

A Long-Term Survival Guide - Survival Mini-Heaters:

Mini-heaters are small oil-burning heaters which look somewhat like kerosene lamps, but are designed to produce enough heat to solve some of the problems caused by freezing winter weather conditions.



This is an army surplus mini-heater. Shown are the burner section, chimney, and the two assembled.

In the past, the militaries of some countries used mini-heaters, to keep equipment and troops from freezing in winter conditions. They produce enough heat to keep the inside of a small tent, small equipment shed, or small animal shelter above freezing, when it is below freezing outside. The example shown here is a metal oil lamp, with a metal chimney. The chimney uses holes at top and bottom for airflow, and just slips over the lamp with a friction fit. You could drill holes in a large soup can, then place an oil lamp inside, to make a similar improvised version. If you cut the bottom out of the can, you can just set it over the lamp. Note that holes are made below the flame level, and then at the top of the chimney. Don't make holes all up and down the chimney, or it will not have a proper draft, or airflow.



These surplus mini-heaters were designed to be used in pairs, inside a sturdy metal box with an open top. This design allows the box to support the weight of pots and pans, instead of resting them directly on the heaters. You can also use much larger pots with this type of setup. Note how the top edges of the box are bent outwards, to provide more support for any containers placed on top. The box is made from thick sheet metal, much like an ammo can.



The box has a simple hinged door, and there are metal clips inside, to hold the heaters in place.



Vent holes allow the box to be used with the door closed, but you get more light with the door open.



Of course, you can't expect to find rare surplus items like these for sale anywhere. (These examples had been stored in one of my caches, for several decades.) But the good news is that you can make your own simple improvised versions, which will work just as well as these, if not better. Any sturdy metal box could be used as a similar heater, with a couple of oil lamps placed inside, and with plenty of holes drilled for ventilation. A surplus ammo can would be a good choice, for making this type of mini-heater.

Surplus Mini-Heaters, In Use:



The individual mini-heaters can be lit and used separately, as shown, but they are easy to tip over.



Here are the lit mini-heaters secured in the metal box, with a kerosene lamp, for size comparison.

When making improvised versions, you can vary the size of the metal box, the heaters, and the chimneys, and you can also use more than two heaters. A larger ammo can might work better with four, or even six heaters inside.

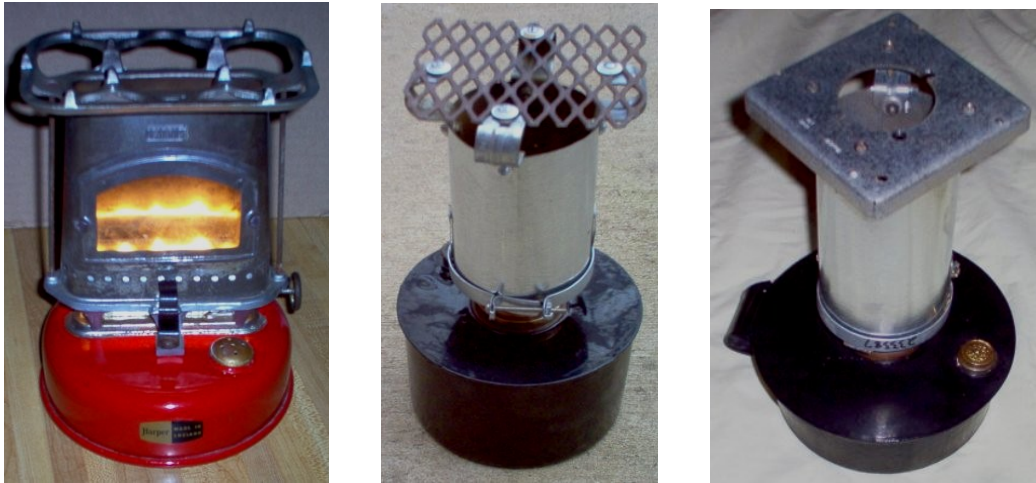


The surplus mini-heater easily boils water in a metal cup or coffee pot, or cooks food in a skillet.



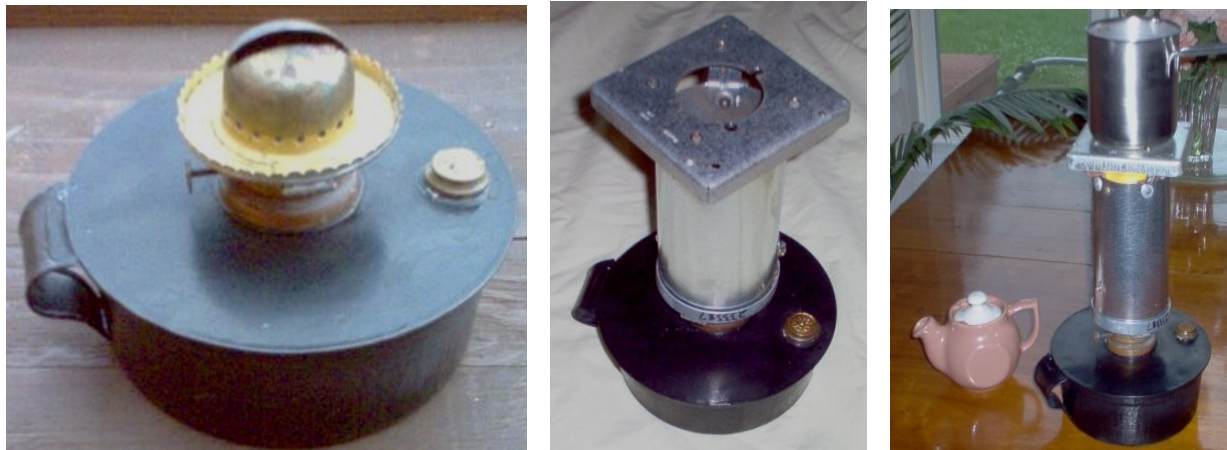
Two heaters can boil several gallons of water, while the metal box supports the weight of the pot.

Antique and Improvised Mini-Heaters:



These antique mini-heaters, or improvised versions of them, can be useful survival tools.

In a long-term survival situation, winter conditions will present you with some extra challenges, especially if you are keeping livestock at your retreat. You need some way to keep your animals alive in freezing weather. In the past, before electricity was available, many farms used miniature heaters to warm their small outbuildings. These little heaters were very useful, because they could keep the pipes in the pump house from freezing, keep poultry and other livestock from freezing to death, and also keep the animal's water troughs from freezing solid (very important, to keep animals healthy in the winter). Some of those antique heaters can now be found for sale on eBay, but you can also make your own improvised versions. These heaters are all just simple oil or kerosene lamps, with metal chimneys instead of glass chimneys, to act as small heat radiators. Some were also designed to support and heat small cooking pots, tea kettles, & coffee pots.



This is an antique brooder house heater, with an improvised chimney, and a can of water heating on top. It is almost impossible to find an antique heater with an intact chimney; most of them rusted very easily. I used a piece of 4" stove pipe to make the chimney, and clamped it to the burner. I used an electrical outlet cover with a 2 1/8" hole in the center, and riveted it on top, to make a small pot rest. It will heat a cup of soup to boiling in about 15 minutes.



A family-size Campbell soup can also makes a good improvised chimney, and they are actually thicker steel than the original chimneys. A large can of beans, or Boston Brown Bread also works, or any can of similar dimensions. A small touch hole can also be drilled in the side of the chimney, for easy lighting.



This mini-heater burner uses two 1 1/2" wicks, producing plenty of heat for cooking. The tabs around the top edge must be bent up straight, the chimney inserted, then the tabs bent against the side of the can just enough for a firm hold. On the bottom of the burner, notice the small air vent above the top wick, designed to let the fuel tank vent, even with a solid fuel filler plug. Keep it clear, for best operation.



After making my own chimneys from soup cans, I made two different styles of cooking plate. One uses the outlet cover mentioned before, but on the second, I riveted a bit of expanded metal grate on top, using four metal electrical conduit clamps for the support brackets.

Mini-heaters are very versatile. Having a small heater which produces about 1700 BTU/hr for 48 hours on less than a quart of oil can be very useful in many situations, limited only by your own imagination.

Some mini heaters are short enough to fit under some vehicles, to keep the engine blocks and radiators from freezing in very cold weather, but care must be taken to avoid placing them directly under rubber belts or oily parts, which could become too hot for safety. If it's windy, a tarp should also cover the vehicle, so the heat is not blown away.

They can be placed in a well pump house, to keep the pump and pipes from freezing.

They can be used in a stored travel trailer or motor home to keep the water pipes from freezing, but care must be taken in their placement so the heat does not rise directly under a wooden cabinet, for example.

They can be used to keep the chill out of small greenhouses, to protect over-wintered plants, or protect transplants against a late frost. They are inexpensive insurance against freezing weather conditions.

So say it's a dark and stormy night. The temperature is below 20 F, the wind is howling from the North, and the electric lines are covered with ice. Your well pump has an electric heat magnet attached. The storage building for your snow blower and/or ATV has an electric heat magnet attached to the engine block. If the electricity goes off in the middle of the night you would never know, and your well pump could freeze and crack and the snow blower or ATV would not start in the morning.

But if you have a simple brooder house heater in the well house and/or storage shed, it doesn't matter if the electricity goes out; you will have saved an expensive pump from having to be replaced.



American mini-heaters were mostly farm or automotive styles, but there were several small kerosene heater/stove combinations made in England and Europe. These stoves were used in small apartments in the city for cooking, or in camping trailers, or in cabins. They were often called boiling stoves.

Repairing old fuel tanks: It is not uncommon to find pinholes in old fuel tanks, on century-old brooder heaters. If they leak fuel, apply a thin layer of J-B Weld epoxy over all areas that even appear to have indentations or pits. J-B Weld epoxy can be easily applied with a small paint trowel, so little sanding is required. Of course all the sanding required to get to bare metal (so the epoxy will stick) removes the galvanizing, so the tank must be painted with an anti-rust type spray paint, to prevent future rusting.