

Fire by Can

For those people who would like to make a solar reflector from the bottom of a can, but don't want to put in too much muscle, here are some alternate methods to try. Every home probably has some "scouring powder" and toothpaste around.



Rubbing a bit of scouring powder on the bottom of the can will brighten it significantly. Following up with some toothpaste will produce a "reasonably" reflective surface.

(Note - "Comet" was used in this case. As per the photo - the cleanser advertises the addition of "Bleach." In general, it is a very bad idea to use bleach on metals. The directions on the can instructed that it was ok to use on metals. Please make sure that whatever you use is safe on metals -- especially aluminum.)

A Better Reflector

To make a better solar reflector, one can use more specialized abrasives. What would one want to do this? The previous method produces a "reasonable" but not great lens. If the day is hazy, or the sun is low in the horizon, or if the tinder used is not that good -- one needs a better mirror.



This is a picture of a "raw" aluminum can bottom. I cut the bottom off just to make storage of the reflector a bit easier.



The first step is to use fine steel wool - or a scouring pad. This will remove any printing that is on the bottom and will get rid of any larger scratches or matt finishes.



The next steps involve using finer and finer abrasives.

These abrasives are available at many hardware stores -- or from jeweler's supply stores.

Here, Emery Cake is used.



The next finer abrasive is Brown Tripoli.



The final abrasive is Red Rouge.



This picture shows the final polished can bottom.



For comparison, this is the back-side of the can bottom. This shows what the original surface looked like.



Here is a picture of a pocket-knife being magnified by the reflector.



And of course - the final proof - smoke!

Depending on the type of can used, the shape of the bottom will vary and therefore the focal point may also vary. In order to effectively utilize these "can" reflectors, one needs to identify the focal point. If the can is well polished, the sun is bright and one uses a good tinder - a little movement of the tinder will quickly identify the focal point - i.e. there will be smoke. If things are marginal, here is a way to help identify the focal point.



Wear sunglasses to protect the eyes, and also to make the focal dot more visible

Take a piece of newspaper that is black on one side, and white on the other. The idea is to have the white side facing the reflector, and the black side facing outward. The white side will reduce absorption so that the paper does not burn too quickly, while the black side provides good contrast.

In this picture you can see a large bright circle on the newspaper.



As the piece of newspaper is moved away from the reflector, the bright circle gets smaller.



.... until the focal point is reached - at which point the paper will probably burn through - as in this photo. Note the position of this focal point -and place your other tinders in the same place.