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# PIC VIRUS ZAPPER

ANDY FLIND



*Can disease be cured electronically?  
An experimental circuit for zapping viruses.*

NOT SO long ago the fascinating story of Dr. Royal Raymond Rife and his Rife Generator was related in the pages of *EPE* (An End To All Diseases – April '01 Supplement). This device was supposedly capable of curing many ailments including some cancers, and a large number of Internet sites devoted to it can be found.

However, it was complex and used a special valve similar to an X-ray device, which renders it difficult and possibly dangerous for most home constructors to experiment with. To compound the problem, no-one seems to be sure exactly how it worked, and apparently some of the remaining examples may even be “red herrings”, non-working devices constructed to discredit Dr. Rife during some political skulduggery!

For enthusiasts and experimenters with bio-electronic devices however, Royal Raymond is far from being the only source of interesting ideas. Another prominent worker in this field is Dr. Hulda Regehr Clark, the originator of a design for an electronic “Zapper” which is also claimed to cure most ills, including cancer. This device is very simple and can be built easily by anyone with electronic constructional knowledge, so it can be presented here for readers to try for themselves if they wish.

### UNDER COVER

As in Rife's case, there may be some political intrigue in the story of the Zapper. It was originally brought to the attention of *EPE* editorial staff some three years ago through an email from an enthusiast in New Zealand. A copy of this was forwarded to the present author who did not have Internet access at the time.

No details of the device were given but it was stated that they were to be found in a book entitled *The Cure For All Cancers* by Dr. Clark. At the time this book was listed with other works by her in an American catalogue, so it was suggested that *EPE* might order it via the Internet on the author's behalf. A prompt reply stated that Dr. Clark's books were out of print and no longer available, but something about its tone suggested that further

enquiries might be unwise! Being rather fond of life, both the author and *EPE*'s staff dropped the matter.

Since then time and the Internet have eliminated much of this kind of secrecy and an advertisement offering Dr. Clark's books has appeared in a magazine entitled *Nexus*, placed by a stockist in Devon, England, so a copy of the one containing the Zapper circuit was promptly ordered for study.

substances encountered in modern daily life. Dr. Clark says, obviously enough, that to cure the problem we should get rid of the flukes, stop ingesting isopropyl alcohol and flush out the toxins.

This is a simplified description of the book's main theme and readers wishing to learn more are advised to purchase a copy. The suggested treatment is partly herbal but consists largely of eliminating contact with the contaminants. Since these are contained in a vast array of processed foods and in materials such as plastics and products like shampoo and detergents some dedication would be required to follow the regimen to the letter.

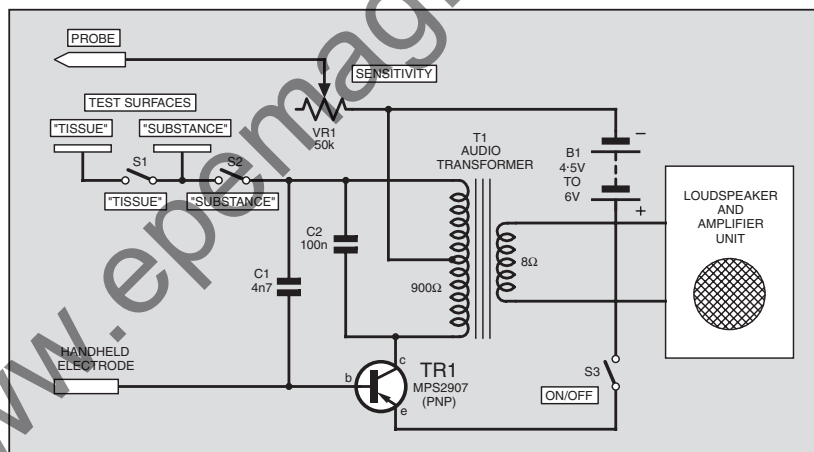


Fig.1. Circuit diagram for the Synchrometer.

Dr. Clark's theory is that all cancers have a common cause and can therefore be cured by the same means. She claims that most people have in their bodies tiny parasites called “Human Intestinal Flukes”. Normally these only live out part of their life cycles within us but the additional presence of a substance called “Isopropyl Alcohol” in our bodies causes them to remain within us for their cycle. During later parts of this they produce a growth-inducing substance that can trigger cancer. Many readers will know Isopropyl Alcohol as the stuff recommended for cleaning tape recorder heads, but it is apparently present in many other products.

The book also claims that most of us are contaminated by many other toxins, ranging from heavy metals to all kinds of unnatural chemicals originating from

It is also claimed that metals used in dentistry are harmful and should be removed. Whilst one of these is mercury, a highly toxic substance known to cause serious problems for some people, the usual alternative to mercury amalgam fillings is a type of plastic which also meets with disapproval. In short, the options for the true Clark treatment enthusiast are a bit thin.

### SYNCHROMETER

However, the book also offers a couple of electronic circuits. One of these is for a device called the Synchrometer, which is claimed to detect the presence of parasites and contaminants within the body. It uses “samples” placed on two test surfaces, plus a handheld electrode and a probe electrode.

The basic circuit diagram for the Synchrometer is shown in Fig.1. Readers

can decide for themselves whether they feel it would work or not. It has been redrawn for this article since the layout in the book is difficult to follow, to put it mildly.

It appears to be a form of oscillator with the bias current for the transistor passing through the user's body so that variations in body resistance will alter the frequency to some extent. Dr. Clark suggests that the 'quality' of the sound produced by the circuit alters in some way when the contaminant being tested for is present and she refers to this effect as "resonance".

Readers wishing to investigate this area are advised to purchase the book for further details as the procedures given for using this circuit are too complex to be described here.

## ZAPPER

The second circuit given is the Zapper, which has generated a great deal of interest. A quick search with one of the Internet search engines will reveal a large number of sites concerned with Dr. Clark and her Zapper and it is even possible to find circuits and construction details amongst these. Since it is easy to construct and use and so many people swear by its effectiveness, it is hard to dismiss the Zapper as "quackery" without putting it to a test.

The Zapper circuit given in the book is shown in Fig.2. It is essentially the standard 555 oscillator circuit, operating at about 28kHz. The user holds two electrodes connected to ground (negative) and

the output of the circuit (positive) so that a small current flows through the body, pulsed on and off at this frequency. This treatment is carried out for seven minutes, repeated three times in succession with intervals of twenty to thirty minutes.

The claim is that the first treatment kills the parasites and on dying these release bacteria and viruses, so the second is necessary to kill these and the third kills any remaining viruses released by dying bacteria. The book warns that once the first treatment has been administered it is unwise to miss the two follow-ups as released bacteria and viruses might cause havoc if not subsequently "zapped".

An interesting observation is that the current applied to the body is unidirectional, in that when energized one electrode is always positive and the other always negative. This is the opposite to the recommendation for most bio-electronic devices such as TENs pain-relievers, but the prevailing wisdom seems to be that the Zapper's current flow should be unidirectional. To date the author has not encountered any opinion as to which hand should be positive and which negative, or even if this matters!

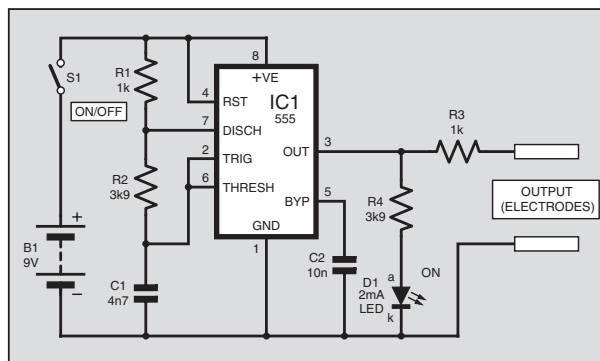


Fig.2. Circuit diagram for the original Zapper.

## ORIGINAL CIRCUIT

The original book circuit was tried using a standard 555 timer (IC1) in preference to one of the CMOS variants in case the transition speed of the output waveform was important. The only modifications to the original circuit are shown in Fig.3. These are the addition of a couple of supply decoupling capacitors C1 and C2 and the omission of the l.e.d.

Inclusion of the l.e.d. is supposed to indicate that the circuit is operating but it would not tell the user if a fault caused the output of the 555 to be permanently high! Most EPE readers will have better ways to check the output anyway, such as a meter which will indicate somewhere close to half the supply voltage if the circuit is operating, or an

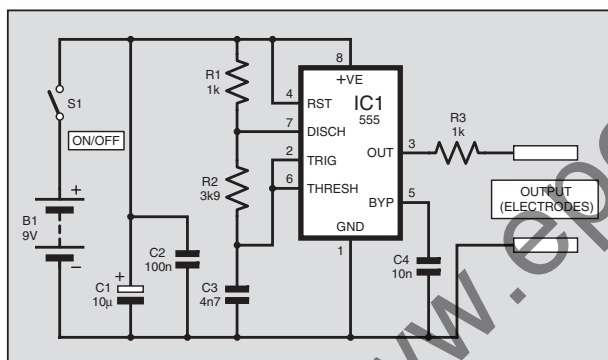


Fig.3. Original Zapper circuit with minor changes.

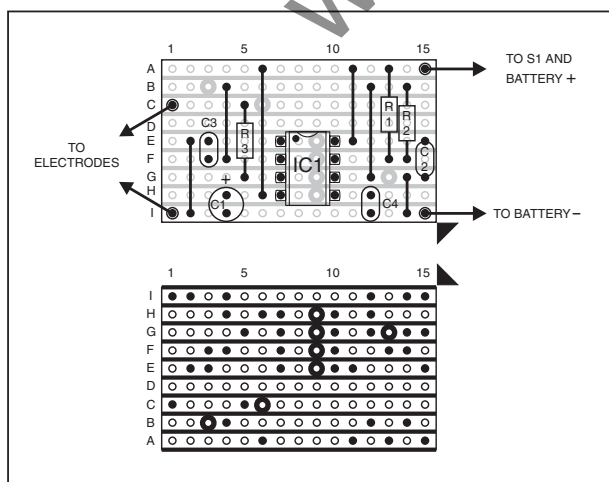


Fig.4. Stripboard construction of the original Zapper.

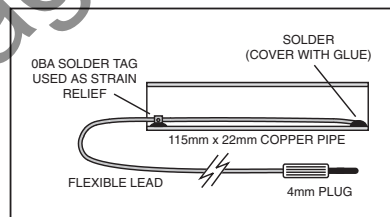


Fig.5. Suggested electrode construction.

## COMPONENTS

### Modified Original Zapper

#### Resistors

R1, R3 1k (2-off)  
R2 3k9  
All 0.6W 1% metal film

#### Capacitors

C1 10µ radial elect. 50V  
C2 100n ceramic  
C3 4n7 ceramic  
C4 10n ceramic

#### Semiconductors

IC1 555 timer

#### Miscellaneous

S1 s.p.s.t. toggle or slide switch

Stripboard 0.1in. matrix, 9 strips by 15 holes;  
8-pin d.i.l. socket; 9V battery (PP3 type); 22mm dia.  
copper tube for electrodes; solder tags (2 off);  
solder pins; solder etc.

Approx. Cost  
Guidance Only

£5

excluding electrodes & batt.





Completed PIC-based Virus Zapper together with copper tube electrodes.

oscilloscope for inspecting the output waveform.

The constructional method described in the book involves holes punched in a cardboard box and a lot of wire and croc clips! This is hardly a reliable form of construction so a simple layout using stripboard is shown in Fig.4.

Many constructors will already have the components to hand and will be able to put this circuit together very easily if they wish to simply try the idea. The handheld electrodes can be made from 22mm copper plumbing pipe. The method used by the author is shown in Fig.5. The connecting wire is soldered to the inside of each pipe and an OBA solder tag soldered inside at the other end is used for strain relief. Some glue spread over the solder connections prevents corrosion.

The electrodes should be wrapped in cloth or paper kitchen towel which has been dipped in water with a small amount of dissolved salt to aid conductivity for a good contact. One of these should be held in each hand and the treatment repeated three times as explained earlier. After use the electrodes should be well rinsed to avoid corrosion due to the salt.

## Summary

Enthusiasts for this device claim that it is effective in dealing with most viral

infections, some going so far as to claim they haven't had even a common cold in years! Apparently they either 'zap' every few days as a general precaution or they use it at the first signs of a cold or other illness before it has had time to take hold properly. Sounds worth trying at least, but the author is still waiting for the onset of a cold in order to experiment!

## NETWORK

A search on the Internet revealed further circuits for the device, some of which represent improvements on the original. One of these is shown in Fig.6 as an example of another circuit which could easily be put together from parts many readers will already have. However, these basic circuits are tedious to use because they involve clock-watching to time both the treatments and the intervals, or operation of a timer of some kind which is awkward when one is holding two electrodes which have been dipped in salt water!

Another design found on the Internet was for a PIC-driven device which provided not only the treatment but also all the timings, which struck the author as a particularly good idea. The purveyor of this circuit also felt that a lower operating frequency of about 2.5kHz was better as it would penetrate further into the user's body tissues.

This is probably so, but there seems to be a considerable body of opinion that the actual operating frequency of the Clark Zapper is relatively unimportant. Since EPE readers deserve only the best a PIC-driven design has been developed for this article and it has to be said that it is a much easier way to try out this form of treatment.

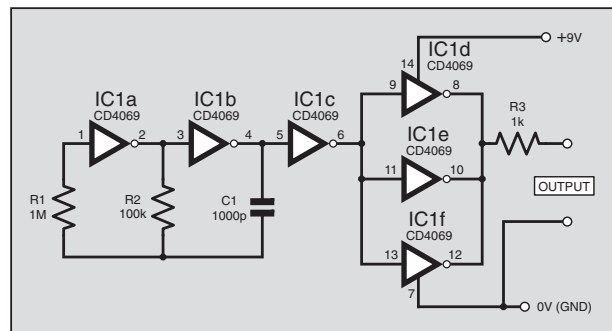


Fig.6. Another Zapper circuit from the Internet.

The status of the unit is indicated by three coloured l.e.d.s. A Yellow one indicates a treatment in progress, a Green one displays for the periods between each treatment, and a Red one warns the user when battery replacement is due. A bleeper indicates the start and end of each treatment, making it easy to use whilst watching TV or during any other occupation for which one normally sits still for an hour or so.

## PIC VIRUS ZAPPER

The full circuit diagram for the PIC Virus Zapper is shown in Fig.7. The main supply is provided by a 9V PP3 type battery. This voltage is too high for the PIC (IC2) so it is reduced to 5V by regulator IC1 which is a low-dropout micropower type, better suited for battery operation than the standard 78L05.

The PIC's oscillator uses a 4MHz crystal X1 to give an internal clock of 1MHz. The three l.e.d.s D1, D2 and D3 are low-current (2mA) types driven directly by IC2 through current limiting resistors R3 and R4. Since D2 and D3 are never "on" together they share the common resistor R4.

Bleeps are produced from piezoelectric sounder WD1. This is a type without an internal drive circuit as the author feels it is cheating to use a d.c.-operated type when the PIC can be programmed to generate a squarewave signal for sounder driving!

Battery voltage sensing is carried out by one of the PIC inputs (RB0). This "sees" an input voltage as being either "high" or "low" so preset potentiometer VR1 is adjusted so that it is seen as "low" when the battery voltage falls to about 7V. When this is detected red l.e.d. D1 is turned on.

The Zapper output is controlled by PIC outputs RB4 and RB5 which go high alternately. When RB4 goes high it turns on transistor TR1 which turns on TR2 to pull the output up to full battery supply voltage. When RB4 goes low RB5 goes high to turn on transistor TR3 to pull the output low. This generates a squarewave at the full battery supply voltage from a low impedance, suitable for application through the electrodes. Resistor R9 limits the maximum output current to a safe value if the electrodes are accidentally shorted together.

One further point regarding the circuit is the connection of RA0 and RB7 to the positive and negative supply lines respectively. This is simply for convenience in the physical layout where it enables these voltages to be routed around the printed circuit board (p.c.b.) without the need for "between pin" tracks.

Constructors who make their own p.c.b.s from the magazine artwork will probably appreciate this. One of the many advantages of designing with PIC microcontrollers is that it is perfectly acceptable to do this so long as the pins concerned are designated as inputs by the program.

## CONSTRUCTION

Most of the components for this project are mounted on a p.c.b. and the topside layout and full-size foil master are shown in Fig.8. This board is available from the EPE PCB Service, code 337.

Assembly should present no real problems for most constructors. An 18-pin d.i.l.

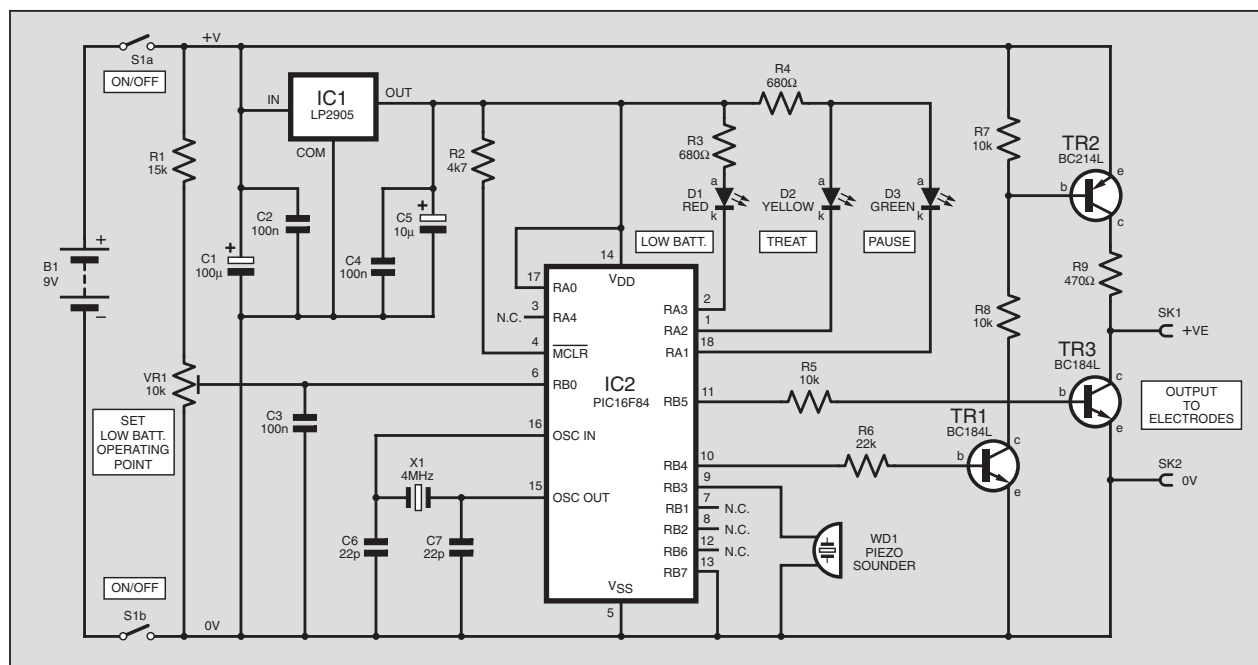


Fig. 7. Complete circuit diagram for the PIC Virus Zapper.

## COMPONENTS

### PIC-based Zapper

#### Resistors

R1	15k
R2	4k7
R3, R4	680Ω (2 off)
R5, R7, R8	10k (3 off)
R6	22k
R9	470Ω

All 0.6W 1% metal film

#### Potentiometer

VR1	10k 22-turn cermet preset, vertical
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#### Capacitors

C1	100μ radial elect. 16V
C2, C3, C4	100n ceramic (3 off)
C5	10μ radial elect. 50V
C6, C7	22p ceramic

#### Semiconductors

D1	2mA red l.e.d.
D2	2mA yellow l.e.d.
D3	2mA green l.e.d.
TR1, TR3	BC184L npn silicon transistor (2-off)
TR2	BC214L pnp silicon transistor
IC1	LP2905 5V micropower positive regulator
IC2	PIC16F84 microcontroller, pre-programmed

#### Miscellaneous

X1	4MHz crystal
WD1	piezo sounder, 4kHz
S1	d.p.d.t. slide switch
SK1, SK2	4mm chassis socket and plug (1 red, 1 black)

Printed circuit board available from the EPE PCB Service, code 337; case, size 34mm x 80mm x 145mm; 18-pin d.i.l. socket; multistrand connecting wire; 22mm dia. copper tube for electrodes; solder tags (2 off); solder pins; solder etc.

Approx. Cost  
Guidance Only **£0.22**  
excluding electrodes & batt.

## EPE PIC VIRUS ZAPPER

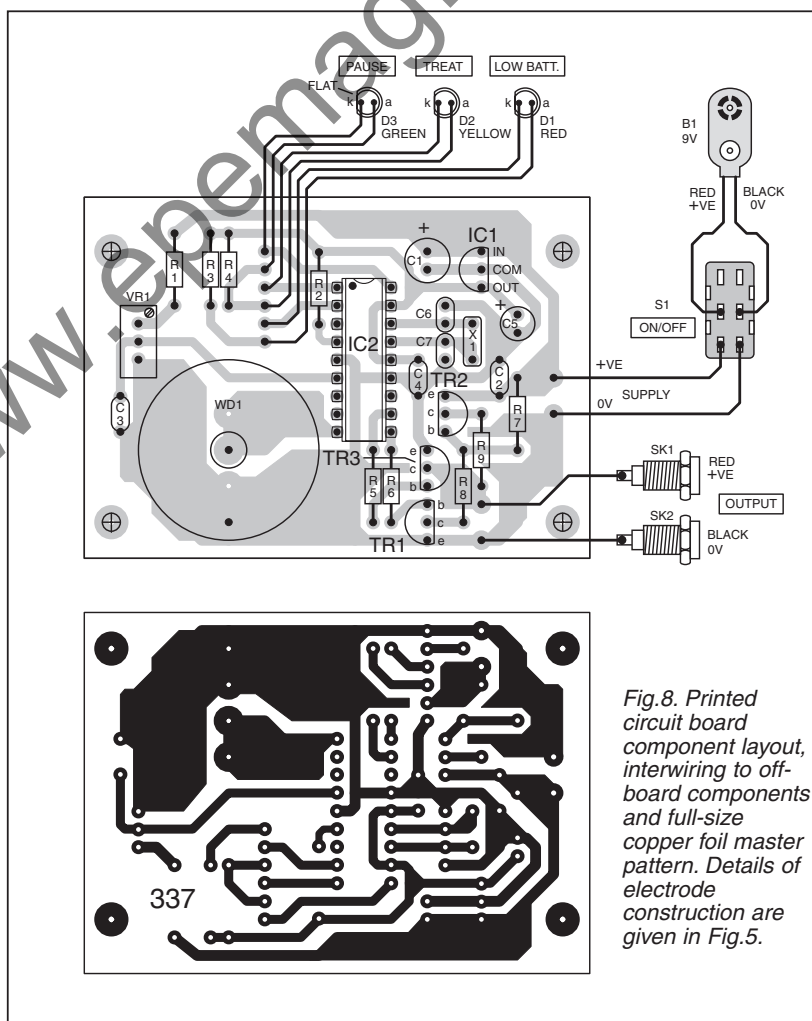
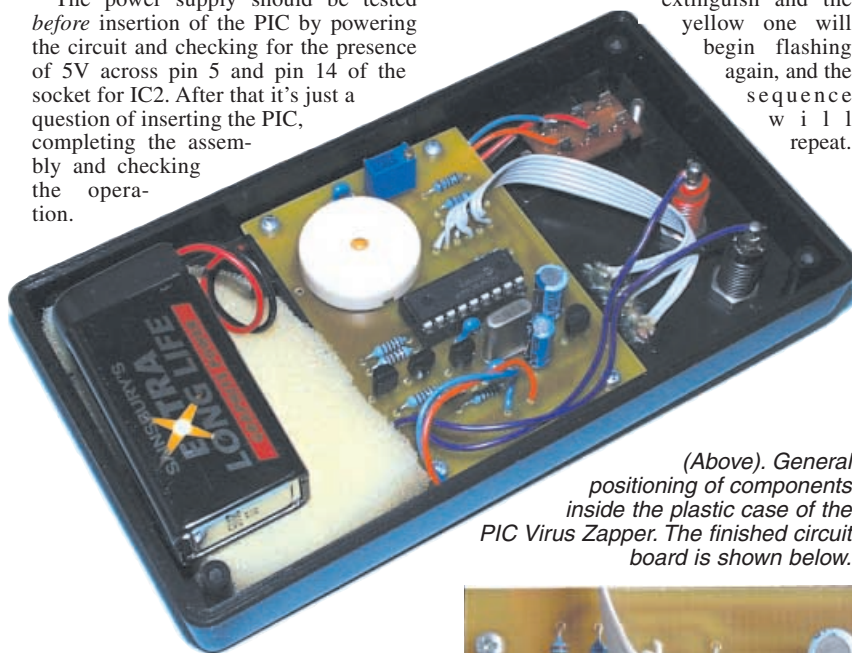


Fig. 8. Printed circuit board component layout, interwiring to off-board components and full-size copper foil master pattern. Details of electrode construction are given in Fig. 5.

socket is recommended for the PIC, IC2. Two different types of sounder can be used for WD1 so holes are provided to suit the pins of either. The type used should have a resonant frequency of 4kHz as this is the drive frequency used and these devices generate a lot more noise at resonance.

The power supply should be tested *before* insertion of the PIC by powering the circuit and checking for the presence of 5V across pin 5 and pin 14 of the socket for IC2. After that it's just a question of inserting the PIC, completing the assembly and checking the operation.



(Above). General positioning of components inside the plastic case of the PIC Virus Zapper. The finished circuit board is shown below.

## ASSEMBLY

The board is designed to fit onto the mounting pillars of a widely available and inexpensive plastic case (with battery compartment) measuring just 145mm × 80mm × 34mm. Interwiring from the circuit board to off-board components is also included in Fig.8. Two robust 4mm sockets are used for the electrode lead connections and the slide switch S1 is fitted for turning the unit on and off.

The three l.e.d.s are connected using a short length of ribbon cable and glued into position. The actual soldering of the ribbon cable to the l.e.d.s should be done as quickly as possible, as one of these failed on the prototype and it seems likely that heat from soldering was the cause.

Because the sounder is inside the case its sound is muffled to some extent and it was found that the bleeps could sometimes be missed when watching television. A row of five small holes drilled in the side of the rear half of the case adjacent to the sounder overcame this problem.

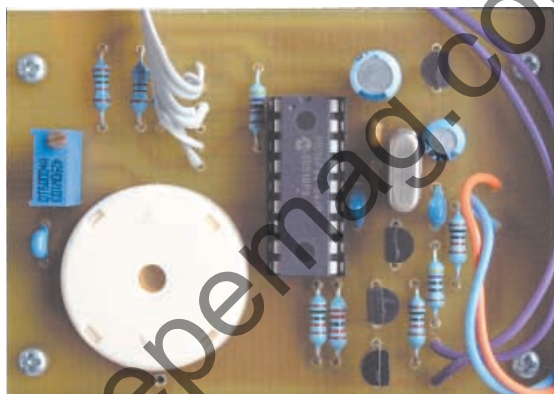
## SETTING UP

It is necessary to set up preset VR1 to the correct point. If an adjustable power supply is available this can be set to about 7V and VR1 adjusted so that the Red l.e.d. D1 just illuminates.

Immediately following switch-on, the unit should bleep once and the Yellow l.e.d. D2 should flash for thirty seconds. This allows the user to moisten the electrodes and take a firm hold of them before treatment commences. After this there will be another bleep and the Yellow l.e.d. will stay on continuously for seven minutes. During this period the output should be present so a meter across it will read about half the battery supply voltage or an

oscilloscope will show the 2.5kHz output squarewave.

Next there will be a further bleep, the Yellow l.e.d. will extinguish and the Green one (D3) will light to indicate the interval between treatments. After 28 minutes there will be a further bleep, the green l.e.d. will extinguish and the yellow one will begin flashing again, and the sequence will repeat.



This should happen once more, but following the third treatment the green l.e.d. should remain on indefinitely and the unit should bleep every five seconds to remind the user to switch off.

Supply current taken by the circuit varies according to the stage reached in the program but the prototype takes about 4mA when flashing l.e.d. D2 and about 7mA plus whatever is delivered through the electrodes (usually about 2mA) when treating, and about 6mA during the intervals. This is small enough to allow a lot of use from an alkaline PP3 battery.

## SOFTWARE

The software for the PIC Virus Zapper is available on a 3.5 inch PC-compatible disk from the EPE Editorial office, for which a nominal handling charge is made. It is available for free download from the EPE ftp site. More details are given on the EPE PCB Service page.

Ready-programmed PIC16F84s are being made available to readers by the author. For further details see the *Shoptalk* page.

## SUMMING UP

So there you have it, a de-luxe Dr. Clark Zapper as good as any likely to be

## Further Reading

*The Cure For All Cancers* – Dr. Hulda Regehr Clark, New Century Press (US). ISBN1-890035-00-9. Melanie Davies, The Cottage, Bovisand Lane, Down Thomas, Devon, PL9 0AE. Phone: 01752 862411 (UK suppliers of Dr. Hulda Clark's books)

### Interesting Zapper websites:

[www.zapperplans.com/plans.html](http://www.zapperplans.com/plans.html) (circuit of Fig.5, how to construct).

[www.drclark.net/disease/zapper.htm](http://www.drclark.net/disease/zapper.htm) more info on Dr. Clark and the zapper.

[www.rlf.com/hulda\\_clark.html](http://www.rlf.com/hulda_clark.html) (an objective review of Dr. Clark's books).

[www.ess-in.com/index.htm](http://www.ess-in.com/index.htm) (view pictures of two commercially produced zappers).

[www.home.att.net/~dennis.shepard/health.htm](http://www.home.att.net/~dennis.shepard/health.htm) (another site selling a zapper, pdf file about it).

[www.huldaclark.com/BuildZapper.htm](http://www.huldaclark.com/BuildZapper.htm) (book sales and construction details).

[www.zapperplans.com/plans.html](http://www.zapperplans.com/plans.html) (pdf file of a PIC-based circuit, no program given).

found on the Internet or elsewhere and certainly much better than the one described in the book! It can be built for a fraction of the price of those available ready-made.

Does it work? American Internet sites offering Zappers all state that they are *not* approved by the FDA (their official government medical body) and are "for experimental use only" but at least their sale hasn't been banned yet.

To date, it's too early for the author to give an opinion one way or the other, but there are a lot of users who praise this little device so it's worth trying. As always with experimental projects of this type, feedback from readers who build and try it will be most welcome as this may eventually prove its worth. □

