

The PI's Homemade Air Conditioner

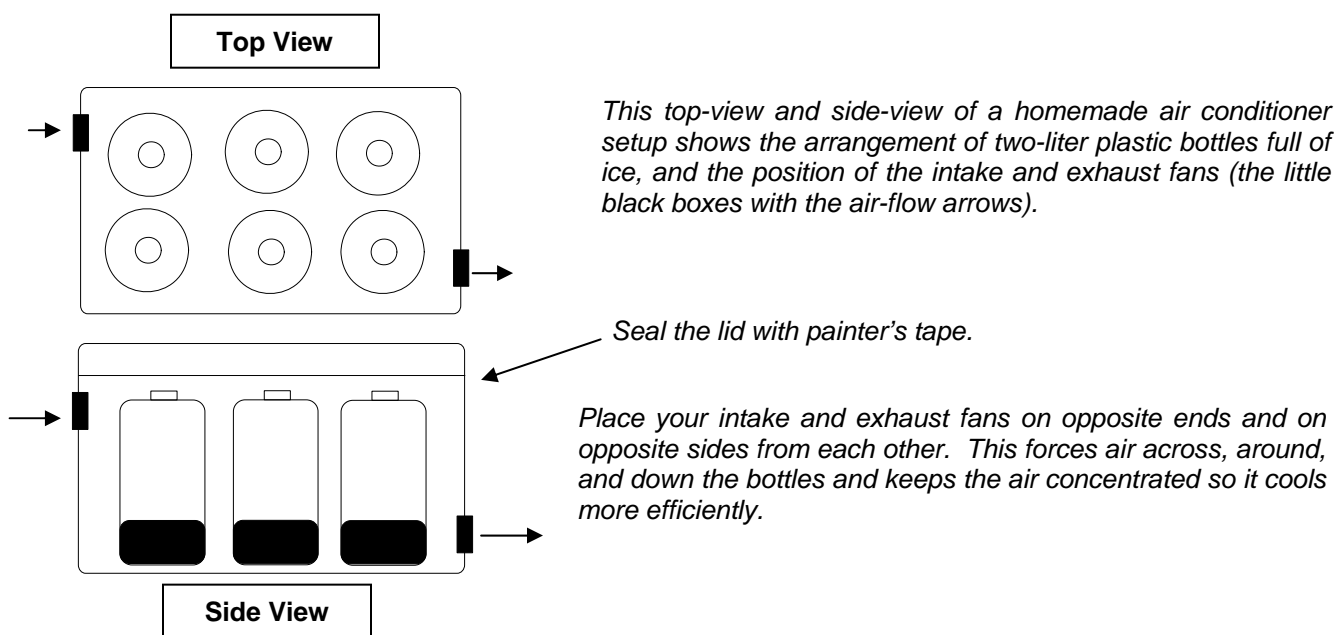
How to Survive a Summer Surveillance

As cold as winters have been lately a lot of us say "Global warming? Yeah, right!" But then summer rolls around...

To make things worse, Murphy's Law will dictate that you'll be out pulling surveillance smack dab in the middle of the hottest days of the year. And since you can't run the engine while on a covert assignment, what are you going to do? Some commercial in-vehicle AC units are available, but the really good ones are incredibly expensive and the cheaper ones just don't work.

This little improvised air conditioner will help take the edge off and make life in the surveillance vehicle bearable. Not only that, but it's very inexpensive, easy to make, rather effective, and you can use it over and over again.

Here's the diagram for your own in-vehicle, battery-powered air conditioner:



Here's what you'll need and how to put it all together:

- Set your household freezer to its lowest possible setting. Take six 2-liter plastic bottles, fill them with water to about two inches from the top and put them in the freezer. It'll take a full day for them to freeze solid, and the empty two inches will allow for ice expansion. If a bottle cracks, don't use it. A cracked bottle would only leak water as the ice thawed.
- Get a large and inexpensive styrofoam cooler with a lid. You'll want it to be around three feet long, two feet wide and two feet deep; at least big enough to hold your six 2-liter bottles with some air-flow space in between them.
- Go to your favorite "dollar store" or "mega-mart" and get two battery-powered, hand held "personal fans." You see them a lot at sporting events where people are fanning their face. They have a short stubby body and run on a single C-Cell or D-Cell battery, and they have an exposed fan blade on one end. (You can substitute these fans with slightly more robust models that run off a spare vehicle battery such as a deep-cycle marine battery. With all these improvised gizmos, go with what you've got or what you can afford. Remember though, don't plan on using your vehicle's battery since the reason you'd use this AC unit is in situations where you couldn't run the vehicle to keep the battery charged.)
- Cut a three or four inch hole in each end. On one end, make the hole high near the top edge. On the other end, make the hole low, about three inches from the bottom (measuring on the inside of the cooler). Also

make the holes on opposite sides of the box so when you're looking from one hole to the next, you're looking both down and diagonally across the cooler.

Take your frozen two-liter plastic bottles of water out of the freezer and set them inside the cooler spacing them so that air can flow between them.

Arrange one of your battery-operated personal fans near the upper hole on one end of the cooler. Mount it inside with the fan blowing into the cooler (you can hold it in place with duct tape). Mount the other fan on the outside of the cooler at the opposite hole. Have the fan pointing outward. This fan arrangement will draw air into the cooler, across the bottles and force the air out the bottom hole on the other side.

Having the exhaust hole near the bottom of the cooler and the first one near the top will force air across and down between the bottles and vent the colder air that settles. Also, having your exit hole three inches up from the bottom creates a lip inside the cooler to collect condensation so it won't dribble on your upholstery.

● **Note 1:** This little unit won't cool your vehicle down to "wear a parka" level, but in the average sized van it could really help. Having 2 or 3 of these units is even better.

● **Note 2:** Since heat rises and cold settles, set this unit as high as possible inside your vehicle. This way it will draw in the warm air, and the cold air will settle on you.

● **Note 3:** Don't use bagged ice. Bagged ice does start off colder, but as it melts the bags collapse and air no longer circulates around them. Use the bottles since they keep their shape.

● **Note 4:** Don't just fill the cooler with ice and blow air across the top. There's not enough surface area for good cooling efficiency, and the melting exposed ice will actually *add* humidity to your vehicle, whereas the bottles will cause condensation *inside* the cooler and *remove* humidity making the heat more bearable.

● **Note 5:** Be sure to have extra batteries on hand for your fans.

Other tips to keep you cool on a hot summer surveillance:

- ◆ When driving to your surveillance spot, run your vehicle's AC as much as you can to pre-cool.
- ◆ Park in the shade if at all possible or in a spot that might receive shade as the day wears on.
- ◆ Tint your windows if you can.
- ◆ Shade other windows as able.
- ◆ Drink cool beverages.
- ◆ Don't eat a large meal beforehand.
- ◆ Inside the van, go "as bare as you dare" since exposed skin keeps you cooler.
- ◆ Have an additional battery-powered fan pointed at you.
- ◆ Minimize the use of heat-producing electronics such as your laptop computer.

As your bottles thaw out you can drink the cool water, or you can just leave them sealed and pop them in the freezer when you get home. If you have room for a second cooler in your van, you can swap out the thawed bottles for fresher cold ones and keep your little AC unit running.

Now that you know a new tip, are you ready to go try it? Well then that means you might need to go out and pick up a surveillance case! If you haven't read it already, we have a no-cost ebook entitled "Marketing for Private Investigators." Simply click here on "[Marketing Ebook](#)," sign up for our newsletter and you'll be sent the download link.

Also, for those of you who have not made the investment of having your own copy of "[The Case File](#)," we have a small discount for you. Use code # **697763720** for a **\$5 discount** when checking out (you'll see the box asking for a code #).

###

© 2010 – Paul Purcell. Permission granted to share this article with others provided it is distributed for free, and that all portions, including footnotes and "About the Author" sections remain intact and attached.

About the author: Paul Purcell is VP and Co-Owner of InfoQuest in Atlanta, GA. He is a licensed private investigator, state-licensed PI classroom and firearms instructor, and is the author of "The Case File" found at www.thecasefile.com. He's also the author of "Disaster Prep 101" found at www.disasterprep101.com.