

10-16-2009, 3:29 PM

Are there any good internet sites that explain how to package and preserve firearms and ammunition for long term storage. In particular, I am interested in long term underground storage.

What tools and chemicals should be buried with the firearms and ammo to insure functionality when dug up in a decade or two?

Solidsnake87

10-16-2009, 4:05 PM

Kind of a random question but ammo and guns will do fine stored underground on their own. Just lube them up somewhat excessively before storage. Use a good gun oil with some kroil instead of CLP since that stuff evaporates with time.

Put some anti-moisture packets in the safe or whatever you are storing the equipment in. If you are really anal about moisture, then pick up some of those plastic bags made to seal off firearms. Cheaperthandirt carries the ones that were issued to troops in WWII for beach landings.

As for ammo, that stuff stores just fine. Conventional ammo will last up to 30 years before the primers become useless. If you store corrosive ammo, the primers in that stuff makes the ammo last literally forever as long as the ammo does not come in contact with moisture. For this reason, I store corrosive ammo only cuz its not so picky.

sierratangofoxtrotonion

10-16-2009, 4:10 PM

If you go to some sort of boating supply store, they often sell small buckets, like 1/2 gallon size, of dessicant powder. I would suggest getting one of those and putting it in whatever container you're using.

And find a way to seal it all up good.

uxo2

10-16-2009, 4:12 PM

If it gets that bad ...then why bother...

Beelzy

10-16-2009, 4:39 PM

Why bury your guns and ammo.....we're going to be needing them one day.

Soon.

The Director

10-16-2009, 5:08 PM

Go to survivalblog.com and do a search of his archives. Jim Rawles (site owner) has discussed this topic at length. I read an article on there where they use PVC piping to make a burial tube - there are also commercially available tubes for this purpose.

Go look him up.

locosway

10-16-2009, 5:37 PM

I always wanted a rifle oiled and vacuum sealed in plastic along with magazines and a few thousands rounds of ammo.

audihenry

10-16-2009, 5:44 PM

Why bury your guns and ammo.....we're going to be needing them one day.

Soon.

We call this the Red Dawn Syndrome. :chris:

But seriously, you can cosmo the hell out of it or put it in a bag with some water absorbers.

CHS

10-16-2009, 6:34 PM

This: http://www.brownells.com/.aspx/pid=26344/Product/RUST_VETO

Plus a good sealed tube, inside a heavy duty PVC bag, inside another heavy duty PVC bag.

Ammo: A good ammo can with some new silicone oil on the rubber gasket, also double-bagged in the heavy duty PVC.

Fate

10-16-2009, 6:46 PM

Article by guy that put one in ground for 15 years:

<http://www.backwoodshome.com/articles2/wood115.html>

corporateslave

10-16-2009, 6:50 PM

Here is an excerpt from a huge weapons related compilation of books I downloaded.

"Sections of 4", 6" or 8" SDR (Sanitary, Drain, Refuse) pipe will make excellent cache tubes. This type of tubing isn't cheap but is often left lying around at construction sites, ready to be "liberated". Be sure to use tubing with heavy wall thickness, at least 3/8". Cut the tubing to about 60" in length, this will allow enough room for all but the longest rifles. Remember that a cache tube may have to be reused for different weapons so don't size the tube to fit a specific weapon. Slip-on type end caps are the best choice for sealing up the tube, avoid threaded caps or plugs as they are more expensive and tend to get fouled up with dirt, making them difficult to reopen after recovery of the cache.

Using epoxy or PVC cement, permanently seal up one end with an end cap and test to be sure the seal is airtight. This is best done by placing the tube into water, sealed end down, and looking for leaks.

The next step is to prepare the weapons for caching. It is important to give the weapons a thorough coating with some type of thick, rust-preventative grease. There is some divergence of opinion on just what type to use but I would suggest that just about any type of thick grease will do the job if the cache is for a short to medium duration (1-7 years). Don't be tempted to apply the grease too thickly, a thin coating will do just fine and will be MUCH easier to remove later (anyone who's experienced trying to remove grease from a cached weapon knows what I mean!). Care must be taken with telescopic or laser sights not to get grease into the optics or electronics. Keep the lens caps on and wrap the scope or laser with plastic bags and tape before applying grease to the weapon. Don't remove the scope from the weapon because it may be impossible for you to re-zero it back in later. Batteries should be removed from lasers before caching. Avoid disassembling weapons if possible as some small parts may become lost in the process. Be sure that ammunition is not exposed to contact with grease or oil as they can penetrate into the cartridge and make the ammunition useless. Seal ammunition into airtight containers or "ziplock" bags to reduce deterioration.

Silica gel can be added to the tube, along with the weapons, just before sealing as a further rust-preventative measure. This step is not really necessary unless a very long-term cache is considered.

The tube is now sealed up with the other end cap. This can be done by either applying grease to the inside walls of the end cap and sliding it into place or by permanently cementing the end cap on. The cap should be cemented if a very long term (10-30 years) cache is being considered or a very hostile environment, such as underwater or in a swamp, is chosen for the cache.

You are now ready to choose a location to place the cache. A soil auger will be necessary if you intend to bury your cache tube underground. A manual soil auger is the best way to dig a vertical hole for the cache tube. Soil augers are used to dig fence post holes and are sold in 6"- 12" models. Soil augers are connected to a turning handle on top with a length of 3/4" pipe. The device will dig down to a depth of about four feet. At this depth, you will have to add a three foot extension to the pipe in order to dig down deep enough to bury a 60" tube one foot underground. Don't even consider burying your cache horizontally, it presents too large a target for metal detectors. When buried underground, a cache tube will be nearly impossible to remove as the soil settles in around it. For this reason be sure that the permanently sealed end of the tube is placed down into the hole. In this way you can access, remove or replace weapons in the tube without removing it from the ground.

Be sure to place your cache at quite a distance from your residence or retreat. At 100 feet distance any searchers must cover 31,400 square feet in order to conduct a thorough search, not a difficult task with modern metal detectors. At 200 feet the area becomes 125,600 square feet, still not an insurmountable task with the latest equipment and a dedicated team. Move out to 1000 feet and the area becomes 3.14 million square feet... almost 71 acres!! If the operative was to scatter old nuts, bolts, nails and other pieces of scrap metal throughout this area, even a very dedicated team with unlimited time and monetary resources would soon tire of false readings and move on to an easier case. A great place to hide a cache is right in the middle of a little-used rural dirt road. This way you can get to your cache quickly and easily while still having it located a great distance from your residence. In this case be sure to watch for any upcoming roadwork in the area as some construction worker may turn up your cache.

Some other good locations for your cache include; in grain bins and silos, piles of coal, gravel, firewood or boards, under pig pens and anywhere else that presents great difficulty to searchers."

The author mentions silica gel but any desiccant could be used.

locosway

10-16-2009, 6:53 PM

If I had a lot of property I'd likely have some storage here and there for those "just in case" situations.

Fate

10-16-2009, 6:56 PM

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So THIS is why pullnshoot was looking for a crate of Mosin Nagants! LOL

goober

10-16-2009, 7:01 PM

ack, Fate beat me to it...

<http://www.backwoodshome.com/articles2/wood115.html>

The Director

10-16-2009, 7:09 PM

Also remember to never vacuum bag ammo - the vacuum is enough to pull the bullets from the casings sometimes.

CHS

10-16-2009, 7:22 PM

Also remember to never vacuum bag ammo - the vacuum is enough to pull the bullets from the casings sometimes.

That's some pretty crappy ammo you've got there.

The Director

10-16-2009, 7:48 PM

Heard a ton of anecdotal evidence that vacuum can unseat the bullets. I could be wrong.

Ifticar

10-16-2009, 7:50 PM

Article by guy that put one in ground for 15 years:

<http://www.backwoodshome.com/articles2/wood115.html>

Great article. Thanks.

Ifticar

10-16-2009, 7:51 PM

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Thank you for information and your hard work of transcribing it. I really appreciate it.

Librarian

10-16-2009, 7:52 PM

I like someone's .sig over at the High Road: approximately 'If you think it's time to bury your guns, it's time to dig them up.'

The four-box theory of democracy - soap, ballot, jury, cartridge - use in that order.

locosway

10-16-2009, 7:58 PM

I like someone's .sig over at the High Road: approximately 'If you think it's time to bury your guns, it's time to dig them up.'

The four-box theory of democracy - soap, ballot, jury, cartridge - use in that order.

Not all of them, just a couple for those "WTF happened" moments.

**Bury a gun and
ammo for 15 years**

**(and be assured everything still
works when you dig it up)**

By Charles Wood

Issue #115 • January/February, 2009

Back in the early 1990s the outlook for the nation in general and gun owners in particular seemed rather grim to many people. A few years earlier in 1986, Congress had banned civilians from owning newly manufactured machine guns. There was ever more strident talk of banning semi-automatic weapons or so called assault weapons. Many of us regarded a semi-automatic rifle as the foundation of a home defense battery. Many of us believed that more laws banning ever more types of guns were imminent. About that time I acquired a Ruger Ranch Rifle through a private sale. I decided to stash it away in a safe place just in case my worst fear was to materialize, another gun ban.

The general location of the pipe after the logging was done. It would have helped if I had had a better method of locating the pipe.

First order of business was to decide how I would prepare the gun for long-term storage and where I would store it. I decided that for maximum security I needed to bury it. This would keep it safe from all but the most determined government goons. I set about finding an appropriate location. I live in a fairly remote, wooded rural area in the northeast. One day as I was walking in the woods I noticed a hemlock tree had blown down and been uprooted by a recent windstorm. There was a small crater about eight feet across and three feet deep where the root ball had been torn out of the ground. It occurred to me that this would be a good spot for my rifle.

Since I now had the location, I began preparing the rifle for storage. I bought a piece of 6-inch diameter schedule 40 PVC pipe, end caps, and PVC solvent from a hardware store in another town where I had never done business before. Being in a rural area where everyone knows everyone I didn't want to arouse any suspicions about what I was up to. I then disassembled the rifle and completely coated every metal part with a rust preventative oil intended for storing unused machinery in damp locations. This oil dries to form a waxy coating. I was extra careful that the bore was completely coated. I wanted to vacuum-pack the rifle as extra insurance against rust. As it turned out my employer had just taken delivery of a mainframe computer that happened to be wrapped in a large

Here is the top of the pipe uncovered with the noose and winch attached.

aluminized mylar bag for shipping. This proved to be the perfect material for my purpose. I discovered that with a warm iron I could fuse the edges of this material into a custom-fitted airtight bag for the rifle. I placed each individual component of the partially disassembled rifle in its own custom-made mylar bag with a small bag of silica gel desiccant to absorb any moisture present. Using my shop vac and an iron I managed to produce a professional-looking vacuum-packing job. The barreled action, stock, trigger assembly, hand guard, magazines, scope, and mounts all went into individual bags.

Since the rifle was so heavily preserved I knew I would need something to degrease it with when I finally retrieved it so I included two small cans of 1-1-1 Trichlorethane in the package. Also, since a rifle is of little use without ammunition, several thousand rounds of .223 were included. Because every well-maintained rifle needs to be cleaned and oiled occasionally, I added a cleaning rod, patches, Hoppe's #9 solvent, gun oil, grease, and owner's manual. A set of reloading dies was included as well. If dire circumstances required me to retrieve my rifle I wanted to be sure that I would have everything at hand necessary to put it into service. All of the individually wrapped components were sealed together into a larger mylar bag custom-made for the purpose along with a couple more medium-sized bags of desiccant. A few bags of ammo were taped to the side of this bag and the entire thing was wrapped in duct tape. Additional ammo was packed into zip lock freezer bags.

The pipe was carefully sawn open to reveal that it remained watertight after 15 years underground.

With everything prepared I was ready to load the pipe. I first put in a large bag of

desiccant followed by several bags of ammo, followed by the bag containing the rifle and supplies. Since there was some empty space surrounding the rifle, I dumped in some loose ammo just to fill the voids. More bags of ammo were then added to fill the pipe. Since I had a tank of nitrogen available, I also purged the air from the tube with the nitrogen before sealing it. This was undoubtedly overkill but I had it available so I used it. I took extreme care while using the PVC solvent to insure that the caps were perfectly sealed and watertight. Finally, I painted the pipe black, and at this point, 15 years later, I'm not sure why.

I loaded the sealed pipe in the back of my truck and drove up into the woods to the downed hemlock tree previously selected. With a post hole digger I dug a hole about six feet deep and a foot in diameter in the center of the crater left by the root ball of the tree. After gently placing the pipe in the hole, I carefully pulled the tree upright using a chain attached to my truck. By this time the tree had died and most of the needles had fallen off. Once returned to vertical it was pretty stable and a little dirt and debris shoveled around the edges did the trick. In any healthy, well-managed forest there are always a few standing dead trees, so this one would not arouse the curiosity of anyone who hunted or hiked there.

The contents of the pipe, still in the protective wrapping.

I never told anyone what I had done and I didn't write down the location anywhere. About five or six years later I had a timber harvest. I had my consulting forester mark the tree as a wildlife tree so it wouldn't be disturbed by the loggers. It was, after all, popular with the Pileated Woodpeckers. It has been 15 years since I buried the rifle and I have recently had another timber harvest. The tree was quite rotted by this time and it didn't survive the harvest. I had been keeping an eye on it, so when it finally fell I marked a nearby tree so I could find it again after the loggers left. Even careful logging causes quite an upheaval in the forest and it can be difficult to locate a specific spot after all the landmarks have been changed. After the logging crew had left it took me several days with a shovel and a rake to locate the rifle. In hindsight, I should have had some additional way of locating it. Since the top of the pipe was about three feet below ground level, my old metal detector wasn't much help. I decided that it would be interesting to retrieve the rifle and see how well my storage plan had worked.

I managed to locate the very rotted stump beneath the logging debris and started digging. Once I located the top of the pipe I excavated around it about a foot on all sides and to a depth of about a foot below the top of the pipe. I attached a noose of polypropylene rope

and used the winch on my truck and a convenient log to slowly pull the pipe out of the ground. After all these years the soil was still very loose around the pipe and it was relatively easy to pull it out. I could have accomplished it without the winch had it been necessary. After removing the pipe, I filled the hole with logging debris and covered it up with some loose hemlock boughs to prevent someone from falling into it.

All components were individually wrapped and sealed. The contents show no adverse affects after spending 15 years underground.

Back at the house I hosed off the mud and prepared to saw the pipe open. Using a handsaw, I very carefully cut completely around one of the caps. I didn't want to damage the contents by being too enthusiastic.

With the cap removed it was immediately obvious that no moisture had gotten into the pipe. I carefully slid the contents out on to a table for examination. After unwrapping the duct tape and removing the outer bag, it was obvious that all was OK. All of the individual packages were unwrapped to reveal the contents were as good as the day they were packaged.

So if you think it is necessary, you can store a rifle safely for long periods in harsh environments. A little attention to detail, some scrounged materials, and a few dollars in supplies are all it takes.

Cache is King: How to Store Weapons and Non-Electronic Equipment for the Long Term

By [Steve V.](#)

2 of 3 in the series [Cache is King](#)

Cache is King

1. [Cache is King: Learn How to Plan and Create Your Own Survival Cache](#)
2. Cache is King: How to Store Weapons and Non-Electronic Equipment for the Long Term
3. [Cache is King: Why Caching Radio Equipment is a Top Priority](#)

[In the first part](#) of this series on caches, I provided an overview of various kinds of caches and their purposes. The goal of this second part is to provide more detailed information about how to prepare a weapons cache for decades in long-term storage. I'll also be providing suggestions for specific types of weapons and related technology. Electronics have unique storage requirements that merit a separate discussion and those will be addressed in a subsequent article on caches.

Caching lethal weapons and ammunition together is serious business. If possible, it's always best to remove a part of the weapon necessary for it to fire and place that part in the spares container co-located with, but separate from the weapon. For an M4 carbine, the firing pin is a logical disabling item and the lack of it will render the weapon safe. It can be fired again only by disassembly, insertion of the missing firing pin in the bolt carrier, proper reassembly and loading of the weapon. These actions are beyond the capacity of most children and adults who aren't experienced with weapons.

Considerations for Caching Weapons

Caching weapons and ammunition provides a secure place to store any surplus and if done correctly, is not only better for the weapon and ammunition, but more secure than any gun safe. Cached weapons and ammunition are hedges against future shortages, even in the face of state-sponsored confiscation. In particular, items cached for the latter purpose should be free of latent fingerprints and biological material that may lead to identification of the cache owner. It probably goes without saying, but caches with weapons shouldn't contain anything that is database linked to the owner.

The highest ethical and moral obligation I can impart to anyone clandestinely caching weapons and ammunition is to ensure that the cache is secure from inadvertent discovery by children or adults. Various different cache containers were discussed in Part I and included PVC tubing, [Monovault commercial cache tubes](#), which are offered in a variety of sizes and plastic buckets of the five to seven gallon variety with [Gamma seal](#) or regular snap lids.

Obviously there are many other containers suitable or even specific to unique items. Food properly canned in Ball or Mason jars, especially with reusable [Tattler plastic lids](#) and gaskets under partial vacuum seal are useful to store and preserve food.

Atmospheric pressure differential tightly seals the gasketed lid or 'flat' to the jar making the ring redundant after the seal is 'set'. The combination of glass jar and plastic lid makes for a rust free, albeit fragile container, which is suitable for preserving a variety of materials (including small caliber ammunition) for long term storage.

Larger containers such as aluminum [US Military medical containers](#) are useful for caching more bulky items. These medical containers are made of rust free aluminum with ammunition can like rubber seals and are watertight. They do, however, suffer the liability of having steel clasps that are guaranteed to rust. These larger metal containers also load easily in a trailer for quick evacuation.

Although the focus of this article will be on PVC and Monovault commercial cache containers, there are a plethora of special use containers suitable and perhaps even specific for special purpose caches.

Understanding Materials and Rust

Most modern firearms, including those advertised as being made of stainless steel, usually contain small parts (like springs) that aren't composed of stainless and given the presence of oxygen and moisture, will corrode or rust over time. In fact, even stainless steel will rust given the proper environment.

Machinists have long recognized that some people leave a body moisture that's particularly corrosive and these people are usually referred to as "rusters." In most locales, the atmosphere has sufficient water content that will eventually rust many unprotected metals. For these reasons, most people carefully clean and wipe the surface of their weapons with an oily rag to remove fingerprints and leave a film of oil that serves as a moisture barrier.

Those familiar with weapons understand that WD-40 isn't a gun oil and it's recommended that weapons being cached be treated with a high quality preservative lubricant such as [Birchwood Casey's Barricade](#). Some advocate filling the bore with grease, however it's my opinion that in a properly prepared cache, this practice is redundant at best. If grease is used in the barrel bore, the weapon should be appropriately tagged against the possibility of a future firing without first removing all traces of grease.

Well designed weapon caches will include, at minimum, a kit of small user replaceable parts, cleaning supplies, ammunition, additional magazines, holster or sling, weapon maintenance multi-tool with telescopic sight mount wrenches, a chest rig and/or ruck with water bladder as appropriate, fixed blade knife and a folding bag in which to carry everything away from the cache.

Other related items might include high quality binoculars such as any by Leica, which are available with range finding options, a first rate water filter such as the [Katadyn Pocket Filter](#), maps or charts of the area of operation, a best quality compass such as the [Brunton Pocket Transit](#) and several methods of starting a fire.

Location, Location, Location

Particular attention must be paid to where the weapon cache is hidden. In part one, I mentioned a shallow weapons cache buried on the author's land, with the express purpose of providing ready access to the tools necessary to retake the residence by force if necessary. Further away from the residence in public or national forest property for instance, other weapon and ammunition caches could be buried more deeply so as to help defeat metal detectors.

There are several other countermeasures you can take against inadvertent discovery, including salting the area with bits of metal such as old welding rod stubs, junk bolts and

nuts or by transplanting thorny bushes to the cache area. In particular, look for non-food bearing thorny plants and go to great lengths to secrete the cache where it will be protected from the casual passerby due to the presence of these plants. A game camera is useful for observing any traffic in a proposed cache location.

In addition, the cache should not be located in an utility right-of-way. Future digging in a right-of-way for repair or increased service capacity should be expected and such excavation poses a direct threat to a cache. The same holds true for road right-of-ways and even unimproved public dirt roads will have right-of-ways located some distance from either side of the road itself.

Properly Preparing Weapons

So what should be done to preserve weapons and other equipment from rust and damage when placed in long term storage? The weapon should be zeroed at a known range and sighting data should be recorded. The weapon is then disassembled and all parts are carefully cleaned. The bolt face and/or revolver cylinder face should be scrubbed until all traces of carbon are removed. A 1/4" diameter brass rod with one end flattened into a screwdriver shape is useful to scrape away carbon. Brass is a soft metal and won't scratch harder weapon metals.

Then, the barrel bore is cleaned until it's bright and shiny, lightly oiled and then set aside for a day. The following day, the bore is re-cleaned until no trace of carbon and/or fouling is detected; then the weapon can be coated with preservative. The remaining parts are carefully inspected, cleaned and coated with a preservative and the weapon is reassembled, leaving out a part or parts necessary to fire ammunition.

I generally wear linen gloves of the type favored by document examiners, rare and forensic, when cleaning and handling a weapon or its parts. This practice ensures no latent fingerprints will be left on the weapon that might cause rust and future owner/handler/shooter identification, should a third party discover the cache.

After the weapon is verified unloaded and with muzzle pointed in a safe direction, the trigger is pulled, releasing tension on the springs. For Mauser type bolt-action rifles, pull the trigger while closing the bolt. The weapon zero information is then recorded on a tag tied to the trigger guard and the weapon is placed in a [Z Corr bag](#) and set aside. Each magazine should be completely disassembled, cleaned, oiled with Barricade and placed in the bag.

An [aluminum tin](#) containing dried desiccant should be added to the protective bag and sealed. If a Z Corr vacuum bag is used, remove the air in the bag with a vacuum cleaner following manufacturer instructions. The zip lock seal on the vacuum bag is robust and may require a set of pliers for mechanical advantage when sealing.

The weapon and magazines (and telescopic sight if used) are now stored in their own protective environment with minimal moisture. This style bag should also serve to protect its contents from inadvertent water intrusion into the cache due to mechanical breach or seal failure.

Wearing document examiner gloves, carefully examine and wipe every round of ammunition and place inside an appropriately sized heavy gauge plastic bag. A tin of desiccant should be added to the bag before it's impulse sealed. Repeat this process with subsequent lots of ammunition until all of the ammunition intended for the cache is bagged and sealed.

While you may be tempted to use a cheaper container (paper or cloth) of desiccant, remember that the purpose of the desiccant is to absorb moisture and by so doing, it will eventually wet the packaging material. If that material is in contact with metal or your ammunition, it may cause corrosion.

The higher quality aluminum desiccant containers won't rust and the moist desiccant is contained within the can safely away from the preserved items. The last two items added to the cache should be a large container of desiccant and a bag or ruck with which to transport the cache contents.

Sealing Your Container

To seal a Monovault cache, spread a coating of grease or silicon lube on the o-ring and place it in the groove around the lid. Screw the lid into the container using moderate force. Grease the inner circumference of the protective cap and place it over the lid. Wipe away any grease that may have squeezed out from under the cap.

Where the joint of the protective cap meets the vault body, wrap with several turns of high quality plastic electrician's tape then overlay this tape with Gorilla tape. Wear appropriate gloves when handling the cache tube and particularly when taping as biological materials and latent fingerprints are easily transferred to adhesive tape.

Tie a six-foot length of polypropylene rope (highly resistant to water) to the circumferential notch just below the protective cap and wrap the remainder into the notch; tucking in the last wrap under the previous preventing it from unwinding. The purpose of this rope is to aid in recovery of the cache tube by tying a loop in the free end and placing it over a Hi-Lift jack tongue. The cache tube is now ready for clandestine burial.

Jogging Your Memory

The biggest threat to successful recovery of the long term cache isn't inadvertent discovery by a third party, but simply forgetting where the cache was emplaced. Read that part again for emphasis.

Take a photo of the completed cache that's ready to be covered. Take another photo from further away. Note at least three bearings from the cache to geologically and temporally invariant objects. If trees or large immovable rocks are in the area, measure the distance from the cache to at least three of these objects. If necessary, these distances and bearings can be easily encoded by doubling or transposition, but whatever mechanism is used, it should be unforgettable.

...it holds the key to recovery of all other caches.

Reference trees can be notched on the side away from the cache and witness rocks can be marked with cold chisel. Be sure to photograph all reference objects from the cache. Plan a logical approach to the cache and shoot a bearing line along this approach. Photograph this approach both from the cache and from a logical point along the approach. Describe the cache location in writing along with each reference point and witness mark.

Draw a map of the relationship of the cache to references and witness marks. Your goal is to provide such a clear description of the cache location that an heir you've never met could locate it decades later. Transcribe the written description of the cache and its contents to an electronic document and drop in all photos, identifying each. Carefully recreate the hand drawn map of the cache on this reference sheet.

Revisit the cache seasonally and take photographs as appropriate. Incorporate these subsequent photographs into the cache description. An example of this can be seen [in this PDF file](#). Laminating these cache location descriptors will keep them waterproof and aid their long life in the cache recovery tube.

If several caches are all located in a general area, you might wish to prepare a cache of recovery tools and equipment. These might include a short sharpshooter shovel, hand trowel, nylon tape measure, compass, gloves, a small tarp and copies of the relevant cache descriptive documents. This cache should be especially well hidden with the location indelibly marked in the mind as it holds the key to recovery of all other caches.

Accessing Things Within a Cache

Deeply buried cache tubes designed for access through the upper end present unique challenges during recovery, especially if the cache is to be accessed and then resealed and left in place. Imagine a situation where the top end of the cache is two feet below the surface. If the cache tube is four feet long, the bottom of the cache will be six feet deep, rendering any loose small items in the bottom of the cache almost unrecoverable.

In many instances, these small items store best in a temperature equilibrium at the bottom of the cache tube (ammunition for example). A bag containing these small items with parachute cord tied to the hand grip of the bag and the other end to an item near the top of the tube is a most helpful aid to retrieve any small items and pre-packaged impulse sealed plastic bags of ammunition, which can be heavy.

Providing a yard or so of extra cordage per bag, loosely tie the free ends to the Z Corr long weapon bag in the area of the weapon pistol or hand grip and weapon body, just tight enough that it won't slip down. Leaving extra cordage between the bag and weapon allows you to use the long weapon as an aid to pull up the small bags from the bottom of the tube. Alternatively, the free ends of the cord can be tied to a cleaning rod at the top of the cache.

During recovery of a Monovault cache, dig a 1.5 foot diameter hole, exposing the top end of the tube to a depth of about one foot below the top. If the cache tube is co-located near a thorny bush as recommended, a canvas tarp can provide protection from thorns. Dirt and debris entering an opened vertical cache tube is almost impossible to remove without

removing the tube itself from the ground.

Digging a larger diameter access hole deeper than necessary is quite useful, as any debris knocked free during recovery will slide to the bottom of this deep hole and not into the bottom of the cache tube. A hole larger than the cache tube is also helpful when resealing the tube's protective top with tape..

The Problems with Plastics

Plastic pipe presents unique challenges for caching. Over the decades, I've tried several methods including threaded end plugs, one end plug sealed only with grease, one end plug seated without sealer and RTV placed around the cap/PVC tube to seal against water and cementing both end caps to the tube.

...the contents should always be protected by desiccant.

When using two end caps and large diameter PVC tubing, sealing the second cap can be difficult. This is because as the cap seats on the PVC pipe, the volume inside the tube decreases which creates a high pressure that tends to force the cap off of the pipe. When sealing a cache with two caps, always use the slowest hardening agent possible in order to provide adequate time to seat the second cap.

The most waterproof and strongest PVC tube cache will have two cemented end caps. Unfortunately, recovery of items from inside the cache will likely involve a saw and at best, the PVC tube will require a new cap or union and hence will be either shorter or longer than it was initially.

However, PVC tubing caches are almost optimal for storing ammunition either loose or in US Military ammunition cans. The larger diameters will accept these ammunition cans that alone provide a great measure of protection and permit easy segregation by caliber. Whenever using a hermetically sealed cache, the contents should always be protected by desiccant.

The cut tube in the photo at the beginning of the article will easily hold 2,000 loose rounds of .223 Remington (similar to 5.56×45 Nato) and the larger uncapped tube will hold more than 5,000 loose rounds with both including a large can of desiccant. When two end caps are cemented onto a tube, a PVC tubing hand saw or similar will be necessary to access the contents.

Using Nitrogen

Cache tubes can be backfilled with nitrogen for the very best in long term preservation. Nitrogen in pressurized bottles is available from welding supply dealers, along with threaded valve adapters and hose barbs. Nitrogen is an inert gas and will neither support combustion nor corrosion. However, it should never be used in enclosed or confined spaces, as it can cause asphyxiation by displacement of oxygen.

To backfill the cache tube with nitrogen, place the content-filled tube upright with the hose from the nitrogen bottle near the bottom of the tube. Open the valve on the bottle slightly until the hiss from releasing nitrogen is heard. Place a cover loosely on the open

tube end so there's only a little space around the hose. After a moment, hold a lit flame near the opening around the tube. When the fire extinguishes, the nitrogen has displaced almost all of the oxygen in the tube. Turn off the nitrogen bottle valve, remove the hose and promptly seal the cache tube. Desiccant should always be used in hermetically sealed caches, even when backfilled with nitrogen.

PVC Considerations

Threaded PVC end caps avoid the pressure seating issue when sealing, however those caps are uniformly thinner and weaker than the PVC tubing. This thinness greatly reduces the mechanical integrity of the cache. If a threaded cap is used on one end of the tube, it should be well greased before screwing into its adapter sleeve that's cemented onto the PVC tube and the square wrench device should be turned inward for protection.

...you should seriously consider the much lighter Monovault

The outside adapter/cap interface should be coated by RTV or something similar as an additional barrier to water intrusion. Large diameter PVC tubing can be quite heavy, even when empty, so care should be taken not to rest the tube vertically on a cap not completely threaded into the adapter. When buried vertically, the threaded cap should be upright. Layer sand or sifted dirt on top of the cap for a depth of several inches.

This protects the thin cap from rocks. Additionally, a flat rock just larger than the diameter of the cache tube can be placed on top of the sand layer as a protection against hooves, etc.

Eight to twelve inch diameter PVC tubing is quite strong and unlike the Monovault, can be buried horizontally. Horizontal burial will help protect any threaded caps. Cut a piece of hardwood into a 2" square section. This will fit into the square recess in the threaded end cap as an aid for tightening and removing. A one foot diameter PVC cache that's four feet long will likely require several strong men to maneuver, as the cache and contents may weigh more than 300 pounds. For this reason alone, you should seriously consider the much lighter Monovault cache.

Equipment Suggestions

Like many of you, I've developed preferences for some brands and types of equipment. Having traveled this world depending upon only what I could carry with little or no hope of resupply, I eventually accumulated the very best quality and most dependable types of portable technology. Caching, which is the very act of preparing against future uncertainty and lack of availability, should include securing and preserving equipment that offers great dependability, long life and maximum utility.