The Butane Lighter Hand Grenade
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Hand Grenade

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B.A.T.F. WARNING
The entire process in this booklet has been found safe on a professional level of experience, but it is illegal to manufacture any explosive device unless prior approval by the BUREAU of ALCOHOL, TOBACCO and FIREARMS is obtained in advance of construction!!

IMPORTANT
Always read the entire contents of a book to familiarize yourself with procedure before you act.

SAFETY & INTRODUCTION
This booklet explains in detail a method for converting a disposable butane lighter into a one hand initiated time delay fused grenade that has enough power to blow your fingers off (I have all 10 of mine) or more, if one is not careful, or disregards any included safety procedures during construction or after completion.
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## Section 1

### TOOLS, SUPPLIES, CHEMICALS and SETUP

- Small straight blade screw driver approx. 1/8" blade X 3" long.
- Serrated needle nose pliers & or hemostats W/ locking handles.
- Small diagonal cutters (true flush type).
- Black fine point felt marker pen.
- 1 box tooth picks.
- 1 roll of electrical tape.
- Dremel type hand grinder W/ cutter bit assortment.
- Small (clamp on style) bench vise that opens over 2 inches.
- A piece of cardboard (note pad backing).
- 80 grit coarse sand paper.
- A small wood saw.
- A 1 "X 2" board scrap approx. 4" long.
- A small postage scale.
- A few feet of toilet paper.
- A plastic 1 teaspoon measuring spoon.
- 5 to 10 paper cups
- A newspaper
- A small (1/4" diameter or smaller) powder funnel.
- 1 container of glass micro filler (most hobby shops carry this).
- 1 tube of instant glue gel (for wood & leather).
1 tube of clear celluloid modeling glue & thinner. (hobby shops).
30 foot roll of 3/32" waterproof cannon fuze (see text).
1 oz. bottle of POTASSIUM CHLORATE (chemical supply houses).
1 oz. pyro ALUMINUM, 400 mesh (chemical supply houses).
1 oz. powdered SULFUR, technical grade (chemical supply houses).
1 oz. FFFF BLACK GUN POWDER, used for flintlock type firearms (most larger gun shops).
A small box of baking soda (SODIUM BICARBONATE).
1 box of surgical gloves (pharmacy).
A plastic face shield (hardware store).
5 or 10 new disposable lighters (the ones that start with the letter “B”)

**INDICATES STRONG OXIDIZER AND VERY REACTIVE !!**
*INDICATES POSSIBLE HAZARDOUS MATERIAL!

The process is simple and clear, so let’s get started with setting up shop. First find a place to work where there are no flames, sparks, wind or unscheduled disturbances. Keep your chemicals in another room until needed. Mount your bench vise to a sturdy table with a nearby electrical outlet. Have all necessary tools at hand. Make sure you have plenty of light and try to remove distractions. Also keep everything out of reach of children and anyone else you don’t want involved. Make sure there is plenty of ventilation if you need it.

Before starting the disassembly of the lighter refer to the drawing on the next page to familiarize yourself with all the bits and pieces that will issue forth from this project.
THE CLAMPING JIG

Now take the 2"X2" board and cut 2 lengths each 2" long and clamp them together in the vise then lay out the profile as shown in (FIG. 1) using the lighter as a template. This will be the lighter jig used in the bench vise to hold the lighter while you effect modifications.

Lay out the profile on both sides of the jig. Now separate the two halves and connect the end profiles with straight lines, finishing the layout.

Now take the jig halves and rough carve the profiles out of each jig half using the hand grinder, leaving enough wood left for finish sanding using a lighter with a piece of 80 grit sand paper glued around it as a profile sander. Do not sand too close to the lines so as to leave enough wood left to grip the lighter when placed in the vise. IMPORTANT: When using the jig, don’t apply too much pressure as you might crack the lighter.

DISASSEMBLY and MODIFICATIONS

PROCEDURE *1:

Now take one of the lighters and with a screwdriver spread the windshield away (FIG. 2) from the body by using just enough force to bend the windshield so that it will easily fall away on its own. Try not to spark the lighter in this process. Now mark 6 paper cups with the numbers 1,2,3,4,5 & 7. Part *6 will be thrown away. Put the parts in their respective cups for ease of retrieval in the future. The work can be done in the jig or in the hand, whichever is easier for you.

PROCEDURE *2:

The friction wheel is next. This part is easily removed inside a pillowcase because there is a spring under the friction wheel, and until you get the hang of it, parts might go flying. Now with the screwdriver pry one of the plastic ears away (FIG. 2) from the wheel until the wheel cocks, then pry the other ear and the wheel will spring loose followed by the flint and the flint spring.

Try to keep your hand over the top while removing these parts. I’ve found this job most easily done by hand using your thumb to contain the parts. The procedure is basically the same as the illustration. THE GAS WILL NOT ESCAPE UNTIL YOU COMPLETE PROCEDURE *3.
PROCEDURE *3:
To remove the valve lever you should use the jig in the vise to hold the empty lighter secure and to give you use of both hands as this step is considerably more difficult than the last, requiring more care so as not to break the plastic ears off. Use your thumb and screwdriver as follows: use your thumb to bend one of the ears away far enough so when a screwdriver inserted under the valve lever (with slight prying) causes the valve lever to pop up on one side, now repeat the same process with the other ear.

Now remove the valve lever with the valve attached. THE MOMENT YOU REMOVE THE VALVE BUTANE GAS WILL START TO ESCAPE. YOU CAN TELL BY THE ODOR THAT IS CHEMICALLY ADDED AS A DETECTOR. THERE IS NO EXPLOSIVE ESCAPE OF GAS. Once the valve is removed, place the lighter in a well ventilated area for about 3 hours, or until it is empty. You can tell the fuel level if you hold the lighter up to the light, and by using your sense of smell.

PROCEDURE *4:
Now take the valve lever and with the diagonal cutters, snip off the shaded end that holds valve #7B. Throw part #7B away, leaving a shortened valve lever as illustrated in (FIG. 3)

PROCEDURE *5:
Next clamp an empty and disassembled lighter in the jig and with the hand grinder remove the shaded portion of the body as illustrated in (FIG. 4), being careful not to cut too deep and risk cutting the central fuel divider. What we are doing is removing the bottom to expose the two separate cells, which we will use one side to run the fuze down and the other to hold the explosive charge. Both sides will be sealed off from each other when we are done.

PROCEDURE *6:
Now take a body with the bottom cut out, clamp it upside down in the jig, look down the fuze chamber at the gas jet which resembles an aluminum plug about 1/8" in diameter. (FIG. 4).
The Butane Lighter Hand Grenade

Take the screwdriver and push this plug out through the top and throw away. The hole that is left will be for the fuze to exit.

FUZE SELECTION

Fuze quality can be difficult to obtain if you cannot select in person "the best of the batch" in 3/32" waterproof cannon fuze, because quality varies wildly. Most gun shows have vendors that stock fuze, so you can select your fuze from a stack on a table. If there are no local gun shows coming up in your town soon, then try a local gun shop or hobby shop. Or you can take a chance and order from a gun or survival oriented type of magazine.

Fuze is usually available in rolls of 10 ft. and up and inspection of every inch is necessary to get the best quality. So let's take a look at a piece of fuze (FIG. 5) to see what I'm talking about. You see, fuze burns at about 30 seconds per foot or whatever the manufacturer specs it at, then it reaches an area where the powder is anemic and the fuze stops burning, we call this "fuze angina". So select a roll with the least amount of angina and the largest diameter with the healthiest waterproof casing you can find to obtain the least amount of dangerously dud grenades. NEVER USE A SECTION OF FUZE WITH ANY ANGINA AT ALL. FOR THE ACTUAL DELAY FUZE!!

PROCEDURE *7:

Clamp a prepared body upright in the jig then snap the shortened valve lever back into place, then with the lever down secure the lever with a drop of super glue at the pivots. Next drop the flint spring down its hole. With the new un-filed side of the flint held "up" in the tip of the hemostats, push the flint down the flint hole against the spring, then follow the flint with the friction wheel. While releasing tension from the hemostats on the flint, push the friction wheel into its snaps, at the same time removing the hemostats. The friction wheel only "cuts" in one direction of rotation, note this when reinstalling the friction wheel so that it cuts "sparks" when flicked.

PROCEDURE *8:

Cut a piece of fuze 5" long and with a toothpick dab some modeling glue on and around a section of fuze about 1" long and about 1" from one end. This process makes the fuze very pliable so that it can be bent without breaking the waterproof coating, creating the risk of losing powder. Bend as in (FIG. 6) using pushpins in the back of the jig halves to hold the shape until the glue completely dries.
PROCEDURE *9:
Now insert the long end of the fuze into the fuze chamber and out the old gas jet hole so that at least 1/4" sticks out the hole, and the center of the bend in the fuze is touching the fuel divider. With a small drop of super glue secure the fuze at the fuel divider only (FIG. 7).
When you have produced as many fuzed bodies as you need, then you can seal the fuze chamber in all but one which is to be put aside for IGNITER PRACTICE.

PROCEDURE *10:
Take a fuzed body and place it bottom up in the jig. Now take a small wad of toilet paper and carefully stuff it between the fuze and the wall of the fuze chamber up by the bend in the fuze. Now repeat this process on the other side of the fuze making sure that the paper fills all the gaps between the fuze and the fuze chamber essentially sealing off the fuze chamber from the outside world, leaving the powder chamber open (FIG. 7).
Repeat this process for all the fuzed bodies except for one which will be used for igniter practice.

PROCEDURE *11:
For every 10 bodies you will need approx. 1 teaspoon full of mixed epoxy glue and 1 teaspoon full of glass micro filler to completely seal the fuze chamber.
Mix the epoxy on the cardboard, then with a toothpick mix in the glass micro filler. The mixture should look like a thick paste.
With a toothpick dab some filler paste into the corners and around the fuze, covering all gaps and exposed paper, again leaving the powder chamber open. Do not fill to the top, use just enough to seal the fuze chamber (FIG. 7).
IGNITER PRACTICE

The igniter is made of FFFF (or the finest grade obtainable) black powder (NOT MODERN SMOKELESS POWDER!) and mixed with a binder. Black powder is very spark and heat sensitive yet stable, making it an excellent candidate for the igniter. BEFORE YOU START HANDLING THE BLACK POWDER PUT ON YOUR FACE SHIELD AND GLOVES. REMEMBER: NO SPARKS, FLAMES, FRICTION OR EXCESSIVE HEAT IN THE WORK AREA!

PROCEDURE *12:

For every 10 igniters you will need 2 teaspoons of black powder and 10 drops of model glue mixed with enough thinner to make a thick paste that is not runny or even fluid, yet is thick enough to be molded without falling apart or flaking. Mix the black powder and glue in a cut-down paper cup with a toothpick.

MAKE ONLY ENOUGH IGNITER AS NEEDED AT ONE TIME.

If the igniter becomes too thick or thin, add thinner or black powder as needed.

PROCEDURE *13:

Clamp the fuzed body you put aside for igniter practice upright in the vise. Take a toothpick and trowel out a dollop of igniter paste and place it on the fuze tip, being careful not to get any on the friction wheel or flint. Make a pocket in front of the flint spark trajectory to catch the sparks and concentrate the heat, insuring ignition the very first time you flick. Before the igniter completely dries, you should scratch open the surface of the igniter pocket as there is a film of glue that forms upon the surface as the igniter dries, insulating the heat from the black powder (FIG. 8). The igniter should be left to dry for at least 3 hours in a warm dry place.

ARMINING OF DEVICE and SAFETY SYSTEM

PROCEDURE *14:

When the igniter has dried, take the pre-grenade into a well ventilated area, PUT ON YOUR FACE SHIELD AND GLOVES, take the pre-grenade in your hand and flick it hard once. If it ignites set it down and observe that the fuze burns all the way to the end, (you can confirm this after the lighter has cooled). If it takes more than one flick to ignite then you need to adjust the igniter pocket or retrace your steps until the igniter lights the first flick and the fuze burns to the end every time.

This is igniter practice and it is the most difficult procedure in the construction of a finished grenade.

PROCEDURE *15:

When you have mastered these last two procedures then you can finish applying igniters to the rest of the lot. Even though the pre-grenade is not filled with an explosive, IT IS NOW CONSIDERED ARMED AS AN INCENDIARY DEVICE! Now take the windshields, squeeze them slightly so that they are not loose when they are in place and carefully snap them back on the pre-grenades.

To protect from an accidental ignition or the friction wheel from being turned, place a length of electrical tape over the top of the pre-grenades as shown in (FIG. 9) as a safety device to be removed only immediately before ignition.
CHEMICALS and SAFETY

In this section you will be dealing with 4 chemicals, the roles they play, their individual dispositions, do’s, don’ts, their consolidated terminal destination, safety and handling.

POTASSIUM CHLORATE, KCLO/3
An oxygen source oxidizer, it is a white crystalline powder that resembles table salt. It can spontaneously ignite or explode when in contact with any organic substance, especially with sulfuric acid. It provides the oxygen for the combustion of sulfur and the heat producing aluminum powder.

Keep away from all foreign substances, including moisture. Do not get on your hands as KCLO/3 may cause dermatitis. Ingestion may cause G. I. tract and kidney damage. Use gloves and avoid inhalation of dust when handling. Dispose of by dilution with water then discard properly.

SULFUR, S
A fuel, consumer of oxygen and producer of heat, it is a fine yellow powder that resembles flour. It is usually a very stable element that is generally non-reactive. It burns like any other fuel, giving off toxic vapors that are really nasty to the lungs and mucous membranes.
Do not mix sulphur with any foreign substances and use gloves when handling and avoid inhalation of dust.
ALUMINUM. ALL POWDERED
A fuel and producer of extreme heat and consumer of oxygen.
It is a lustrous gray, very dusty light powder that is easily
ignited and can cause dust explosions. It burns with intense
heat giving off a very bright light. It is a reactive element and
should be kept in a closed container at all times when not in use.
Do not mix with any foreign substance and use gloves when
handling and avoid inhalation of dust as aluminum can cause
dermatitis and lung damage.

SODIUM BICARBONATE, CHNaO/3
An acid neutralizer in the form of a heavy white powder that
resembles flour. It serves as an additive that prevents the
formation of chloric acid.

POWDER PREPARATION

PROCEDURE *16:
Take a few sheets of a full size newspaper, fully unfold them
and place them on a table. Take the postage scale, sieve, mortar
& pestle and set it on the newspaper along with 5 paper cups
and 5 plastic spoons. Mark 4 of the paper cups with each of the
chemicals and one with the word EXPLOSIVE. Put a paper cup
on the scale and note its weight, now adjust the scale to read "0".
It takes about a 1 gram of mixed powder to fill 1 grenade, so
formulate how much of each individual chemical you need to
make one batch of explosive, using the following table.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Amount</th>
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<tr>
<td>POTASSIUM CHLORATE</td>
<td>1 gram</td>
</tr>
<tr>
<td>SULFUR</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>POWDERED ALUMINUM</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>SODIUM BICARBONATE</td>
<td>1/20&quot;</td>
</tr>
</tbody>
</table>

PROCEDURE *17:
Remember safety first! Have all of the chemicals at hand.
First sieve the proper amount of SULFUR into a marked cup to
the required weight then set this cup aside. Repeat this process
with the POWDERED ALUMINUM and SODIUM BICARBONATE. DO NOT USE THE SIEVE FOR THE POTASSIUM

CHLORATE UNTIL IT HAS BEEN WASHED CLEAN AND
DRIED! When all the chemicals have been weighed out then
remove all the bulk chemicals from the work room along with the
scale and sieve.

PROCEDURE *18:
Now pour ONLY the potassium chlorate into the CLEAN
mortar and VERY LIGHTLY grind until it has the consistency of
flour, this should take about 5 to 10 minutes. THIS IS THE
ONLY CONTRADICTION TO THE ANTI-FRICTION RULE
AND CAN BE DONE SAFELY.

PROCEDURE *19:
Now remove all paraphernalia from the work area except
the newspaper and the 5 paper cups. Remove the used top sheet
from the newspaper, soak it with water and discard properly.
Now pour all the ingredients into a pile in the center of the
newspaper and by alternately lifting the opposing corners of
the newspaper you will cause the pile to roll back and forth,
mixing itself very intimately. This should take approximately
10 minutes. When done mixing, use the newspaper to funnel the
explosive powder into the cup in preparation for the next
procedure. Soak the used top sheet and the used paper cups in
water and discard properly. Clean up any powder spills.

FILLING OF PRE-GRENDALE and SEALING

PROCEDURE *20:
Put on the face shield and gloves, have at hand the powder
funnel and a plastic spoon. Now clamp a pre-grenade bottom
up in the jig, insert the funnel into the powder chamber and add
only enough explosive to fill the powder chamber TWO THIRDS
of the way (FIG. 7) leaving an air pocket so that when the
potassium chlorate based explosive is initiated, the hot gases
that are produced are allowed room to propagate assuring that
the entire powder charge is initiated before the plastic body
bursts into shrapnel. THE DEVICE IS NOW CLASSIFIED AS
AN EXPLOSIVE DESTRUCTIVE DEVICE! Leave the grenade in
the jig for the next procedure.
PROCEDURE*21:
Take a wad of toilet paper and stuff it into the top of the powder chamber, essentially sealing it from the outside world but most of all from the fuse chamber.
Refer to PROCEDURE*11 for mixing the epoxy but for this procedure make the filler extra thick so that you may set the grenades aside to cure without the filler running out of the bottom.
Add enough filler to reach the top edge so as to look like an unmodified lighter. Set the grenades aside to cure for an hour then YOU WILL BE READY!!

To use, carefully peel away the safety tape and give the grenade a hard flick. If properly constructed, you now have a few short seconds to get away from it or get it away from you! Once lit the grenade may be thrown on land or into water with assurance of detonation.

These grenades are not meant for storage so use them within a couple of months. Keep them away from moisture, heat, sparks and impact, for they will detonate if struck hard enough.

HEXAMETHELENETRIPEROXIDEDIAMINE
(H.M.T.D.)
14 grams of hexamethylenetriperoxodiamine (solid fuel tablets) are dissolved in 45 grams of **30% hydrogen peroxide solution in a beaker that is kept cool in a pan of cracked ice, salt & water. To the solution add slowly 21 grams of powdered citric acid in small portions at a time while stirring as the temperature is kept at 0 degrees C. or below. When all the ingredients are dissolved put the solution in the freezer for 3 hours upon which time the solution is left out at room temperature for 2 hours when a white crystalline precipitate has formed. The crystalline powder is filtered off and washed thoroughly with water, blotted and left to dry in dry air.

H.M.T.D. is subject to slow spontaneous decomposition as you can tell by its smell, so that it must be used as soon as it is made (it becomes inert in a few weeks to a few months depending on temperature, humidity etc.). H.M.T.D. has much more power than potassium chlorate based explosives, higher sensitivity to sparks and flame, less sensitivity to shock and friction but no spontaneously explosive by-products. It is loaded with the same safety procedures as found in the text except that the powder chamber is filled to the top with slight tamping. AGAIN DO NOT ALLOW ANY H.M.T.D. INTO THE FUSE CHAMBER OR THE GRENADE WILL DETONATE IN YOUR HAND WHEN INITIATED!

**6% hydrogen peroxide hair bleach can be substituted for 30% hydrogen peroxide; just use twice as much 6% hair bleach. All other quantities remain the same.