DD.TXT

Delay Detonator

This phile shows how to build a simple electronic delay detonator for almost any type of bomb that uses fire to detonate. This detonator can also be modified to activate blasting caps for detonating Plastique etc. All of the parts are easily available at Radio Shack or other electronic stores. One drawback of this detonator is that it costs about $10 in parts to make one. But if you are rich or if you need more of a delay than a fuse can provide, this'll do the trick.

Parts List:	Part #	R.S. Cat. #	Cost
2 Switching Diodes	(1N914)	276-1122	$0.99
10K Resistor		271-034	$0.19
Relay Switch (6V)		275-004	$2.99
IC Timer 555		276-1723	$1.19
Mini LED		276-059	$0.99
Electrolytic capacitor (Size depends on delay desired)			
Resistor (Size depends on delay desired)			$0.19
Push button switch (any model)			
2 9-Volt Batteries (Cheap, but new ones)			
Small piece of breadboard			approx $1.00
24 gauge solid core insulated wire			
Soldering tools			
Solar Igniters (electric matches available at hobby stores)			
Mini Alligator clips (roach clips)			

*** NOTE: Any SPDT 6 volt, 500 ohm, 12 mA relay can be used instead of #275-004. Especially because #275-004 takes up a lot of room on the board.

*** NOTE: Many of the parts are sold in sets and you will only need one. So, if you build more than one detonator, you won't have to buy more of some parts.

Schematic Diagram of Circuit. (solder everything on breadboard)

```
                9 volt +
                  /|\                          For values of R1 and C1 see notes
 __________________|____________________       at the end of this phile.
|                  |        |          |
|              ____|8_______|4____     |
\             |                   |    |      D1
/ R1          |                   |3__________|\|_______o R x______________
\             |                   |           |/|  |      E                |
/             |       5 5 5       |    |           |    o L x________      |
|             |                   |    \           |    | A          |   - |
|             |    Integrated     |    / R2        |    | Y          |   -----
|____________7|      Circuit      |    \          _|__  |           LED   --- 9
|             |                   |    /           /\   |            |   + |  v
|____________6|                   |2___|      D2 /__\  |            |     |  o
|             |                   |    |           |    |            A     |  l
|             |___________________|    |           |____|            |     |  t
|                |1     |5          ---          |                 |     |
|       C1       |      |           --- Switch   |                 |_____|
|_______| (______|______|______________|___________|
        +               |                                        A= Alligator
                      -----         R2=10K ohms                     Clips
                       ---
                        - Ground (-)      ** note: no connection between pins
                                                   3 & 4.
```

The bottom of the relay has five pins. The pins here are marked with an "x" or an "o" corresponding to the schematic:

```
                          ____________________
                        |                    |
                        | x   o              |      RELAY SWITCH
                        |                    |      (bottom base)
                        |                    |
                        | N   o           x  |      N= not used
                        |___________________ |
```

The alligator clips should be attached to the breadboard using short pieces of wire.

The longer lead on the LED is the positive lead. Make sure you hook it up with the right polarity. Same rule goes for the capacitor.

The pins on the 555 IC are numbered from the top (side with paint & notch). On the left side the read DOWN as 1,2,3,4. On the right side the read DOWN 8,7,6,5.

TEST

Attach the two batteries and clip roach clips together, the LED will light. Press and hold the switch for 3 seconds. You should hear a click then the LED will go out. In a little while (depending on what capacitor and resistor size you use), you should hear another click and the LED will turn on again. If this doesn't happen, you phucked up! Check your circuit carefully.

USING DETONATOR

**** Read these instructions carefully before attempting this ****

If the TEST worked, the timer is ready to use. Attach two fresh batteries and connect the two roach clips. Allow time equivalent to your delay for the capactitor to charge. Now, press the switch until the LED goes out. Now, quickly but carefully attach the roach clips to the Solar Igniter that has been previously attached to your bomb. Then, get the phuck out of there!!! Once the time delay expires, the relay will open completing the second circuit and igniting the Solar Igniter.

Tech Note: The values of R1 and C1 determine the time delay. The greater these values, the longer the delay. The equation to determine time delay is as follows:

$$\text{Time (in seconds)} = \frac{\text{C1 (in farads)} \times \text{R1 (in ohms)}}{6}$$

The value of C1 is in farads. Most capacitors are listed in microfarads. To use the formula, divide the number of microfarads by 1,000,000.

Example: If you use a 500 microfarad capacitor for C1 and a 10 megaohm resistor for R1, you would have a delay of 14 minutes (833 seconds).

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