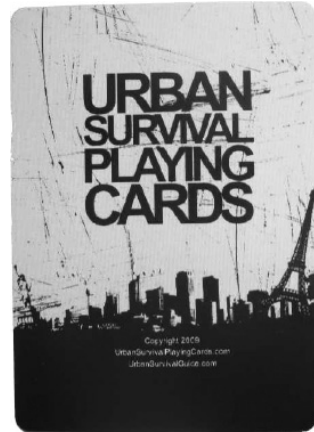




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I wanted to take a moment to say thank you for your membership to The Lamplighter Report. This issue is packed with some powerful information that will help you to prepare you and your loved ones in the event of terrorist attack, natural disaster, economic collapse, or a pandemic.

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# The Lamplighter Report



February Issue

THE LAMPLIGHTER REPORT INVITES YOU TO JOIN OUR OFF-LINE MEMBERS

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## Airsoft ...AKA Dry Fire on Steroids

There is a lot of debate on the topic of using airsoft for firearms training. Most of the critics are simply professional fault-finders who focus on a few shortcomings that they've seen with recreational airsoft and think that it applies to all airsoft training.

Other critics are people who are fortunate enough to have a job or the financial resources to allow them to shoot tens of thousands of rounds of live ammo per year, but these critics are normally won over quite quickly when they realize that airsoft is an enhanced version of dry fire rather than a substitute for live fire. In fact, I've been in my local airsoft supply store when a state law enforcement agency was picking up a case of spare Glock airsoft mags to go along with their case of Glock airsoft trainers.

So, I'm going to address this head on and tell you the top 6 problems people have with using airsoft for training and why they don't apply to you. Then I'm going to show you airsoft training in a whole new light and introduce you to some GREAT at-home training that you can start doing with airsoft.

I've got to start off with a safety warning. Treat airsoft trainers like real guns loaded with live ammo. The main reason to do this is to develop and maintain good firearms discipline. The second reason is that airsoft bullets have enough kinetic energy to break skin, go through your cheek into your mouth, and completely destroy an eye. This means always wearing safety eyewear when shooting and not pointing them at anything you don't want to destroy.

### TOP 6 PROBLEMS WITH AIRSOFT TRAINING

1. **They're cheap plastic toys.** There are two broad categories of airsoft. Toys, and Training Pistols. You'll find the toys in discount stores and some sporting goods stores. They're usually clear plastic,

light weight, fragile, inexpensive, and inaccurate.

The training pistols, sometimes called Professional Training Pistols or PTPs. PTPs are the same size and weight as their real counterpart...to the degree that good PTPs will fit in the same leather or kydex holsters as your real firearms. The controls are the same. They break down the same way. They don't have hoses coming out of them or any funky attachments sticking out.

The magazines hold both a small propane gas cylinder and plastic 6mm bbs. The propane gas cylinders propel the bb's and throw the slide back to provide recoil.

The trainer rifles have accessory rails that you can put your real optics on for training. Since most of the rifles have a 300-600 round per minute "full-auto" option, they use electricity from a lithium battery instead of gas to propel the bullet.

These training airsoft firearms look so real that if you brandished one in public, you should fully expect to get shot.

The solution to this "problem" is to get high quality, metal airsoft trainer replicas of one or more of the firearms you own.

**2. Lack of recoil.** High end airsoft guns DO have recoil, but it does not compare to a real firearm. There is no doubt that this is an accurate criticism...but it's also a GREAT benefit. One of the most common problems with handgun shooters is anticipating recoil. Basically, the brain decides that it knows how much the muzzle is going to rise after each shot and tries to compensate by pushing the muzzle down that much as you're shooting. The problem is that the timing seldom works right and the end result is low, inaccurate groups.

When you do dry fire training with airsoft, you don't have very much recoil and you train the brain to keep pointing the sights at your target all the way through your shot and reacquire them

quickly after each shot. Since there's so little recoil to push the muzzle off target, you know immediately that any deviation in aim is because of something you're doing and you have the opportunity to quickly correct the problem.

This is especially helpful with new shooters or when teaching experienced shooters new techniques. By taking the feeling, sound, and shock-wave of live rounds out of the equation, it allows the shooter to focus on their technique and not on the shock, euphoric feeling, or muscle fatigue that you get from firing live ammunition.



One of the problems that the lack of recoil DOES cause is that it messes with the cadence and rhythm that speed shooters have when practicing multiple shots in rapid succession. This IS valid, but doesn't really apply to very many shooters. Most shooters would benefit greatly from thousands of repetitions of smoothly clearing their cover garment, acquiring a solid, consistent grip, presenting their firearm, QUICKLY acquiring their sights and smoothly squeezing off the first shot. And, even competition shooters can and do use airsoft to practice everything up to double taps.

While you can't accurately practice double taps, you can practice follow-through by reacquiring your sights after each shot. In addition, what I do is set up two targets, 20 feet away from me and about 10 feet apart from each other. The practice that I get transitioning from target to target carries over very well to live fire...and this is something that my local ranges won't let me do outside of competitions.

One last note on the topic of recoil. .22 caliber barrels & uppers have gotten quite popular in recent years for 1911s, Glocks, AR-15s, and other firearms. I own a couple and LOVE them. As you can imagine, when you shoot your normal firearm with .22 rounds, you don't get nearly as much recoil or muzzle rise. The .22 inserts still provide a valuable training aid and help shooters put thou-

Develop a feel for your pepper spray canister. You want to be able to make it ready for use without having to look at it. You want to be able to aim and fire it without needing to look at it. Bring the spray to eye level, keep your arm bent with your elbow pointing toward the ground, then spray. Spray for the face and continue until your assailant either backs off or drops to the ground in agony.

Carry your canister in your hand when you are in a potentially dangerous place or situation. Don't bury it in a purse, brief case or deep pocket. You'll never find it if and when you really need it. If you do have it in your hand in your pocket, I suggest holding it up and down rather than horizontal with the ground. The reason is that it's easier to pull out of your pocket when it's vertical rather than horizontal.

Test me on this. Reach in your pocket, grab your pepper spray with a fist, and yank it out like your life depends on it. (Be careful not to rip your pocket or pants.) Next, loosen the grip with your index and middle fingers so that your OC is almost vertical in your pocket and yank it out again. The chances of getting caught up on a seam are MUCH slimmer. This technique also applies to pulling a knife or even keys out of your pocket.

Check your canister periodically for damage and make sure the nozzle is dust free and unclogged. Do not leave it in your car. Pepper spray loses its effectiveness when temperatures reach 120 degrees. Also, most pep-

per spray canisters must be shaken every two or three days.

Keep in mind that while some people will scream, cover their eyes and fall to the ground, others will be affected only mildly. A few may not be affected at all. Some street gangsters actually practice exposing themselves to pepper spray to develop a tolerance to the chemical. There is no way to tell by looking at someone if they will be sensitive or tolerant, although one general guideline is that people who are severely drugged, drunk, or deranged tend to have reduced responses to OC.

I actually carry OC with me in addition to a firearm. If you're in a situation where help is a long ways away and you stop a violent attacker by brandishing a firearm but they won't comply with subsequent orders, one option may be to hit them with pepper spray to get them to comply so that you can restrain them without shooting them.

Another reason to carry OC in addition to a firearm is that if you encounter a vicious neighbor dog, spraying it could cause a LOT fewer problems than shooting/cutting/striking it. In addition to the legal issues surrounding discharging your firearm, killing your neighbor's dog will likely cause a lot of strife. Simply using pepper spray could allow you to stop an attack and diffuse the situation without having to tell anyone what you've done.

# Pepper Spray

## A Nonlethal Weapon that You Should Become Familiar With

Pepper spray is a popular less-than-lethal weapon with police officers, security guards, as well as many private citizens.

Used properly, pepper spray can temporarily disable an assailant and give you an opportunity to leave the area or call for help. Most states allow citizens to carry such devices for self defense purposes. The states that have restrictions on pepper spray are the ones you'd expect: New York, Massachusetts, Michigan, Wisconsin, California, Washington D.C., and Hawaii. Restrictions vary from the chemical components that are allowed, to the concentration, to proper labeling.

I actually call local law enforcement and ask before I travel if I can't find a local or state government website that spells out the law. These are always frustrating conversations, because the people I have talked to don't respect personal responsibility and are never excited about someone bringing "weapons" into their city.

Chemical sprays are one of the best means of non-lethal self defense on the market. The Chinese first used red pepper as a weapon about 300 B.C.

Ancient Japanese warriors threw rice sacks filled with red pepper to burn their enemies' eyes, nose and mouth. Chemical agents were used in America as far back as the Civil War.

Mace became popular with police departments in the 1970's and in the early 1980's Oleoresin Capsicum (OC) became the chemical spray of choice. OC is called "pepper spray" because it's made from the resin of cayenne pepper. To work it must be sprayed into an attacker's eyes, nose or mouth. It causes severe shortness of breath, involuntary closing of the eyes, extreme tearing, headache, and sometimes nausea.

### How to use it.

Never warn an attacker that you have pepper spray or that you plan to spray him. You don't want him to focus on the canister or try to get it away from you.

Surprise works best. If the situation calls for the use

of pepper spray, issuing a warning only puts you in greater danger. Police are taught to spray with their weak hand, leaving their strong hand free to go for their gun if necessary. Even if you don't carry a gun or baton, you still want your strong hand free to block an attack, grab or strike the assailant.

Never allow a potential assailant to get closer than 10 feet. Pepper spray doesn't work as well close up, it needs a bit of distance. Also, the effects of pepper spray are not instantaneous. It needs a few seconds before the full effects are felt. So, if you are going to use it, allow some distance.

If they do get closer than 10 feet, don't hesitate to use it anyhow. In fact, one technique that law enforcement uses to subdue suspects is to spray pepper spray on their hand and rub the suspect's face with the pepper spray.

If a threatening person closes in on your safety zone, warn him to stop. If he ignores your command, you must assume he intends to cause you bodily harm and, therefore, stop the threat. Spray him now. Don't let him close the gap.

There's almost a 100% chance that you will get some blowback when you use pepper spray. It could be from the wind, from contact with the attacker after you've sprayed them, or just air circulation. Because of this, I personally make sure that I spray my pepper spray on a wall and stay close enough to it to get some of the effects if I haven't used it in a month or so.

There are a few benefits to doing this. First, it makes me familiar with how my pepper spray works, how it sprays out, and what the range is. Second, it slightly desensitizes me to the effects of OC so that I won't be surprised at them if I deploy OC in a fight. Third, I actually have the peace of mind of KNOWING that my OC works, because I've got personal experience deploying it. And fourth, since I'm actually spraying my OC, it pressures me to replace it every 6-12 months with a new one. I use Saber OC and they're about \$10 apiece, so this isn't a big expense.

sands more rounds downrange than they would otherwise. Is the recoil exactly the same? No. Can you still practice the fundamentals? Absolutely...just like you can with airsoft.

**3. Excessive magazine capacity.** I really get a kick out of people who have this "problem" with airsoft training. It goes something like this, "You can't do serious training with airsoft because they hold so many more rounds than a real firearm." Well, this "problem" requires a MOTO (master of the obvious) solution...when your training would benefit from realistic magazine capacities; don't load them up all the way. If you load 7 or 28 rounds in your real magazine, load 7 or 28 rounds in your airsoft magazine.

This isn't really an issue at all. If I'm training my draw stroke, I load the magazine all the way. If I'm training reloads, I only load 2-4 rounds in each magazine, whether I'm training with airsoft or live ammo. Even when training force on force...whether it's with airsoft, simunitions, or paintball, I load as few rounds as possible so that the interactions don't decay into a game.

**4. Trigger work.** The trigger pull and trigger reset on airsoft trainers are different than on real firearms, but they're also different between real firearms. Airsoft trainers still reward solid fundamentals. Press the trigger straight back and you'll get tighter groups than if you over grip, pull with your trigger finger, or jerk the trigger.

Eliminate over-travel and start your trigger press as soon as the trigger resets, and you'll shoot quicker and more accurately, regardless of the firearm. These fundamental truths apply to both airsoft and live fire. You won't be able to practice the EXACT squeeze or the EXACT reset that you have with your real firearm, but you will be able to practice the fundamentals.

**5. Magazine changes.** With a real firearm, the magazine gets lighter as you shoot it and when your magazine is empty, it weighs a lot less than when it's full. This is very different with an airsoft pistol mag. Airsoft pistol magazines have a gas reservoir in them, as well as the bbs and are a big

part of the weight of the gun. Since the bbs are only a fraction of a gram apiece, the magazines are almost as heavy when they're empty as when they're full. This wouldn't be a BIG problem, except that on almost all airsoft magazines, the feeder lips and the baseplate are both plastic and can break.

When you drop an empty airsoft pistol mag, you need to be a lot more careful than when you drop an empty real pistol mag...especially on concrete, tile, or other hard surfaces. Since the baseplate and the lips of the mags are plastic, they can and do break if they're dropped on hard surfaces.

There are three things that you can do to get over this shortcoming. The first is to position foam memory pad, a heavy blanket, a sleeping bag, or even remnant carpet strips wherever you plan on dropping your mags if you're training on a hard surface. The second option, if you don't have access to anything soft, is to do tactical reloads and retain your partial mags instead of doing emergency reloads and dropping your mags. The third is to use a drop bag on your belt and practice pulling your mags from your mag well and putting them in the drop bag. (This is standard operating procedure for many deployed units) None of these are perfect solutions, but they are workable.

**6. People who play airsoft.** Airsoft is a popular sport around the world. People who play it seriously dress up like military/SWAT (some are/were military or SWAT) and run scenarios against other teams, much like you would with paintball, laser tag, or like what our armed forces does with the MILES system. Some people take it as a game and view it like an adult version of "cops and robbers" and others use it as a serious form of force on force training. In fact, more and more law enforcement and military units are turning to airsoft as a training aid because of the extreme low cost of training.

But there are people who play airsoft who blur the line between reality and not-reality in their mind and talk like they've actually been in combat. Law enforcement door kickers who have been in live

fire situations and combat veterans who have been there and done that hear these airsofters talk and get turned off by the entire method of training.

This is a case where you should judge the training based on the facts and not on who else uses it.

In addition to the reasons I gave why these arguments don't apply to you, perhaps the simplest way to look at airsoft training is not to look at it as a substitution for live fire, but as a really fun and effective way to do dry fire drills, as well as some training drills that you just can't do with dry fire.

What's that mean? It means that neither dry fire or airsoft training shouldn't be viewed as a complete replacement for live training and that you should always follow up your dry fire and airsoft training with live fire. Some people suggest a 50/50 mix, while others suggest that you can make rapid improvements with 90% dry fire/airsoft and 10% live fire. In truth, don't get too hung up on the ratios.

Do as much dry fire and airsoft training as you can and you'll start seeing your live fire performance rapidly improving. Personally, I shoot 50-200 rounds of airsoft per day (integrated into my workout), dry fire a couple hundred rounds per week, and live fire a few hundred rounds per month on my own plus formal training and events.

Airsoft training is a case where perfect is the enemy of good. It could be easily argued that perfect training would be all live fire. Few elite forces would agree with you, but many competitive shooters make that argument. In any case, few people can afford the time

and money required to do the repetitions necessary to lock in and maintain muscle memory with JUST live fire.

Keep in mind that the time you spend training with airsoft will ALWAYS be superior to the time that you wanted to spend training live fire but didn't actually do it because something got in the way.

One of the most famous anecdotes about using airsoft to train for live fire shooting comes from 2004 when Tatsuya Sakai won the US Steel Challenge. He couldn't legally train with a real firearm in Japan, so he trained with an airsoft gun for one year before the event. He came to the US one month in advance and trained with a real firearm to get his timing figured out and went on to win by beating some of the best names in shooting...guys who'd been training with 50,000-100,000 rounds of live ammo per year for several years.

I don't suggest that you only go out and shoot your real firearms once a year, but the time may come where that is more of a necessity than simply an option due to ammunition costs or restrictions on firearms. In the meantime, the benefits of cost, frequency of training, and the ability to train "prohibited" techniques makes it hard to beat airsoft training.

Let's take a look at the cost to shoot airsoft. I'm only going to figure the cost of ammo. I'll let you add in fuel, range fees, targets, and maintenance supplies. Let's compare 2 scenarios...one where someone buys 1000 rounds of ammo for their Glock and uses it at the range and another where the shooter buys an airsoft Glock AND shoots 100 rounds of live fire.

	Shooter A (live fire only)	Shooter B (airsoft and live fire)
1000 rounds of target 9mm	\$250 (low ball)	
100 rounds of target 9mm		\$30
NEW Airsoft Trainer Glock Pistol		\$150
4000 rounds of premium BBs		\$20
2 canisters of LP gas		\$10
Airsoft Propane Adaptor		\$20
Silicone Lubricant Spray		\$5
Total spent for 1000 rounds	\$250 with no rounds left to shoot.	\$235 with 3100 rounds left to shoot.
Cost per round, when you only pay for ammo/airsoft gas	25 cents per round	6/10ths of a cent per round

i. Assemble. Raise the arm vertically to the full extent of the arm, finger>s extended and joined, palm to the front, and wave in large horizontal circles with the arm and hand.



j. Form column. Raise either arm to the vertical position. Drop the arm to the rear, describing complete circles in a vertical plane parallel to the body.



Hand and arm signals are a great way of communicating when you don't want to be heard. They are quieter and often more reliable than whispering into a radio mike. You should have a standardized set for your cell. When on the move, shoot an eye towards your cell members every ten or fifteen seconds in case they're trying to signal you. Get in the habit of passing the signals on: when one member of the cell uses a hand and arm signal, everyone who sees it should repeat it. That will let the signaler know that his sign is acknowledged and increases the chance that the intended recipient (who may be looking away at any given moment) will get the message.

These were just some of the most basic signals for field operations. They are absolutely essential for maneuvering you and your loved ones in case of a hostile situation. I will provide you with more next month.

c. Enemy in sight. Hold the rifle horizontally, with the stock on the shoulder, the muzzle pointing in the direction of the enemy.



d. Range. Extend the arm fully towards the leader or men for whom the signal is intended with fist closed. Open the fist exposing one finger for each 100 meters of range.



e. Commence fire. Extend the arm in front of the body, hip high, palm down, and move it through a wide horizontal arc several times.



f. Fire faster. Execute rapidly the signal commences firing.



g. Fire slower. Execute slowly the signal commences firing.



h. Cease fire. Raise the hand in front of the forehead, palm to the front, and swing the arm and forearm up and down several times in the front of the face.



It's important to note here that the airsoft shooter in this example also shoots 100 rounds of live fire. Since the purpose of your airsoft training is to be able to perform better when you're doing live fire, it's vital that you practice occasionally with live fire. One of the biggest reasons for this is to convince your brain that your dry fire and airsoft training actually carries over to live fire so that when you find yourself under stress you'll not only have solid skills, you'll have already proven to yourself that you have solid skills.

But cost isn't the only benefit of airsoft training. When you use airsoft, your frequency of training will go up considerably. Think about it...all you have to do to shoot is throw a thick blanket or sleeping bag over a door, clip a target onto it with clothespins, make sure no animals or pets are around, put on your eye protection, and start shooting!

When you're through shooting, simply throw away your target, run your vacuum to pick up the BBs, and you're done.

When it's that simple to shoot, you'll find yourself training 50-100 repetitions, 3-7 days a week. It's MUCH easier to build up muscle memory this way than to blast through 500-1000 rounds every month or so.

**"Prohibited Techniques."** Airsoft will also allow you to practice techniques that are prohibited at most ranges like shooting while moving, shooting from behind cover, drawing from a shoulder or ankle holster, and shooting from and around a vehicle.

So, in addition to almost every drill that you can do with your firearm and dry fire practice, I'm going to tell you about some of my favorite at-home drills that airsoft guns are particularly suited for.

**1. Movement/Finding cover/shooting around cover/concealment.** Gabe Suarez has trained shooters on force-on-force skills extensively with airsoft, paintball, and simunitions and one of the biggest factors that he's identified to increase your chances of surviving is to "get off the x" as soon

as you realize "it's on." In other words, taking a stance, planting your feet solidly, drawing, aiming and firing isn't necessarily the best option, even though that's what how ranges force you to train.

A better approach is that, instead of planting your feet, immediately start moving to cover or concealment as you're drawing your firearm. If you happen to be able to get a shot off before you reach cover, that's great. If not, get behind cover, get your firearm ready to go, and then decide whether to engage the target around your cover or retreat.

This is a drill that is PERFECT for airsoft.

[You can still put a hole in sheetrock, break windows and valuables, break skin, and rupture an eyeball, so you need to make sure that you're doing the drill in an appropriate area.]



As an example, if you've got your target set up at the end of a hall, you can stand at the other end of the hall and instead of simply standing, drawing, and shooting, you can get your body out of the hallway as you're drawing and lean back into the hall to engage the target.

You can also hit the deck behind a couch or bed and practice shooting around, over, and even under concealment. When I'm doing this drill, I'll usually wear knee pads so that I can hit the deck harder and faster than I normally would in repeated training.

**2. Punching and shooting.** It's been said that the main reason for handguns is to serve as a backup to a long gun or as a tool to help you fight to your long gun.

Well, there's another level to that line of thinking, and here it is. If you are within 21 feet of someone when a violent encounter happens, they will be able to get to you and hit/stab you as fast or faster than you will be able to get off your first shot. That, combined with the fact that most violent encounters will happen at "smelling distance" and

not at 21 feet, it's quite possible that you'll have to use your hands to fight to get to your firearm/knife/OC or other weapon. In fact, recent National Institute of Justice studies of 10 years of law enforcement and civilian self defense shootings show that the majority of them happen within 11 feet.

I practice "fighting to my gun" in a couple of ways. I've got one of those "Bob" punching dummies that is a life sized torso of a man on top of a heavy, water filled base. I'll set it up next to a man-sized torso paper target to simulate multiple targets and I'll stand in front of the Bob and the paper target and assume that they have done something to start a violent encounter.

In this drill, I strike the Bob on the throat/neck/eyes/ears and then move away from "Bob" so that he is between me and the paper target as I draw my firearm...essentially slicing the pie and setting up a scenario where the untouched attacker has to go around his injured partner to get to me.

Then, I engage the punching dummy with my firearm and then slide to the side until I can see the paper target and engage it as well. (The airsoft BBs DO bounce ricochet off of my punching dummy with a lot of speed and could hurt you or break things. There is also always a risk that the airsoft bb's will penetrate and permanently damage your punching bag/dummy. I usually have a t-shirt on my Bob and the airsoft rounds put holes in the shirt but my Bob is still 100% intact after taking thousands of rounds at close range.)

If your training environment permits and it won't cause alarm among neighbors, you can add in yelling commands, like, "Drop the weapon!"

**3. Transitioning from primary to secondary weapons.** This is a simple, but valuable drill if you ever carry both a longarm and sidearm...and another one that is hard for civilians to practice at ranges.

Put simply, the way I do this drill is to put 5-10 rounds in my airsoft M4 and go through drills. When my mag goes empty, I drop and retain it

with my left hand and go for my sidearm and continue engaging the target. Anyone who has done this can tell you that this is easy to mess up on. Does your long gun even have a sling? Where does your long gun end up if you simply drop it? What do you need to do to make sure that you don't get caught up in your sling when drawing your secondary weapon? These are all problems that get flushed out with airsoft training.

My transition consists of pulling my M4 down and across my body with my left hand as I clear my holster with my right hand. Once I've cleared my long gun with my handgun, I bring up my left hand to assume a 2 handed grip.

**4. Transitioning from target to target.** If your local range prohibits shooting across lanes, you'll love being able to do this one. It's simple...set up 2 or more targets and engage them, one after another. I sometimes do this one with friends in my garage. I go out of the garage, they set up multiple targets, and I go into the garage and identify and engage them. To add to the difficulty, sometimes I'll enter the garage in the dark with my flashlight on strobe mode so that I have to maintain cover, identify targets, acquire my sights, and engage with the added disorientation of the strobe.

You can also do this with a headlamp strobe. These flash slower than a tactical flashlight strobe and, depending on the speed of your strobe, you might be able to do a drill where you identify and engage a target every time the strobe lights up. This version of the drill is simply fun.

**5. While we're on the topic of shooting** while in the garage, airsoft gives you a good opportunity to practice drawing while in the drivers' seat of YOUR vehicle, practicing taking cover behind your engine block, and shooting around, over, and under your car. Remember, you can break out windows, blind yourself or others, damage paint, and break valuables in your garage, so only do this if you are willing to take those risks.

I do this drill several times of year, but the most important and most awkward time is in the fall

# Combat Signals

## Continued from Last Month's *Field Signals*

Last month I started on field formations for urban environments. This month I wanted to discuss combat signals.

**SIGNALS.** Signals are used to transmit commands or information when voice communications are difficult, impossible, or when silence must be maintained. Subordinate leaders repeat signals to their units whenever necessary to ensure prompt and correct execution.

### 1. Whistle.

- Is an excellent and quick way a unit leader can transmit a message from one place to another.
- It provides a fast means of transmitting a message to a large group.
- It must be prearranged and understood. It may be misinterpreted.
- Its effectiveness may be reduced by normal noise, which exist on the battlefield.

**2. Special Signals.** Signals consisting of all special methods and devices used to transmit commands or information. Radio and pyrotechnics such as flares and smoke grenades also may be used for various purposes.

- Used to mark enemy positions.
- Signals when to attack, withdraw, shift or cease-fire.
- Mark landing zones.
- Used by only one unit at a time. Be sure signals do not have another set of meanings.
- Can give your position away.

### 3. Radio.

- Fast means of transmitting commands and signals.

b. Call for fire support, medevac, supplies, and reinforcements.

c. Additional weight.

d. Limited range.

e. Battery life is short.

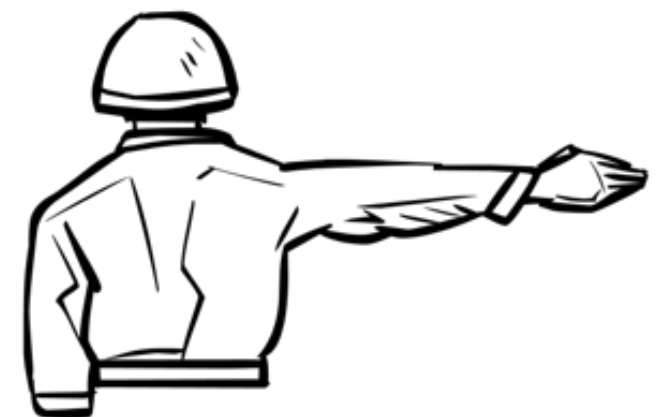
f. Can be intercepted by the enemy.

**4. Arm and Hand.** Signals used with combat formations.

- Decreased speed. Extend the arm horizontally sideward, palm to the front, and wave arm downward several times, keeping the arm straight. Arm does not move above the horizontal.



- Change direction. Extend arm horizontally to the side, palm to the front.



# Preparation

## Another Reason Why I Believe in Being Prepared

It's all in the numbers. I was doing some light reading on the Department Of Justice Website and found a report on probation and parole statistics in the US for 2009. It was quite enlightening, and reinforced my decision to carry a firearm, practice empty hands defense, and to work to always remain aware of my surroundings.

Here is a chart of the number of people who have been found guilty of crimes who are on probation or out of prison on parole. If someone committed a crime that fell in two categories, only the most serious one was recorded (2009 numbers)

	Probation	Parole
Violent sex offense	67,114	58,546
Non-domestic violence	277,698	134,073
Drug offense	582,759	261,666
Property crime	575,360	168,671
Total	1,502,931	622,956
Number of GPS monitors	8,079	16,595

From <http://bjs.ojp.usdoj.gov/content/pub/pdf/ppus09.pdf>

These people are monitored by just over 60,000 probation officers and 11,000 parole officers. Of course, there are many non-violent offenders who are on probation and parole as well, so their case load is extremely high, with the average probation officer being responsible for 139 people on probation.

And if any of these 1.5 million probates or 600,000 parolees decide to commit another crime, we can rest peacefully knowing that they'll be contained by just under 900,000 full time local, state, and federal law enforcement officers. This includes supervisors, managers, and detectives and includes police departments, sheriff's offices, constables, highway patrols, fish & game, and anyone else in a full time job in law enforcement.

Now, amazingly, 900,000 law enforcement officers do a pretty darn good job of keeping over 2.1 million convicted violent criminals in line. This is in addition to protecting us from violent criminals who haven't been convicted, writing traffic tickets, breaking up

domestic disputes, handling traffic accidents, doing paperwork, and everything else that law enforcement has to do.

But personally, I don't want to place all of my safety into the hands of such an overstressed system. During normal times, it's amazing that we don't each experience more violent crime. In an economic meltdown or post disaster situation, it seems very likely that we will experience more violent crime in our daily lives. The big question to ask yourself is whether you will be prepared to make it an "attempted" violent crime.

And one more note on the importance of self-defense preparedness. Right now we're seeing THOUSANDS of prisoners in Egypt take advantage of the chaos and break out of prison. Since there are only about 61,000 prisoners in Egypt, this is absolutely huge.

In the US, we have 7,225,800 criminals behind bars as of December 31, 2009 guarded by just over 500,000 correctional officers.

That's why I think it's so important to practice defensive firearms skills, empty hands fighting skills, situational awareness skills, and people reading skills and why I think you should too.

Let me know your thoughts on this by emailing me at [David@#\\$\(\\*\)&#@\\$@.com](mailto:David@#$(*)&#@$@.com) Especially if you're in law enforcement. I appreciate what you do, understand what a huge mountain you're asked to move on a daily basis, and I'd love to hear back from you.

when I change from summer clothes to winter clothes.

When I started doing these drills around my car... the car that I paid for and didn't want to damage unnecessarily...I became VERY aware of the fact that it's possible to have a perfect sight picture of a target over the top of a car or other cover and still hit the hood of the car with your round. It sounds obvious, but since your barrel is lower than your sights, you need to raise your muzzle up over cover enough so that you don't shoot your cover instead of your target.

**6. Stress Drills.** Airsoft is also a great way to practice shooting when your fine motor skills aren't working right. While you can't completely replicate the stress response without stress, you can do some things to get used to manipulating your firearm when your hands and fingers don't respond as well as you'd like.

The first drill that I do is to shoot during or after exercising. My normal workout is an interval workout where I go hard for 20 seconds and then take a 10 second break. During that 10 second break, I practice drawing my firearm and engaging targets. Sometimes I do it after a run, sometimes during/after doing a heavy bag or Bob workout. In any case, I wait until either my heart rate is elevated, I'm shaky from an endorphin dump, or my hands don't work right from a post workout "pump."

This is also a good chance to practice techniques to lower your heart rate quickly...namely combat breathing. Simply put, combat breathing is taking in a deep breath over a 4 count, holding it for a 4 count, and then breathing out through pursed lips for a 4 count. When you're breathing in, you want to focus on pushing your diaphragm down (stomach out) instead of pushing your chest up. This can quickly lower your pulse 10-20 beats per minute.

The second stress drill that I do is putting my hands in snow or ice water until they don't function right and then do airsoft drills. It feels like

my fingers are sausages and like I'm wearing mittens, but this drill has helped me get rid of a lot of "fancy" gun handling techniques in favor of simple ones that are more likely to work under stress.

The third stress drill that I do is a completely different kind of stress, but still helps for training. It's going through drills using a shot timer. You can buy dedicated timers, or, if you have an iPhone, IPSC has a Shot Timer app that you can download for \$10 and customize for however loud your particular airsoft gun is. When you go to the range, you can change the settings for live fire and you're good to go. Shot timers will record how long it takes you to get off your first shot and how long it takes between shots, providing measurable feedback on whether or not your skills are improving or not.

One of the drills I do with my shot timer is drawing from concealment while moving to cover. I hit the start button and a random countdown timer starts that takes from 2-3.5 seconds. When it goes off, I start moving towards cover and drawing/engaging my target or targets.

A second drill that I do is called "El Presidente." In one of it's most basic forms, it starts with the shooter looking away from a group of shoot and no-shoot targets. When the buzzer goes off, you turn around and engage all the shoot targets with one round to the center of mass and then one round to the central nervous system while not shooting the no-shoot targets.

And, a third drill that I do is to put 3-5 rounds in a mag and have a spare mag handy. I start the timer, draw and engage. When the slide locks back, I immediately reload, reacquire my sights, and re-engage my target. In this drill, I pay attention to my time to my first shot, but the focus is on the time between the last shot of my first mag and the first shot of my second mag. Basically, I'm trying to speed up the loop of identifying that my mag is empty, dropping the empty mag (or retaining it) loading a full mag, racking the slide (if necessary) and re-engaging my target.

You're on Camera! One of the biggest reasons to train with an instructor isn't so that they can teach you some incredible new "sexy" technique that will change your shooting overnight...it's so that they can identify and help you fix basic fundamental problems with your shooting.

At some point, you're probably going to know HOW to shoot with solid fundamentals better than you'll actually be able to shoot with good fundamentals. When you find yourself in this situation, pull out your video camera, digital camera with video, or web cam and start recording your airsoft training.

Doing this will allow you to quickly see if you are shooting with an aggressive stance like a fighter or if you're weight is on your heels; whether you're squeezing or slapping the trigger, whether you're reacquiring

your sights as quickly as you should be, if you've got overtravel between shots, whether or not you're anticipating recoil, and where you've got wasted movement on your presentation, malfunction drills, and reloads.

If you have the ability to play back your recording at 1/2 speed or 2x speed, you'll pick up even more inefficiencies that you can improve.

As I mentioned before, don't be afraid to train at 1/2 speed...even with airsoft. It will allow you to imprint quality muscle memory and speed is one of the few components of your firearms handling that will increase when you're under stress.

We're going to wrap things up in the next issue by covering mental rehearsal and skill drills that will bring all of the training that we've covered together.



## Water Pasteurization Using Salvaged TV Screens And Satellite Dishes

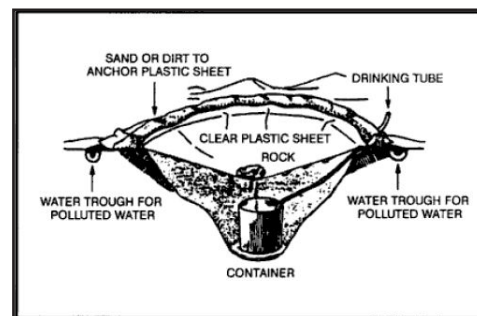
Water is one of the biggest challenges in a post disaster situation. It's heavy, bulky, and there's no way to compact it or dehydrate it, although people have been selling "dehydrated water" as a joke for decades.

In my book, "Advanced Urban Water Purification," I go into several ways to find water in urban environments, and even more importantly, how to purify water. One of the most basic ways to purify water is to use the energy of the sun, and one of the most tried and tested ways of purifying water with the sun is to create a solar still.

Solar stills are basically a piece of plastic held over a hole in the ground. The plastic is weighted in the middle so that it forms a cone and a collection container is placed in the hole under the tip of the

cone. Then wet material is placed in the hole, the sun heats it up, the moisture evaporates, condenses on the plastic and collects in the collection container.

Solar stills are great because of the fact that they can seemingly make water from nothing and because they can purify water without using precious fuel.



The problem with solar stills is how long it takes to make water with them. With direct sunlight, it takes 1 square yard (or meter) of plastic to make 1 liter (or quart) of water per day.

But, today we're going to cover the tactic of collecting and focusing the sun's energy to purify water and a few improvised tools that speed up the process considerably over a traditional solar still.

as you want. You can use the mount that typically mounts small modern dishes to a house to mount the dish to a platform on the ground. Depending on the particular dish that you have, you can modify the arm so that you can set or hang items where the sun's rays are focused, like I have.

You'll notice that with both the Fresnel lens and the parabolic reflector, my setups are unrefined. I actually did this on purpose. I could have easily spent 2-3 times longer making a swiveling easel for my Fresnel lens, making a fancy mounting bracket for my dish, making the tape PERFECTLY smooth on my dish, or any of a dozen other modifications. The fact is that I wanted you to be able to look at the pictures and say, "I can do better than that!" and actually take action rather than look at a perfectly refined setup and not take any action because the project looks intimidating. Both of these setups are EASY. You can copy them and improve on them both and I encourage you to do so and send me your pictures and results when you do.

If you're using a full sized satellite, you'll be able to collect enough sunlight to quickly go over 1000 degrees. With a smaller dish like a DirecTV dish, you'll still be able to light paper and wood on fire and pasteurize water, but it will take a little longer.

Of course, you don't have to use a satellite dish as your reflector. You can use a reflective automobile windshield shade or even a cardboard box coated with aluminum foil or mylar. (When I go winter camping, I use a 1' square piece of aluminum foil to melt snow for drinking) They key is to gather as much of the sun's

energy as possible and focus it into as tight of a beam as possible by using reflective surfaces that are as big, smooth, and reflective as possible, and as close to a parabolic shape as possible.

You've probably figured out by now that with this much heat, you can also do much more than just pasteurize water, boil, and distill water. You can also cook food (also called a solar oven) by placing the appropriate container in the focal point of your lens or reflector.



If you're particularly handy, you can also use a Fresnel lens or parabolic reflector to increase the efficiency of a solar still or even make a solar distiller. This could be of particular value to people who live near salt water and want a very inexpensive way to desalinate water.

If I get enough feedback from people interested in these advanced strategies, I'll be happy to include a guide in a future issue.

I want to encourage you to start looking for Fresnel lenses and a discarded satellite dish to try this on your own. One place to look is FreeCycle.org. It's a site where people post items that they want to give away rather than throw away. Chances are good that you'll have people trying to get rid of broken rear projection TVs and satellite dishes in your area.

I really like these two tools because they are small and have a lot of uses in a survival situation. In addition, they're simple projects that will open your eyes to all of the lenses and reflectors around you and their power to heat food, water, and you.



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periods where the sun isn't visible due to air quality and storms. In a post-disaster survival situation, you can count on increased air pollution due to people using inefficient wood stoves to heat and cook with. There is still solar energy getting through when you can't see the sun, but heating times are longer.

The other thing to keep in mind is that this is a strategy that you will probably only use in warm or cool weather. In cold and very cold weather, it's likely that you'll be using fire of some sort to heat all or part of your house and you can heat water with the same fire.

### Tool #2 – Water Pasteurization Using a Used Satellite Dish

Satellite dishes also collect and focus the sun's rays, but instead of being between your container and the sun, your container will sit between the satellite dish and the sun.

The beautiful thing about satellite dishes is that they are designed to take parallel rays from space and focus them...and they have mounting hardware where the rays converge!

You can use any size satellite, but the bigger satellite dish you use, the more of the sun's energy it will collect and the quicker you'll be able to pasteurize water. So, if you've got an old monster satellite dish from the 80s that's been collecting dust and rain, now you've got a way to make it useful again.

The first step is actually the hardest. Since the paint on satellite dishes is made to be VERY non-stick, we need to get rid of it. You can do this with a chemical stripper, sand blaster, or with a sander. If you're going to use a stripper, I suggest calling a local paint store and asking them for "aircraft stripper." It's nasty stuff, so make sure to use thick, chemical resistant gloves and face protection. Another option is to take it to a paint shop and have them do it for you. They'll use about \$5 worth of stripper. Application, sit time, and cleanup will take 30-60 minutes, and it'll cost you \$20-\$40.



Next, you're going to want to take mylar or aluminum tape and coat the concave portion of the satellite dish. You want it to be as smooth and mirror-like as possible. In a pinch, you can also use a space blanket or aluminum foil and glue, but the tape is much easier. Many smaller modern dishes are aluminum and once you remove the paint, you may be able to polish and wax the surface to get enough reflectivity without attaching anything. I haven't tried this and mylar tape works so well that I'd only try the polish-and-wax approach in a pinch.

You can buy mylar or aluminum tape on Amazon.com. Since you're taping flat tape on a concave surface, one of the challenges is to minimize bubbles. You can buy 1" tape instead of 2" tape to minimize the number of bubbles, but it's debatable whether or not it will cause a noticeable increase in performance.

Next, remove the electronics that sit out in front of the dish, since that's where the sun's rays will converge and you want to put your jar right where the electronics are. Depending on the type of dish you have (6', 8', Hughes, Primestar, Dish, DirecTV, etc.) you may be able to use the mounting arms that held the electronics to hold the container that you're going to heat.

I've got a DirecTV dish. I stuck a small piece of wood out of the end of the mounting arm and hang my cup from it.

Let's use the simplest setup, which is to put the dish on the ground facing the sun and leaning against a rock, brick, or wall. Place your container in front of the dish on the ground at approximately the same distance from the dish where the electronics were mounted. (or hang it like I did) I like to find the focal point by moving a stick around until I find a spot where it starts smoking. Once I've found the focal point, I put my container of water there. Remember that these focused rays are hot and can burn you, so use tongs or heavy gloves when you're manipulating items in the hot zone.

You can keep this setup as simple or sophisticated

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We're going to cover what to do when you have relatively clean water (no chemical contaminants) that you suspect has creepy crawlies like bacteria, viruses, or protozoa in it. This could be collected rain water, water that was stored too long or any other source of water that doesn't contain chemical pollutants.

Using focused solar energy does much more than simply speed up the water generation process over using a solar still. Solar stills generate water by using heat to cause water to evaporate and then collecting that water as it condenses in an attempt to physically separate the creepy crawlies from the water. The tactics that we're going to discuss here will simply kill all the creepy crawlies in your water.

In fact, two of the tools that we're going to be covering can QUICKLY generate 1000 degree heat without the use of a flame. This is hot enough to boil high-temperature grill paint, melt some glass, and crack a mason jar full of water in under 5 seconds. It's vital that you NEVER put any part of your body into the focal areas and that you're ESPECIALLY careful with your eyes. In fact, I suggest that you wear eye or face protection, including sun glasses when using these tools.

### Tool #1 Water Pasteurization using a Fresnel lens (TV screen)

Fresnel lenses are very thin (credit card thickness) plastic magnifying glasses. They're a fascinating tool that I could dedicate an entire article to. You can find credit card and book sized ones in book stores to help with reading.



You can also find larger (much larger) ones in rear projection TVs. You can tell the ones that use Fresnel lenses because the image is only visible when you're directly in front of the TV and quickly disappears as

you move off to the side.

How powerful are Fresnel lenses? Well, I've got a 50" (diagonal) Fresnel lens salvaged from a TV.



It focuses all of the light that hits the lens onto a 1" x 5" focal area. My digital thermometer maxes out at 500 degrees and when I line up the lens with the sun, it hits the 500 degree mark in just a few seconds on a clear day and will light a 2x4 faster than a lighter. According to research I've done, it will hit 1000-1100 degrees in optimal conditions.



You can get Fresnel lenses by salvaging them from rear projection TVs, or you can buy them pre-mounted on a wood frame through ebay for around \$100. If you salvage them and can get a number of them for free, there's a possibility of creating a small home business by salvaging them, mounting them on wood, and selling them locally or nationally.

### The Truth About Boiling Water

You don't need to boil water to kill everything in it. You can simply pasteurize it by heating it to 158 degrees Fahrenheit, and that happens pretty quickly with a big Fresnel lens. As a quick note, all temperature readings in this article will be given in Fahrenheit.

I know you've probably heard for years that you have to heat water to boiling to make it drinkable, but here

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are the facts on the matter.

Worms Giardia, and Cryptosporidium quickly die at 131 degrees Fahrenheit.

Bacteria like cholerae, E. coli, Shingella, Salmonella, and Rotavirus are quickly killed at 140 degrees Fahrenheit.

Hepatitis A virus is quickly killed at 149 degrees Fahrenheit.

Notice that I say that the creepy crawlies are “quickly” killed and not “instantly” killed at these temperatures. Because of this, the accepted standard is to heat the water to 158 degrees Fahrenheit. This process is also called pasteurization. This is important because it takes significantly less energy to heat water to 158 degrees than it takes to heat it to 212 degrees. (108 fewer BTUs per quart under perfect conditions. In reality, it takes a LOT more energy to heat water 54 degrees from 158 to 212 than it does to heat it 54 degrees from 104 to 158 because of heat loss.)

Why 158 degrees and not something simple like 160? That’s a great question, and it’s not because of the Metric system. It has to do with something called a WAPI. A WAPI is a small (1.5 inches long) reusable Water Pasteurization Indicator that is simply a closed plastic vial that contains a small amount of soy wax that happens to melt at 158 degrees.



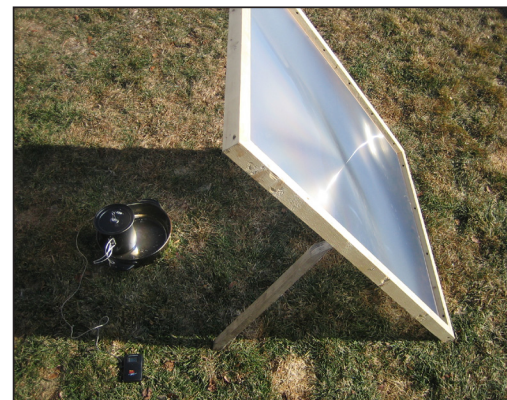
WAPIs have been distributed around the globe by aid organizations to help people get the safest possible water while using the least amount of fuel. You don’t NEED a WAPI to pasteurize water—you can simply use a thermometer—but WAPIs are cheap, easy to use, durable, proven, and convenient, if you can find one.

Back to the process. We’ve got our heat source (Fresnel lens+sun), we’ve got our temperature target (158 degrees), and we know that we need either a thermometer or a WAPI. Now all we need is a container to heat the water in, and that’s pretty simple. You can use any black metal container that you can put a lid on that can handle being heated. The smaller container you use, the quicker it will heat up, but the more batches of water you’ll need to pasteurize per day.

My suggestion is to use a pre-painted black cooking cup with a lid. One of the easiest places to get one is from REI. Here is the URL for the specific set that I’ve found to work well that is easy to find: <http://www.rei.com/product/799277>

There’s nothing magic about that particular set of cups, other than that REI has many locations around the country and people who don’t have an REI near them can order online. You probably already own something that will work.

Once you have everything, simply place your container on the ground or on a platform, place your Fresnel lens between the sun and your jar, and adjust it until as much of the focal area as possible is on your container and wait for your water to heat up. Remember that these focused rays are hot and can burn you, so use tongs or heavy gloves when you’re manipulating items in the hot zone.



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In this picture, you can see that I’m using a remote cooking thermometer. On an 18 degree day, it took 10 minutes and 28 seconds to heat the water from 58 degrees to 158 degrees. The lid being cracked made a BIG difference. The next time I did it, I didn’t use a thermometer and the lid stayed closed. As a result, the temperature of the water was 177 degrees after 9 minutes. A few more minutes, and I would have had boiling water and I could have drawn off the steam and had distilled water.

### Here are some tips:

- You want your Fresnel lens to be perpendicular to the sun. I rotate the base so that it’s perpendicular to the sun and then tilt the lens down until the sides are perpendicular to the sun.
- You want as much of your focal area hitting your container below the water level. The water will still heat up if your focal area is above the focal area, but not as quickly.
- We are used to heating water from the bottom and having all of the water heat up at roughly the same rate. With solar heating, since the heat is not being applied from the bottom and since heat rises, the bottom will heat up last. In practice, this means that when I’m using a remote grilling thermometer that’s measuring the temperature at the bottom of 16 ounces of water, simply stirring the water will make the temperature at the bottom jump up 5-10 degrees. So, if your temperature has plateaued anywhere over 150 degrees, stirring has the potential of bumping the temperature over 158 degrees.
- Most, if not all big Fresnel lenses are directional and will work much better if they’re pointed in the right direction. After testing mine both ways, I put an arrow on the edge of the frame that points to the sun and wrote “sun” on it.
- One of the biggest issues with any heating system is minimizing heat loss. In this case, the two biggest losses of heat are due to air sucking heat from the walls of your container and steam escaping out of the top of your container.

- You don’t want an air tight lid, or else you have the potential of creating a bomb, so you’ll always lose some heat through the lid. In addition, you’ll lose heat when you open your lid to check on your WAPI or use a thermometer to check the temperature. (Ever heard the saying, “a watched pot never boils?”) I usually use a remote grilling thermometer when I’m testing new configurations and they make it so I don’t ever have to remove the lid, but the lid is always cracked some. Once you know how long it takes to heat up a given amount of water, simply set a timer for a minute or two longer, walk away, and confirm that you’ve hit 158 degrees.

- One of the easiest ways to prevent heat loss due to the air conducting it away from your container is to put your container in an oven bag, like what you’d use for cooking a turkey or ham. They do reflect a significant amount of the sun’s energy away from the container, but if you’ve got high winds, low temperatures, high humidity, or a combination, the reduction in lost heat due to conduction is worth it. Since you’re dealing with very high temperatures, you want to try to keep your oven bag 3-6” away from your container so it won’t hit your cup and melt. Remember that it only took 9 minutes to heat water from 62 to 177 degrees on an 18 degree day without an oven bag, so you probably won’t need one.

- An advanced strategy, if you have an enclosed solar oven, is to put your container in the solar oven and use the Fresnel lens to focus the sun’s energy into the oven and onto the container.

- Also, keep in mind that it will take more or less time depending on several factors, including cloud cover, air quality, elevation, latitude, (I did these tests in Salt Lake City in January. Because of the elevation and latitude, it is a great location for solar applications) temperature, humidity, wind, and time of day. The more you can block the wind, the better.

On the topic of cloud cover and air quality...Salt Lake City, where I did the tests, regularly has 5-7 day