

# My Portable Helicopter

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As shown in [portable-helicopter.jpg](#), it consists of a Vifa type PL18WO-17-04 6" speaker in a sealed 0.18 cubic foot enclosure with a TDL model 803 sound effects board and two 9 VDC battery packs attached to the top enclosure surface.

The model 803 uses an ISD2560 analog memory holding 60 seconds of sound. It is fully described in [masking.zip](#) included in this Addendum. The ISD IC has a bandwidth of only 3400 Hz so I needed a fairly low-frequency sound effect. I found a synthesized helicopter file on [www.freesound.org](http://www.freesound.org) which worked nicely.

The ISD2560 is available on ebay so this circuit is still useful: it's easy to program and the 803 circuit board has a built-in low-power, power amplifier which makes for a self-contained unit. I used the microphone input for programming the helicopter file because it gave a better output sound than the line input. The programming source was the computer's sound card line out. You do need a voltmeter to monitor the input programming level to the 803 as described in the [masking.zip](#) file (or in the original Nuts&Volts magazine article, September 2002) There is additional 803 info in this file which is downloadable from the TDL web site, [www.tdl-tech.com/user803.zip](http://www.tdl-tech.com/user803.zip).

The speaker enclosure is 3/4" thick MDF so it is a bit heavy but the shoulder strap made it fairly convenient to carry around while testing the microphones. I used a medium volume level and picked a day with a low wind velocity (less than 5 mph) to minimize wind noise.

Each battery pack uses six AA size cells. They can be rechargeable or non-rechargeable alkaline. All things considered, this makes for a convenient portable sound effects machine.