

Life in a less-toxic and solar powered travel trailer



Some people with environmental illnesses (MCS/EHS) live in camping trailers, with no permanent address. This makes it possible to live in clean air at a low cost, but it is not as good as a well-made less-toxic house and the lifestyle is not for everyone.

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Why a travel trailer?

Joe (not his real name) became sick while living in the state of Georgia. He could not tolerate his house and had to live on his covered porch for two years.

Realizing the situation was not improving, he decided to head for the Southwest. He rented an MCS house near Dolan Springs in Arizona for three years. He did very well in the house, but the rent was too high for his Social Security disability

income, and he couldn't find anything else that was safe and affordable. He realized that the only option he could afford was a travel trailer.

The camping trailer

Camping trailers are not the ideal MCS home. They contain a lot of particle board and plastic, so it takes 7 to 10 years for them to offgas. Used trailers tend to be contaminated with fragrances and pesticides and after some years almost any trailer will be moldy from roof leaks, leaky plumbing and condensation inside the walls.

Fortunately, Joe lived in the dry desert where it is possible to find used trailers that are not moldy. He started checking out RV dealers in Las Vegas. He was intrigued by the CampLite camping trailers that had just come on the market, but they were too costly. The Airstream trailers that some EIs use were also too expensive.

Camping trailers tend to fall apart after 6-10 years, except for the expensive brands, such as Airstream, Avion and perhaps CampLite. There are not many trailers which survive long enough to be decently offgassed.

Joe looked for used trailers on the web and went to look at more than twenty before he bought one that was ten years old (2001 model year). It was in good condition and was affordable. It smelled strongly of fragrances, especially on a hot, sunny day, so that had to be addressed.

Modifying the trailer

A full renovation of an MCS trailer involves stripping it totally to the bare outer walls, then totally replacing the insulation, flooring, cabinets, etc. That is very costly and was beyond Joe's financial means. It also did not make any sense to spend all that money on the low-cost trailer he bought.

He had a friend who had modified a trailer for his own use and hired him to do some work. The friend stripped out the carpet and the built-in furniture, but left the cabinets and subfloor. The walls had vinyl wallpaper, which was also left in place.

The trailer was then thoroughly cleaned and aired out for a while. Then it was time to seal up the cracks and surfaces.

Every light fixture was taken out, cleaned and the small air holes sealed with electrical tape. Likewise, this was done around all pipe penetrations.

The carpet was removed and the subfloor covered with Tu-Tuff (polyethylene plastic) held together with aluminum tape. Then porcelain tiles were placed loosely on top (not glued or cemented). Ceramic tiles are not strong enough, and thinset would crack.

The vinyl wallpaper was painted over with Murco M-100 in an attempt to seal it. It didn't really help, as M-100 is very porous.

The sliding door into the bathroom was wrapped in 3 ft (1 m) wide aluminum foil and then painted with Murco M-100.

Some wood trim was replaced by poplar, which is a less aromatic type of wood.



The built-in sofa was removed. The cabinets were left in place and sealed.

Joe wanted to be able to sell the trailer if it did not work for him, so they did not remove the cabinets, air ducts, heater and AC unit as some people do. Instead, the inner surfaces of the cabinets were covered with aluminum foil. The foil didn't last, so it was later replaced with Tu-Tuff.

The built-in sofa was removed and put in storage.



The carpet was replaced with loose porcelain tiles on top of Tu-Tuff (polyethylene) plastic.

This is not a primer on how to make a trailer MCS safe; the above are just the main points and it is not a complete list of the work done.

I visited Joe in April 2011, three months after the conversion had been finished. The trailer sat in the sun and was very hot inside. It still had a strong fragrance smell to it. The trailer was aired out as much as possible and by July Joe moved into it, though he slept in the back of his truck and didn't spend much time inside, initially. A year later he was able to spend a lot of time inside with the windows open, but he still had to sleep in the back of his truck.

Electricity

The travel trailer is powered by the sun, which is plentiful in Arizona. Joe has two solar panels that charge two golf cart batteries during the day. The solar panels have a total capacity of 200 watts. This system powers the lights, water pressure

pump, propane appliance controls, laptop computer and satellite radio in the trailer. It also charges the cell phone and the Kindle book reader.

Joe uses much less electricity than the average American. Some people would need a larger solar system, especially in a less sunny climate.

He used to have a 120 watt solar panel and two RV/marine batteries, which was too small a system. The batteries were deep cycled too often, so they had to be replaced every year. He also had to run the generator quite often to charge the batteries during the winter months.

The system is pure 12 volt DC. There is no inverter, as they are unhealthy. He uses an ASC charge controller from Specialty Concepts, as this model does not create dirty electricity.

He has a small Honda EU2000i portable generator to charge the batteries during overcast winter days. The generator was modified by a Honda service center to run on propane, using a conversion kit from Central Maine Diesel. Propane is the cleanest fuel and much less hazardous to transport than gasoline or diesel.

Water

Joe has a 35 gallon (133 liter) plastic tank in the back of his truck, which he uses to haul water from whichever faucet he can find. He then transfers the water to the trailer's holding tank, or uses it directly, such as for washing clothes. He uses a small 12 volt pump to move the water.

He often camps in places where he has to drive several miles to get water and thinks the perfect size tank is 65 gallons (250 liter), as he can use 50 gallons on laundry day.

He has figured out many ways to save water, such as washing dishes using a spray bottle and taking very brief showers. He is now able to get by on just 5 gallons (20 liters) of water a day, not including laundry use and drinking water. His drinking water is handled separately. He has a set of one-gallon (3.8 liter) glass bottles which he fills at coin-operated reverse-osmosis water machines in town.

Appliances

Propane is used for cooking, hot water and the refrigerator. The water heater and refrigerator are built-in and vented directly to the outside. Cooking is done on a table outside, using a camp stove.

The outdoor cooking works well, except if there are high winds or it rains hard. This method of cooking works pretty well in the Arizona climate.

The trailer came with a forced-air propane heater, which Joe only uses on cold days and when he is not inside. It does not work well for him. As he camps in remote areas without electrical service, it is not possible to use electric space heaters or air conditioning. (The solar system is much too small to power them.)

The water heater is a standard RV model, with just a 5 gallon (18 liter) tank, so there is water for only a brief shower. He turns it on when he needs to take a shower, and otherwise leaves it off, due to the gas exhaust.

Communication

Joe uses a cell phone with a headset and 10 foot (3 m) extension cord, so he can stand back from the phone while talking. He often uses the phone in rural areas, far from cell towers, so the phone has to transmit more powerfully to reach the nearest tower.

He uses a laptop computer for e-mail and cruising the web. The internet connection is wireless, using a wireless card in the computer and a long cable to a directional antenna outside. The detached antenna lessens Joe's EMF exposures dramatically; it can be seen in the picture on the first page.

Storage

He has very little storage space in his trailer and truck. With such small airspaces, he also has to be very sure he really tolerates whatever he keeps inside. The inside of his trailer is very sparse.

He uses a Kindle digital book reader to keep his books, and uses his laptop computer to store photos and watch DVDs.

He rents a storage locker in Kingman, where he stores parts he removed from his trailer, spare floor tiles, and all sorts of personal items. The facility does not pesticide, so it is used by other people with MCS as well.

Camping together

Joe teams up with a friend for parts of the year. She lives in a 25 ft (8 m) 2004 Airstream International CCD, which has aluminum interior walls. A lot of work was still needed to make it MCS-safe, such as tiling the floor, removing the roof AC system, removing the couch, foiling cabinets, etc.

It is nice to have company, and it works much better when each has a separate trailer. The second winter, Joe camped together with two MCS/EHS friends.

Where to camp

There are lots of RV campgrounds, but many of them cost almost as much as renting a house and there are often problems with the neighbors' use of firewood, bug spray, etc.

Another issue is the temperature. A trailer is poorly insulated, and with no heat or AC it is important to camp in a comfortable climate. Joe has spent the winters in the low desert of southwest Arizona, mostly on public lands around Quartzsite and Bouse. The Bureau of Land Management (BLM) operates no-frills campgrounds south of Quartzsite, where there is lots of room and one can camp for seven months for a total cost of less than \$200. The daytime temperatures in January are usually in the 60s (around 15° C), with nighttime temperatures rarely below freezing. This area is way too hot to camp in during the summer, however.



Three EIs camping near Bouse, Arizona. Joe's trailer is in the rear right side.

For the summer, Joe heads to the cooler elevations of northern Arizona. He has camped in various parts of the forests around Flagstaff and Sedona, which are free when camping along a Forest Service road, but the law allows only a 14-day stay in each place.

Most of the summers he has camped in the yard of various friends in the Snowflake area.

Daily life in the trailer

Trailer life is a lot more work than you may think. When Joe is camping in the forest, he has to move every two weeks. Packing up and stowing for travel, connecting the trailer to the truck, driving to a new location, then disconnecting and leveling the trailer and unpacking again takes all day. He has to make two trips, as he has both a truck and a car. The truck is used to pull the trailer on the first trip and towing the car on the second trip.

It is also costly to move, as he has to maintain a big truck powerful enough to haul the heavy trailer. It gets 15 mpg (6 km/l) in normal driving and only 7 mpg (3 km/l) when hauling the trailer. A friend has a diesel truck which gets 17 mpg (7 km/l) normally and 12 mpg (5 km/l) when hauling her 25-ft trailer, but diesel trucks are costly to buy.

He has to go to town every few days to get drinking water from vending machines, and fill up the water tank in the back of his truck. While in town he also picks up mail at the post office and perhaps does some shopping.

As he typically camps far away from any larger town, he often has to drive 30 to 50 miles (50-80 km) to find organic and natural foods. The trailer only has a small propane refrigerator, so he cannot store a lot of food. He uses the little car for most such trips, as it is much more economical.

The blackwater from the toilet has to be disposed of every two to three weeks. He dumps it from the trailer's holding tank to a sewage caddy on wheels. If he is camping in someone's yard, he then drags the sewage caddy over to their septic tank and dumps the load there. When camping in the open country, he has to lift the heavy caddy up into his truck and drive it to an RV dump station. The graywater from the shower is usually dumped out on the ground.

Using a laundromat would contaminate his clothes and he is reluctant to bring a new washing machine into his small living space, so he washes by hand using a plunger-like washing device and a galvanized steel tub, both from Lehman's store in Ohio. This works well.



*Washing clothes in front of a friend's trailer,
using a plunger-like washing device and a galvanized steel tub.*

He sleeps in the back of his pickup truck, which has a shell over the bed. The space is not heated and not much warmer than a tent, but he is comfortable with a good sleeping bag. It is not pleasant to get up on cold mornings, and there is no warm bathroom to welcome him.

As the trailer is so poorly insulated, it usually warms up after a few hours in the winter sun, but it also quickly cools down after sunset.

Upkeep

There is more upkeep with a trailer than there is for a house. All the parts in a trailer are more flimsy in order to save weight.

Joe checks all the caulking several times a year, both on the roof, the slideout and around the windows. This is extremely important, as leaks will generate mold, even in the desert. He uses the toxic sealants recommended for RVs. They cure quickly and don't smell after a few days. The less-toxic caulks simply do not hold up to this rough environment.

The floor tiles are loose, so dirt gathers between and under them. About once a year they are pulled up and the Tu-Tuff underneath is vacuumed. These floating tiles break more easily, so Joe keeps spares on hand.

Three years of trailer life

Joe has been living in his trailer for three years as of this writing. He can spend his days inside the trailer as long as the windows are open, but he still needs to sleep in the back of his truck. It is not a very comfortable life and he looks forward to the day he can afford a safe house, which may not be for quite a while yet. He is also thinking about buying a piece of land and putting up a carport to shade the trailer and protect it against the rain and sun, along with more permanent plumbing and a shed for storage. That would make life more comfortable.



Joe's cot and water tank in the back of his truck.

The slideout leaks when it rains hard and he has not been able to find the problem, so he covered the trailer with a tarp during the rainy season. Now he parks the

slideout inside the trailer when needed. He says it is best to get a trailer without a slideout, as the slideouts are prone to leakage.

He says he cannot recommend this lifestyle for the vast majority of EIs.

More information

More articles about temporary and portable housing for the environmentally sensitive are available at www.eiwellspring.org/temporaryhousing.html.

For more personal stories, go to www.eiwellspring.org/facesandstories.html.