: Use heavy cotton string about 1/8th inch in diameter. You can find some at a garden supply for tieing up your tomatoes. Be sure it's cotton. You can test it by lighting one end. It should continue to burn after the match is removed and when blown out will have a smoldering coal on the end. Put some sulfur in a small container like a small pie pan and melt it in the oven at 250 degrees. It will melt into a transparent yellow liquid. If it starts turning brown, it is too hot. Coil about a one foot length of string into it. The melted sulfur will soak in quickly. When the string is saturated, pull it out and tie it up to cool and harden. It can be cut to desired lengths with sissors. 2 inches is about right. These wicks will burn slowly with a blue flame and do not blow out easily in a moderate wind. They will not burn through a hole in a metal pipe, but are great for extending your other fuse. They will not throw off sparks. Blackmatch generates sparks which can ignite it along its length causing unpredictable burning rates. Now you have the basic ingredients to shake the earth like thunder. In the next installment or two, I will tell you how to put it all together to do just that. You will find that you have baked a very deadly pie. I have twice been accused of setting off dynamite in the woods. The explosive power of your little grey powder may exceed your expectations, so choose your testing ground with care.

HOW TO MAKE A PIPE BOMB: Buy a section of metal water pipe 1/2 by 6 inches long, threaded on both ends. Buy two metal caps to fit. These are standard items in hardware stores. Drill a 1/16th hole in the center of the pipe. This is easy with a good drill bit. Screw a metal cap tightly on one end. Fill the pipe to within 1/2 inch of the top with black powder. Do not pack the powder. Don't even tap the bottom of the pipe to make it settle. You want the powder loose. For maximum explosive effect, you need dry, fine powder sitting loose in a very rigid container. Wipe off any powder that has gotten onto the top or threads of the pipe. Gently screw on the second cap. Hand tighten only. Place a small piece of tape over the hole and go to your test site. Remove the tape and insert a two inch piece of black match fuse or a firecracker fuse into the hole. Place the bomb behind a large rock or tree. Using thread or string, lightly tie a 2 inch piece of sulfured wick to the end of the fuse. Avoid letting the wick touch any objects. This might cause it to go out. Light the wick and head for cover in a direction that keeps the rock or tree between you and the bomb at all times. Get behind cover at least 50 yards away. You may not expect such a large explosion from such a small object. Be extra cautious until You have done this a time or two and it gets real what you are dealing with. The pipe will be blown to pieces which will fly through the air like bullets. An accident

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could seriously wound or kill you. This is not a big firecracker. It is more like a hand grenade. The size of the bomb can be increased by using a larger pipe and caps. To make a big noise without blowing up your pipe, cap one end only. Drill a 1/16 hole at the top of the threads at the capped end. Put in about 3 to 4 rounded teaspoonsful of powder. Pack about 2 inches of wadding on top of the powder. Toilet paper or facial tissue is good for this. Pack it tight. Open up a safety pin and stick it into the hole. Work it around to loosen up the powder so a fuse can be inserted. When this goes off, the recoil will be tremendous. You will lose your pipe unless you brace it securely against something. The pipe can be reloaded and used again. A fun trick is to mount the pipe pointing upward. Drop a tin can over the open end and light the fuse. The can will be blown high into the air. Campbell's soup cans are great for this.

HOW TO MAKE ROCKET FUEL: This is easy to make and fun to play with. Mix equal parts by volume Potassium or Sodium Nitrate and granulated sugar. Pour a big spoonful of this into a pile. Stick a piece of blackmatch fuse into it; light; and step back. This is also a very hot incendiary. A little imagination will suggest a lot of experiments for this.

ANOTHER ROCKET FUEL: Mix equal parts by volume of zinc dust and sulfur. Watch out if you experiment with this. It goes off in a sudden flash. It is not a powerful explosive, but is violent stuff even when not confined because of its fast burning rate.

As I continue from this point some of the ingredients are going to be harder to get without going through a chemical supply. I try to avoid this. I happen to know that B. Prieser Scientific (local to my area) has been instructed by the police to send them the names of anyone buying chemicals in certain combinations. For example, if a person were to buy Sulfuric acid, Nitric acid and Toluene (the makings for TNT) in one order the police would be notified. I will do the best I can to tell you how to make the things you need from commonly available materials, but I don't want to leave out something really good because you might have to scrounge for an ingredient. I am guessing you would prefer it that way.

HOW TO MAKE AN EXPLOSIVE FROM COMMON MATCHES: The word "safety" in safety matches is misleading. The chemical on the heads of safety matches is a powerful explosive. It is similar to black powder but has a lower ignition temperature (more sensitive to heat) and unlike black powder is easily detonated by impact. This feature moves it up into the high explosives class. To test this, lay a paper safety match on a hard flat surface and hit the head sharply with a hammer. What do you know! It goes bang! To collect a quantity of this explosive, it is best to use wooden safety matches. Buy several cartons. They're cheap. Note that these should be safety matches, not the strike anywhere kind. Pinch the head near the bottom with a pair of wire cutters to break it up; then use the edges of the cutters to scrape off the loose material. It gets easy with practice. You can do this while watching TV and collect enough for a bomb without dying of boredom. Once you have a good batch of it, you can load it into a pipe instead of black powder. Be careful not to get any in the threads, and wipe off any that gets on the end of the pipe. Never try to use this stuff for

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rocket fuel. A science teacher was killed that way. Just for fun while I'm on the subject of matches, did you know that you can strike a safety match on a window pane? Hold a paper match between your thumb and first finger. With your second finger, press the head firmly against a large window. Very quickly, rub the match down the pane about 2 feet while maintaining the pressure. The friction will generate enough heat to light the match. Another fun trick is the match rocket. Tightly wrap the top half of a paper match with foil. Set it in the top of a pop bottle at a 45 degree angle. Hold a lighted match under the head until it ignites. If you got it right, the match will zip up and hit the ceiling. I just remembered the match guns I used to make when I was a kid. These are made from a bicycle spoke. At one end of the spoke is a piece that screws off. Take it off and screw it on backwards. You now have a piece of stiff wire with a small hollow tube on one end. Pack the material from a couple of wooden safety matches into the tube. Force the stem of a match into the hole. It should fit very tightly. Hold a lighted match under the tube until it gets hot enough to ignite the powder. It goes off with a bang. --- For later projects, like a chemical time delay fuse, you will need some concentrated sulfuric acid. So, I better tell you how to make it.

HOW TO MAKE CONCENTRATED SULFURIC ACID FROM BATTERY ACID: Go to an auto supply store and ask for "a small battery acid". This should only cost a few dollars (about 4 dollars). What you will get is about a gallon of dilute sulfuric acid. Put a pint of this into a heat resistant glass container. The glass pitchers used for making coffee are perfect. Do not use a metal container. Use an extension cord to set up a hotplate out doors. Boil the acid until white fumes appear. As soon as you see the white fumes, turn off the hot plate and let the acid cool. Pour the now concentrated acid into a glass container. The container must have a glass stopper or plastic cap -- no metal. It must be air tight. Otherwise, the acid will quickly absorb moisture from the air and become diluted. Want to know how to make a time bomb that doesn't tick and has no wires or batteries? Hold on to your acid and follow me into the next installment.

HOW TO MAKE A CHEMICAL TIME DELAY FUSE: To get an understanding of how this is going to work, mix up equal parts by volume Potassium chlorate and granulated sugar. Pour a spoonful of the mixture in a small pile and make a depression in the top with the end of a spoon. Using a medicine dropper, place one drop of concentrated sulfuric acid in the depression and step back. It will snap and crackle a few times and then burst into vigorous flames. To make the fuse, cut about 2 inches off a plastic drinking straw. Tamp a small piece of cotton in one end. On top of this put about an inch of the chlorate/sugar mixture. Now lightly tamp in about a quarter inch of either glass wool or asbestos fibers. Secure this with the open end up and drop in 3 or 4 drops of sulfuric acid. After a few minutes the acid will soak through the fibers and ignite the mixture. The time delay can be controlled by the amount of fiber used and by varying how tightly it is packed. Don't use cotton for this. The acid will react with cotton and become weakened in the process. By punching a hole in the side of the straw, a piece of blackmatch or other fuse can be inserted and used to set off the device of your choice. Potassium chlorate was very popular with the radical underground. It can be used to make a wide variety of explosives and incendiaries, some of them extremely dangerous to handle. The radicals lost several

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people that way. But, don't worry. I am not going to try to protect you from yourself. I have decided to tell all. I will have more to say about Potassium chlorate, but for now, let's look at a couple of interesting electric fuses.

HOW TO MAKE AN ELECTRIC FUSE: Take a flashlight bulb and place it glass tip down on a file. Grind it down on the file until there is a hole in the end. Solder one wire to the case of the bulb and another to the center conductor at the end. Fill the bulb with black powder or powdered match head. One or two flashlight batteries will heat the filament in the bulb causing the powder to ignite.

ANOTHER ELECTRIC FUSE: Take a medium grade of steel wool and pull a strand out of it. Attach it to the ends of two pieces of copper wire by wrapping it around a few turns and then pinch on a small piece of solder to bind the strand to the wire. You want about 1/2 inch of steel strand between the wires. Number 18 or 20 is a good size wire to use. Cut a 1/2 by 1 inch piece of cardboard of the type used in match covers. Place a small pile of powdered match head in the center and press it flat. place the wires so the steel strand is on top of and in contact with the powder. Sprinkle on more powder to cover the strand. The strand should be surrounded with powder and not touching anything else except the wires at its ends. Place a piece of blackmatch in contact with the powder. Now put a piece of masking tape on top of the lot, and fold it under on the two ends. Press it down so it sticks all around the powder. The wires are sticking out on one side and the blackmatch on the other. A single flashlight battery will set this off.

ELECTRIC FUSE # 3: An excellent electric fuse can be bought ready made at hobby and toy stores. They are sold for setting off model rockets.

MORE SPONTANEOUS COMBUSTION: Some of the ingredients for these can only be had from a chemical supply so they are not my favorites. Look for powdered aluminum at a good painting supply.

METHOD # 1: Scatter out a few crystals of chromic anhydride. Drop on a little ethyl alcohol. It will burst into flame immediately.

METHOD # 2: Mix by weight, four parts ammonium chloride, one part ammonium nitrate, four parts powdered zinc. Pour out a small pile of this and make a depression on top. Put one or two drops of water in the depression. Stay well back from this.

METHOD # 3: Put one gram of powdered potassium permanganate into a paper cup. Drop two drops of glycerin onto it. After a few seconds it will burst into flames.

METHOD # 4: Spoon out a small pile of powdered aluminum. Place a small amount of sodium peroxide on top of this. A volume the size of a small pea is about right. One drop of water will cause this to ignite in a blinding flare.

METHOD # 5: Mix by volume 3 parts concentrated sulfuric acid with 2 parts concentrated nitric acid. Hold a dropper of turpentine about 2 feet above the mixture. When drops strike the acid they will burst into flame.

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HOW TO MAKE NITROGEN TRIIODIDE: Here are some notes I took four years ago on how to make this wild explosive that can be detonated by a fly walking on it. Five grams iodine, three grams potassium iodide, 20 ml. concentrated ammonium hydroxide, filter paper, funnel. Stir the potassium iodide and iodine together in a beaker with 50 ml. of water. Add the ammonium hydroxide with stirring until no more precipitate forms. Filter and spread a thin layer of the wet solid on several filter papers. Break the filter papers into many small pieces and allow to dry for several hours. On drying, the paper is extremely sensitive to touch and will explode violently with the slightest disturbance. Can be handled safely when wet. Do not let any sizeable quantity of the dry material accumulate. --- I was able to buy concentrated ammonium hydroxide from a photographic supply.

HOW TO MAKE UREA NITRATE: Would you be offended if I asked you to go pee in a pot? Actually, this is the first step to making a powerful explosive called urea nitrate. Boil 10 cups of urine in a heat resistant glass container until the volume is reduced to 1 cup. Filter the urine into a second glass container through a coffee filter. Slowly add 1/3 cup of nitric acid to the filtered urine and let the mixture stand for 1 hour. Filter again as before. This time the urea nitrate crystals will collect on the filter. Wash the crystals by pouring water over them. Remove the crystals from the filter and allow to dry for 16 hours. This explosive has the disadvantage of requiring a blasting cap to detonate it, but I couldn't resist telling you about it.

The following message was an answer to a question from a user who knew the ingredients for nitroglycerin, but needed to know how much of each chemical to use:

For information only. *** By weight, one part of glycerin is nitrated with 6 parts of mixed acid. The acid mixture is 40% Nitric and 60% Sulfuric. The Sulfuric acid is slowly added to the Nitric acid with constant stirring. Never mix them the other way round. Each part of glycerin will yield 2.3 parts of nitroglycerin. The temperature when adding the glycerin to the acids should never go above 25 degrees centigrade. If it does or if red fumes appear, the whole mess should be dumped into cold water fast. Do not take this as an encouragement to make nitroglycerin. You specifically asked me for the information and I have given it to you. What you do with it is your responsibility.

Because of its extreme popularity, this chapter would not be complete without a discussion of thermite. And so, by popular demand, I present to you straight from the computer underground for a limited engagement:

HOW TO MAKE THERMITE

Thermite is made from powdered aluminum and iron oxide (rust). Mix two parts by volume powdered aluminum with three parts iron oxide. This stuff is hard to lite, but once you get it going, it generates so much heat it can burn its way through a

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steel plate.

There are several ways to get it going. One way is to use a strip of magnesium ribbon as a fuse. If made from finely powdered ingredients thermite can generate a fast enough burning rate to be used as an explosive when confined. For melting metal, it is best to use a coarse mixture about the consistency of ground coffee.

Powdered aluminum can be bought at some paint stores or from a chemical supply. You can make your own iron oxide by burning steel wool in a stove pipe or similar container. Get it started with a propane torch and then blow a stream of air over it with a vacuum cleaner hooked up in reverse.