The best method to use these is to dissolve some nitrocellulose based smokeless powder in acetone and/or ether, forming a thick glue-like paste. Coat the end of the fuse with this paste, then stick the bulb (with the metal rod facing out) into the paste. About half the bulb should be completely covered, and if a VERY THIN layer of nitrocellulose is coated over the remainder then ignition should be very reliable.

To insure that the device lands with the bulb down, a small streamer can be attached to the opposite side, so when it is tossed high into the air the appropriate end will hit the ground first.

---ELECTRICAL IGNITION---

Electrical ignition systems for detonation are usually the safest and most reliable form of ignition. Electrical systems are ideal for demolition work, if one doesn't have to worry so much about being caught. With two spools of 500 ft of wire and a car battery, one can detonate explosives from a "safe", comfortable distance, and be sure that there is nobody around that could get hurt. With an electrical system, one can control exactly what time a device will explode, within fractions of a second. Detonation can be aborted in less than a second's warning, if a person suddenly walks by the detonation sight, or if a police car chooses to roll by at the time. The two best electrical igniters are military squibs and model rocketry igniters. Blasting caps for construction also work well. Model rocketry igniters are sold in packages of six, and cost about $1.00 per pack. All that need be done to use them is connect it to two wires and run a current through them. Military squibs are difficult to get, but they are a little bit better, since they explode when a current is run through them, whereas rocketry igniters only burst into flame. Most squibs will NOT detonate KClO3/petroleum jelly or RDX. This requires a blasting cap type detonation in most cases. There are, however, military explosive squibs which will do the job.

Igniters can be used to set off black powder, mercury fulminate, or guncotton, which in turn, can set of a high order explosive.

---HOW TO MAKE AN ELECTRIC FUZE---

By Capt. Hack & GW

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 tw o flashlight batteries will heat the filament in the bulb causing the powder to ignite.

---ANOTHER ELECTRIC FUZE---

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 « inch of steel strand between the wires. Number 18 or 20 is a good size wire to use.

Cut a « 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.

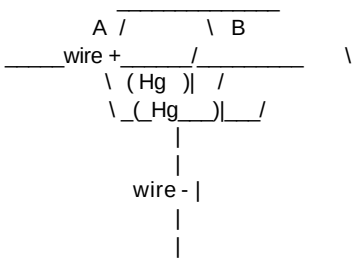
The strand should be surrounded with powder and not touching anything else except the wires at its ends. Place a piece of blackmatch in contact with the powder. Now put a piece of masking tape on top of the lot, and fold it under on the two ends. Press it down so it sticks all around the powder. The wires are sticking out on one side and the blackmatch on the other.
A single flashlight battery will set this off.

---ELECTRO-MECHANICAL IGNITION---

Electro-mechanical ignition systems are systems that use some type of mechanical switch to set off an explosive charge electrically. This type of switch is typically used in booby traps or other devices in which the person who places the bomb does not wish to be anywhere near the device when it explodes. Several types of electro-mechanical detonators will be discussed

---Mercury Switches ---

Mercury switches are a switch that uses the fact that mercury metal conducts electricity, as do all metals, but mercury metal is a liquid at room temperatures. A typical mercury switch is a sealed glass tube with two electrodes and a bead of mercury metal. It is sealed because of mercury's nasty habit of giving off brain-damaging vapors. The diagram below may help to explain a mercury switch.



When the drop of mercury ("Hg" is mercury's atomic symbol) touches both contacts, current flows through the switch. If this particular switch was in its present position, A---B, current would be flowing, since the mercury can touch both contacts in the horizontal position.