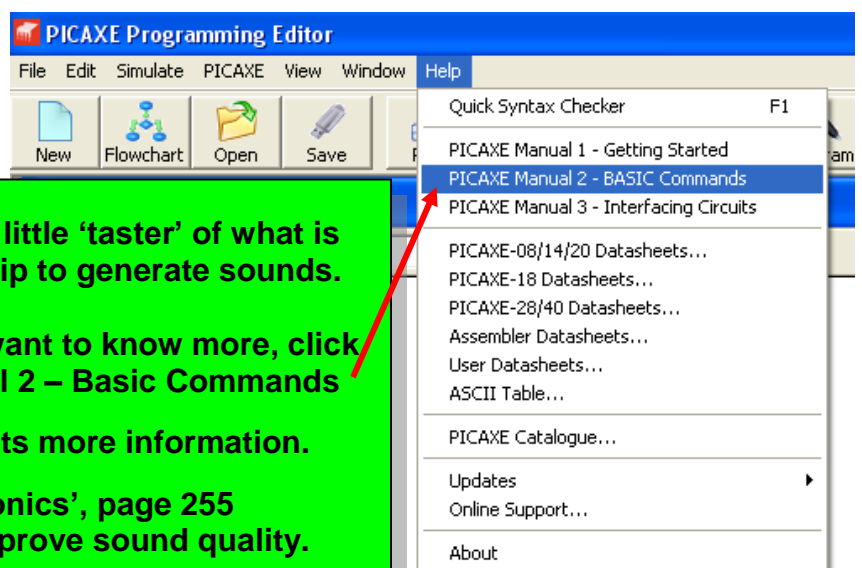
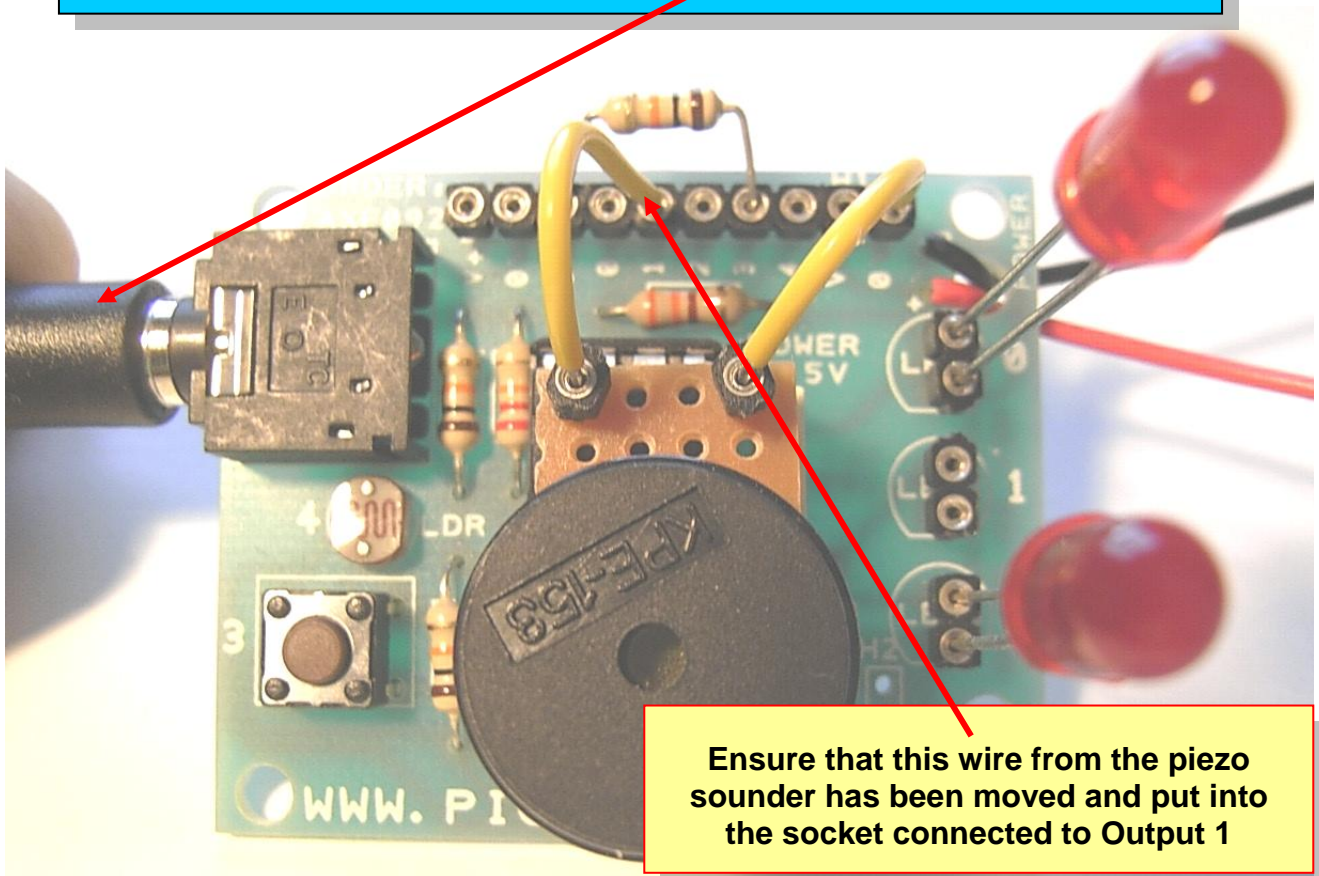


# Practical PICAXE for novices

## More about generating sounds

We are using the same set up as for the SOS when dark program. This time, so the PICAXE chip can return information about which note is playing, we must leave the download cable in the socket.



This section is just to give a little 'taster' of what is possible, using a PICAXE chip to generate sounds.

If you like what you see and want to know more, click on Help then PICAXE Manual 2 – Basic Commands

The Tune command has lots more information.

If you are 'into electronics', page 255 explains how to greatly improve sound quality.

# Practical PICAXE for novices

## Finding a sound that you like

The PICAXE sound command uses numbers 1 to 127 to generate tones in ascending order. Numbers 127 to 255 generate 'white noise'.

This simple program automatically counts through all of these to let you see which one best suits your program.

You should find that piezo sounders work best with higher frequency notes.

```
** Electek4U Practical PICAXE Programming for novices *  
***** choosing a suitable sound for your program *  
  
unders are at their loudest when the sound command pitch,  
pens to hit the 'resonant' frequency of that piezo sounder  
the program will be
```

```
leave the download  
which sends information
```

```
te = b0
```

```
note = 1 to 255 step 1  
u can remove the step 1  
= step rate to work
```

pins	0	\$00	%00000000	---
dirs	4	\$04	%00000100	---
b0 note	85	\$55	%01010101	'U'
b1	0	\$00	%00000000	---
b2	0	\$00	%00000000	---
b3	0	\$00	%00000000	---
b4	0	\$00	%00000000	---
b5	0	\$00	%00000000	---
b6	0	\$00	%00000000	---
b7	0	\$00	%00000000	---
b8	0	\$00	%00000000	---
b9	0	\$00	%00000000	---
b10	0	\$00	%00000000	---
b11	0	\$00	%00000000	---
b12	0	\$00	%00000000	---
b13	0	\$00	%00000000	---

Frequency:   
Debug frequency: m4 - 4 MHz   
If the program uses 'setfreq' the debug command may not work if the setfreq frequency in the program is not the same as selected

As the program runs, the debug command will update this window allowing you to see the number of each note as it is stored in register b0.

```
ug  
nd information back  
ing on in the regis  
  
t note ;get the n  
hat happens when no
```

Click below to  
copy this  
program to  
your computer

[Click here  
to download](#)

From the comment at the top of this page,  
you could be forgiven for thinking  
"what on Earth is white noise"?

What possible use could it be?

The next page will reveal something surprising!

# Practical PICAXE for novices

## Amazing engine noises

In 2008 I came across a video on You Tube of a marine engine sound unit. It was published by Alan Bond of the Solent Radio Control Model Boat Club.

There was I, playing around with simple control programs, and here was an Engineer generating the most amazing range of engine sounds using the white noise generated by a basic 08M PICAXE chip.

He had also published his source codes ~ reading them, I felt suitably humbled. Unfortunately these source codes are now copyright as this is now a commercial product.

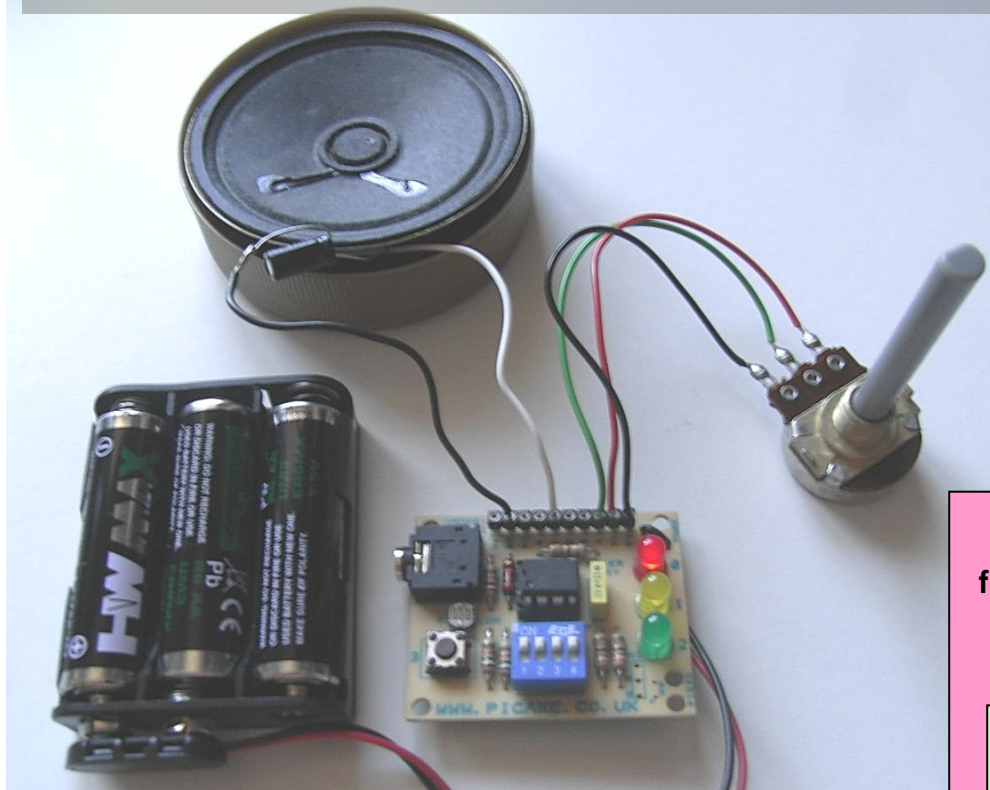
A description by me could not do it justice so click on the links below and I hope that you are as amazed as I was. These are not recorded sounds, they are generated using the PICAXE basic language that you are learning!

### Links to Alan Bonds' videos

steam engine video <http://www.youtube.com/watch?v=M8SYbL4F7EM>

petrol engine video <http://www.youtube.com/watch?v=pX3biLUAtkl>

This is my set-up for playing them on a Schools experimenter board. I had hoped to show you how to do this too, but copyright now prevents it.



Click below  
for my steam  
engine  
program

[Click here  
to download](#)

### STOP PRESS

I just found the time to write my own simplified version of steam engine sounds to give you an insight into how these sounds can be programmed.

Your PCB will work as it is.

Click on the link in the pink box above right.