Ticom 7

Technical Intelligence Communications

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Soon it will be midnite, in New York.

When I write about/as *Agent T.W. Lee: Interzone Intelligence*, I like to include the sentence "Soon it will be Midnite, in New York." Why Midnite, and why New York? Midnite is when a day officially changes. New York is considered in many instances to be the center of the world. They don't show the New Year's Eve ball drop in Cleveland. New York also happens to be where this whole thing that you're now reading started thirty-two years ago. Midnite however is also when all good people are supposed to be asleep and dreaming, except for us outliers who are up late working a muse.

I have been in New York at midnite. The last train North that would get me to my destination in time to catch a cab home was a little after 12:00. I later had a car and that all changed. I think the last train North was at 2 or 3 in the morning, but if you were down in Gotham that late you might as well just crash at a friend's apartment and leave the city the next morning. (Only the insane drive in New York if they're from out of town.) Sometimes late nite hacking sessions caused you to lose track of time, especially if you were working on a particularly difficult problem.

Back in the day when it was midnite in New York one might find themselves sucking down a Kirin Ichiban at this place down in the East Village called *Around The Clock* with other fellow outliers who were working a muse or otherwise dealing with being awake when all good people are supposed to be asleep and dreaming. Or maybe they were ruminating over a coffee and a tuna melt at that 24-hour diner down by 13th Street and 7th Avenue. Those were only two of many places you could find yourself when it turned midnite, in New York. They are both gone now, but there are others. The city never sleeps.

RIOTS IN LOS ANGELES: Eruption; Some Violence On the Streets of New York

One of the last times I visited Around The Clock was with fellow outlier Emmanuel Goldstein, my editor at *2600*. I've been writing for *2600* longer than I have been doing *Cybertek* or any of the zines that came afterwards. It was on May 1st, 1992, the night that the Rodney King protest in

Greenwich Village turned into a riot. I had my trusty PRO-34 handheld scanner with me, and previously programmed it with every NYPD frequency used in downtown Manhattan. When word reached us about the protest, we set out to go witness it (we are writers after all). In short order I had found the frequency used for response, and we had a nice stream of information to complement what we were watching from a position of relative safety about 2 blocks away, which we learned was the optimal distance to observe a civil disturbance while staying out of the way of both the police and protesters. This was the first time I went to an active event and did COMINT, and wouldn't be the last.

Most recently another fellow outlier and I ran an urban LP a few miles out from a George Floyd protest march being held in a local city. While we didn't have the capability to monitor low-power on-scene communications (such as if the protesters were using FRS radios), we still managed to stay apprised of what was happening during the event. The PRO-34 was replaced by a PRO-43, and now a WS1040, but I still keep one handy.

The ongoing project to bring the lab/workshop back to where it was out west before the move back had progressed significantly since the release of *Cybertek #30*. The most recent edition was a monitor for video testing that included an ATSC tuner. Since OTA TV is yet another free news and information source, I pulled a WA5VJB 400-1000 MHz. PCB log-periodic antenna out of storage for a reception test. Scanning the OTA TV bands netted me 45 channels. The signal strength on a few of them is marginal, but

WA5VJB's website has plans for cheap yagi antennas with higher gain that you can make from scrap obtainium you may have handy. The OTA TV made a good addition to the AM/FM broadcast, shortwave and police scanner receivers that were already operational in the lab. It's total information awareness, as they say.

Total information awareness is important and useful because it lets you find out news, events, and incidents in your area without bias and gatekeepers. Pundits from both the right and the left are not only known to add their slant and bias to news stories, but also known to selectively report and distort information to their customers. In this day and age you simply cannot afford that level of de facto censorship. The solution is collecting your information directly from the source. Speaking of sources, do you know which two broadcast news sources are the most straightforward and unbiased? They are NPR and PBS. You will of also want to occasionally keep and eye and ear on the big four if only to see what the other sides are talking about.

When I hear a siren (or multiple sirens) off in the distance, if my police scanner is not on (as it is right now) I am prompted to turn it on. I generally find out what's the cause of the siren in a few minutes and can then go about my business if the issue is of minor or no concern. Most of the time it isn't anything to worry about unless traffic is blocked on a road I will be using shortly. If I ever see an increase in tactical military vehicle or air traffic along with an increase of encrypted communications on certain frequency ranges then my level of concern might be elevated.

VHF/UHF communications monitoring with a police scanner is particularly useful as it lets you keep watch on an area up to about 50 miles in radius from your home with little effort. If you hear an emergency call you can be assured that the incident is actually happening. Compare the usefulness of communications monitoring to the drivel that charlatans such as Alex Jones call "news," or some "intel report" that some unknown "3UP" fucktard posts to a Facebook group. I met the late Mike Vanderbough, by the way, back in 2014. I wasn't impressed back then, and am less impressed now.

There is a certain freedom to be had from being properly informed. NPR's financial sector reporting combined with historical stock market data and news about recent government legislation has enabled many fellow outliers to invest a nominal amount of discretionary funds that so far have produced gains exceeding the rate of inflation. Taking advantage of that information was pretty easy because the NPR analysts just come out and say

"There should be an increase in XXX companies' stocks because Congress and the President passed YYY legislation." That is an example of strategic intelligence.

About fifteen minutes ago, communications intercepted on my police scanner informed me of a vehicle accident that caused an intersection down the road to close. That closure might change the route I'll be taking on my shopping trip in about thirty minutes. There is an example of tactical intelligence.

Both the strategic and tactical intelligence examples are real news. They are both relevant and useful. What I just described are respectively known as *Open-Source Intelligence (OSINT)* and *Communications Intelligence* (*COMINT)*. OSINT and COMINT are not only useful for finding out news and information. The topics themselves are a filter. As you come across people who may qualify as *like-minded individuals* you can subtlety quiz them to see if they are worth dealing with. Do they understand and practice OSINT and COMINT? Do they instead parrot what they hear from the likes of Alex Jones, Ann Barnhardt, and other charlatans? If it's the former, then they might be worth talking and dealing with. If it's the later, you might want to have nothing to do with them. You see, soon it will be Midnite, in New York. When that happens the coach is going to change back into a pumpkin, and you don't want to be riding in it when that happens. (Bibbidi-Bobbidi-Boo!)

I'm going to show you how to make your own ride so you don't have to borrow your fairy godmother's for the next party. That's a lot harder to do these days because the Internet has you locked inside a walled garden of your own making. Hopefully the memetic triggers in this text have done their job, and I've released the bindings enough for you to not only consider attempting the stunt I'm about to outline, but actually do it. A word of warning first. What I'm about to suggest is particularly dangerous. If you are under 18, you should definitely attempt this because you stand to benefit from it more so then someone who is 58. I was about 15 or 16 when I first tried it, but I also played D&D back then.

When I first started this long strange trip some of my best discoveries were accidental ones found by just exploring different pathways. A trip to the computer section of a bookstore had me find Steven Levy's *Hackers* while seeking programming books for my Commodore VIC-20. That introduced me to *Computer Lib*, Robert A. Heinlein, and William S. Burroughs. (Burroughs

was part of the inspiration for T.W. Lee.) A fellow outlier and hacker known as “Bill From RNOC” who used to attend 2600 Meetings in New York (City) showed me a copy of William Gibson’s *Neuromancer*, which all the hackers were reading at the time. I found a copy in the Science Fiction at the same bookstore, but while looking for it I discovered Arthur Clarke’s *Report On Planet Three and Other Speculations.* The list goes on and on.

Decent bookstores (both new and used) are a sadly thing of the past. I wish I could tell you to go into your local Barnes and Noble to poke around like I did, but the selections just suck too badly. Not only that, but you are at this stage too limited to properly conduct this experiment. Nor am I one to suggest you go out and buy random books. Actually I am, but you probably wouldn’t do it anyway. For this experiment you need to visit a place you are either familiar with or avoid completely depending on how blue or red you are. That place is your local library.

Your local library is free. They have a selection of books you can borrow for while to read, take notes from, and copy pages out of. Their selection is broad and eclectic. Okay, it’s more broad and eclectic than you have probably experienced in the past. So, your first step in this experience is to visit your local library and get a library card. When you visit, you will see and experience new things. Mouth shut, eyes and ears open. You are in collection mode. Save the analysis for later.

Before you begin, you must acquire some tools for generating randomness. I know the first thing you’re going to reach for is an Android app on your not-so-smart phone, and if I were there I’d smack you across the knuckles with a yardstick like some old-time Catholic school teacher, in a virtual manner of course. Seriously, don’t do it. The process and tools should be analog and meat space.

In a public library, there are two broad selections of books: fiction and non-fiction. Any coin that resides in your pocket right now has two sides: heads and tails.

Works of fiction are arranged in alphabetical order by the last name of the author. There are 26 letters in the English alphabet. A deck of playing cards has 52 cards in it. In doing a little math you will discover that 52/2=26. Our table for fiction book selection using a standard deck of playing cards would look like this:

C – Clubs	S – Spades	D – Diamonds	H – Hearts
J – Jack	Q – Queen	K – King	A - Ace

	C	**S**	**D**	**H**
2	Q	F	Q	F
3	W	G	W	G
4	E	H	E	H
5	R	J	R	J
6	T	K	T	K
7	Y	L	Y	L
8	U	Z	U	Z
9	I	X	I	X
10	O	C	O	C
J	P	V	P	V
Q	A	B	A	B
K	S	N	S	N
A	D	M	D	M

Works of non-fiction are arranged by the Dewey Decimal system which breaks the stacks down into ten classes, then ten divisions, then ten ections. The ten classes are as follows:

000 – Computer science, information and general works
100 – Philosophy and psychology
200 – Religion
300 – Social sciences
400 – Language
500 – Pure Science
600 – Technology
700 – Arts and recreation
800 – Literature
900 – History and geography

Ten-sided dice are common among role-playing (D&D) and strategy board gamers. If you remove two cards from your playing card deck you will have 50 remaining which is divisible by 10. Our table for non-fiction selection using a standard deck of playing cards would look like this:

	C	S	D	H
2	1	6	7	0
3	2	5	8	9
4	3	4	9	8
5	4	3	0	7
6	5	2	1	6
7	6	1	2	5
8	7	0	3	4
9	8	9	4	3
10	9	8	5	2
J	0	7	?	?
Q	1	6	6	1
K	2	5	7	0
A	3	4	8	9

Since we have to “remove” two cards from the deck, I just simply designated the Jack of Diamonds and Jack of Hearts as “try again” cards, for reasons. Playing cards and coins are common enough, and everyone can find them. Playing card decks are in the toys/games departments of Wal-Mart and Target. I get mine from the checkout aisle of my local Dollar Tree for $1.25. (They used to be $1.00.)

But, most of all she was thinkin' 'bout the Jack of Hearts.
- Bob Dylan

Here’s how this works. Go to your local library and check out a few random books to read. Flip a coin. Heads you go to non-fiction, tails you go to fiction. Shuffle your deck of cards and pick one out at at random. Let’s say you picked the Ace of Spades. If you were in the fiction section you would pick out a book written by an author whose last name begins with the letter “M.” Herman Melville’s *Moby-Dick* would be a good choice if you have not already read it. If you were in the non-fiction section you would proceed over to division 400, which is the Dewey Decimal class for **Language.** In all seriousness, I’d go over one more to division 500. That is the Dewey Decimal

class for **Science**, and you are more likely to find something interesting in that section. You decide that section 500 is more your style. You pull two more cards: the Ace of Clubs (3) and the Jack of Spades (7). Dewey decimal number 537 is for **Electricity and Electronics**. Broken down into its elements 500 is Science, and 530 would be Physics. You will also find electronics books in section 621: Technology, Engineering, Applied Physics.

If the thought of randomly checking out books from the library is too radical for you at the moment, then go find an interesting book in one of these sections:

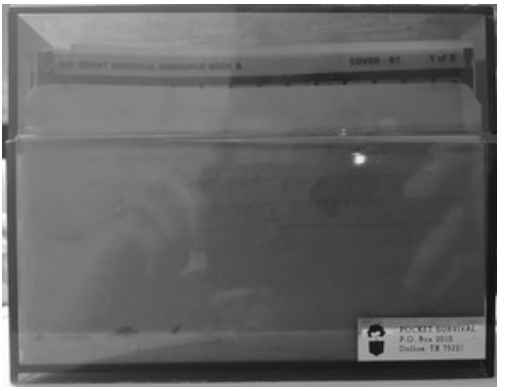
- 000 to 099 - Computer science
- 130 – Parapsychology
- 350 - Public administration and military science
- 500 to 599 - Science
- 600 to 699 - Technology
- 700 to 799 – Arts and Recreation

If you cannot find at least three books in the library to borrow from these sections, something is wrong with you. Take some DMAE and call me in the morning.

If you live in Connecticut, you happen to be fortunate when it comes to having a decent used bookstore within driving distance. If you want to build up your library at a reasonable price, I recommend you visit The Book Barn in Niantic. Their military science/history and technical sections are absolutely incredible. This is the place where Wildflower bought the bulk of his library before discovering the Internet and downloading gigabytes of potentially useful PDF files that later became **The Doomsday Disk** collection. The Book Barn has managed to survive the decades. You should go visit The Book Barn because it's the best place for outliers like us who like having stuff in hardcopy form. If any reader has information about good used bookstores, electronic surplus stores, army/navy stores, or anyplace similar in their area, please send an email to <ticom.new.england@gmail.com> so we can compile a list for everyone's benefit.

On my keyring is a USB stick drive that has around 2100 PDFs covering a range of topics from A to Z. The entire collection takes up about 5 Gigabytes of space, and I still have a little more than 10 Gigabytes free. Imagine what size library you could fit on a 1 or 2 Terrabyte drive. Physical books are nice, however, and there will be some texts you want in hardcopy so

you can read them at any time without a device. Most department stores sell a 2'x3' three-shelf bookcase for $20-$25 depending on where you go, and if there's a sale. This gives you six feet of shelf space for books.

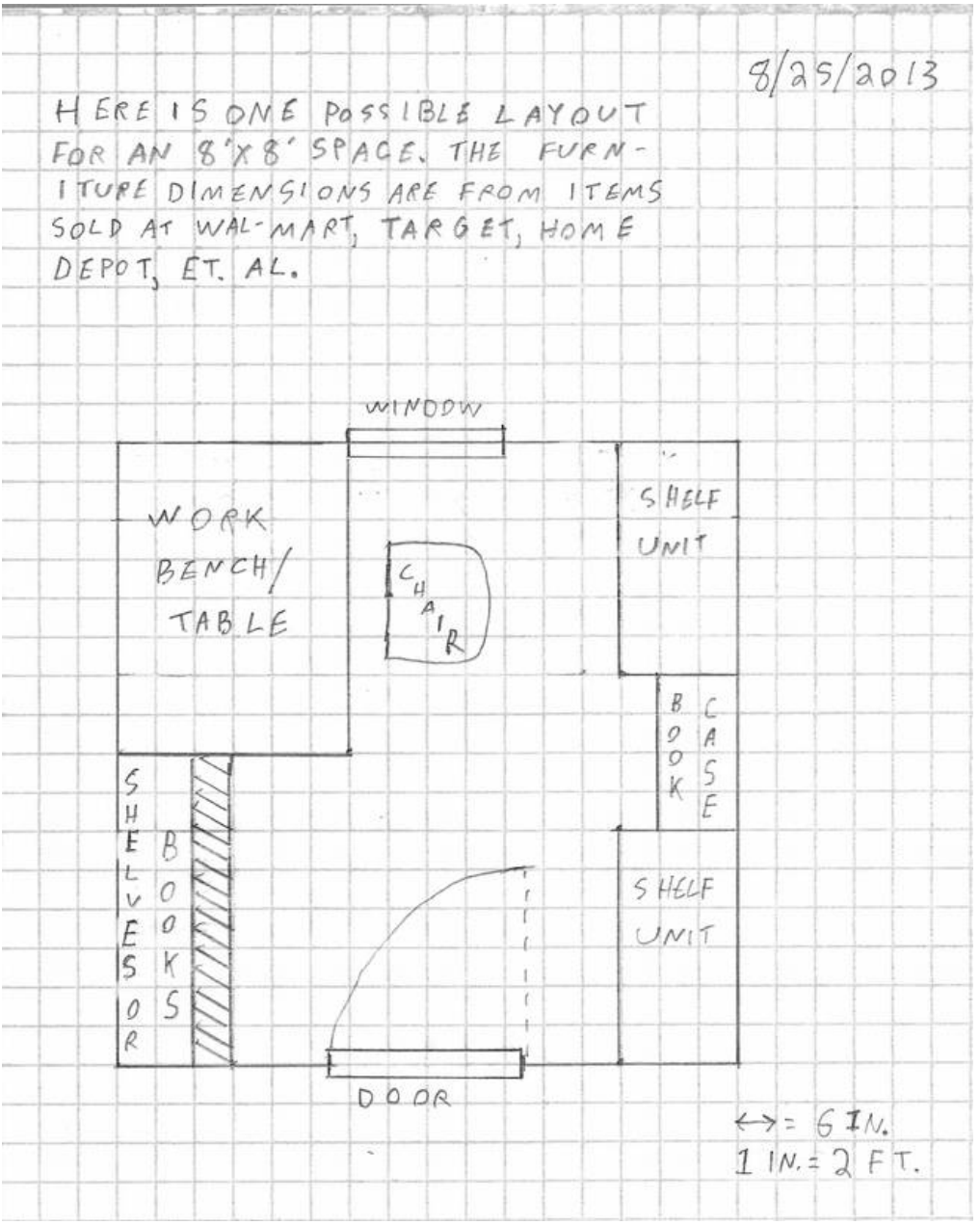


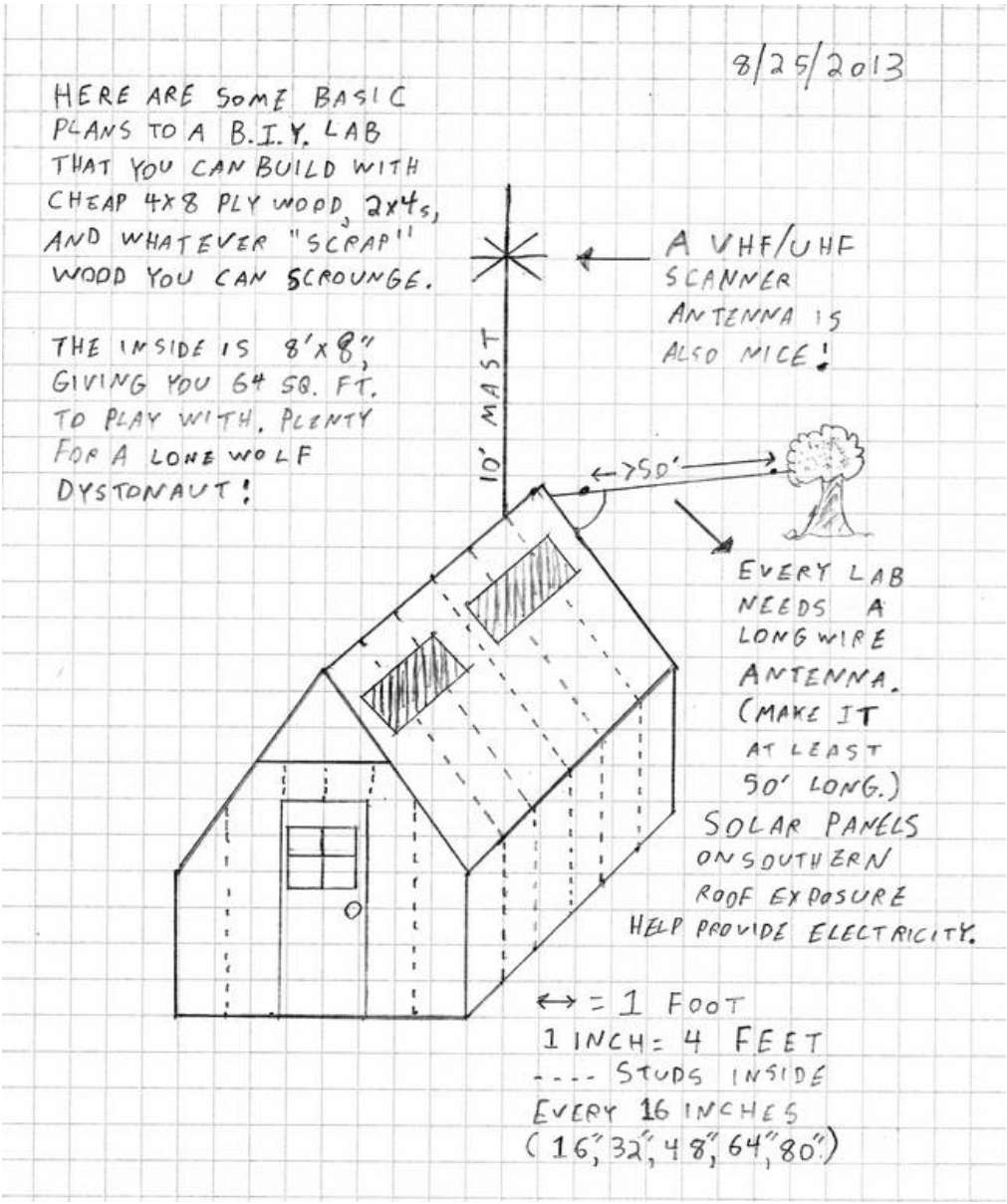
Keep your eyes open at tag sales, flea markets, gun shows, and similar places for plastic index card boxes full of microfiche that are labeled with a sticker that says "Pocket Survival, PO Box 2010, Dallas, TX 75221." During the 1980s this company advertised a comprehensive survival library on microfiche with a small handheld reader in various survivalist and gun magazines. The microfiche in those boxes contain a useful variety of self-reliance and preparedness books and military manuals (Figure 2-1). As the original buyers of this collection age out, I would expect to see them become available at various second-hand venues. A useful book collection on microfiche, along with a handheld reader, is probably the best way to have a comprehensive library that takes up a minimum of space, and can be accessed at any time. Sadly, Pocket Survival is no longer in business, but I leave this as a something of a Holy Grail for those of you who want the ultimate outlier's library.

Realistically speaking, the bulk of your library is going to be PDF files on some form of device, unless you get lucky and find a copy of the Pocket Survival microfiche collection. This is an adequate solution for now, but I can tell you from first hand experience that most devices will die after 10 yesrs, losing the data they hold in the process. You will want a few hardcopy versions of books you consider "must haves." I think filling one of those small bookshelf units would be a good start, and not take up too much space.

Here is the layout of a 64 square foot (8 ft. by 8 ft.) workspace taken from one of my notebooks back when I was planning on building an outbuilding for my workshop. Plywood comes in 8 foot by 4 foot sheets, so the floor would have used two sheets. The furniture dimensions were all from items that you could buy from Wal-Mart, Target, or Home Depot. It was nothing fancy, expensive, or hard to find. It features a decent-sized 4 foot by 3 foot work bench, and enough space for a beginner to keep books and parts. Shelf units can easily be swapped for bookshelves if you need more space for your library. This floor plan can also be easily applied to a spare room,

finished corner of a basement, or used to create a cubicle in a larger room. It shows the essentials of a proper work space. It has a place to sit down and work that has enough elbow room that you are not cramped, and it has enough space to properly keep your reference library, equipment, and parts.





One of my early inspirations for getting into technology, Forrest M Mims, III (http://www.forrestmims.org/) started his technical writing career in a 10x8 metal storage shed. Home Depot sells one for $370. There are also other, possibly cheaper, options. The floor plan for this simple work shed was designed around some of the least expensive building materials you could get at Home Depot: 2x4 boards and 4x8 sheets of plywood. Amateur builders and

tinkerers have been building simple outbuildings like this sans blueprints for decades. It is simply a square with a roof. If you build it so the roof ridge goes east-west, you can add a few solar panels to the southern side of the roof and have some off-grid electrical power for the building.

I designed those plans to use the least expensive lumber you could buy from Home Depot, but you could do it better and cheaper depending on your scrounging and dumpster diving resources. Watch the Youtube video called “Building A Cabin From Pallet Wood: Cheap Off-Grid Homestead” by TA Outdoors - https://youtu.be/1HA4zY8xCyY. In the video a couple of gentlemen used nothing but a few hand tools to make a small off-grid cabin out of salvaged pallet wood. They used nothing special, just hand saws, hammers, a square, tape measure, and a ratchet wrench. You could do the same too out of whatever obtainium you come across in your explorations, and the same basic set of tools.

What is obtainium? Obtainium is our currency and lifeblood. It is whatever material you, in your wanderings, can manage to acquire for cheap or preferably free in order to work on projects or trade for other obtainium. Driving through an industrial park and see a bunch of pallets with a “free” sign taped to them? Obtainium. See an old PC or other consumer electronics sitting on the curb during trash day? Obtainium. Day job throws out obsolete components and hardware? Obtainium. Find an old-skool surplus store? Lots of obtainium. Weekend tag sales? Probably find some obtainium there as well. The type of obtainium you come across should have an influence on what projects and experiments you partake in. Working with what you can inexpensively find and have available locally will help stretch a limited hobby budget, and is a hallmark of a competent outlier. Anyone can mail order off the Internet, but only a true gomi no sensei can do things with whatever local obtainium they find.

Gomi no sensei. Master of junk. A lot of us, often not having two nickels to rub together for research expenses, went this route. Work with whatever you can beg, borrow, scrounge and do amazing shit with it. Rescue a few old x86 machines out of a dumpster, and make a Beowulf cluster out of it. Find an old VT100 terminal and modem on a back shelf in a dusty storeroom that’s been there so long it's forgotten and won't be missed. Offer on a slow day to clean out the old junk, and walk past your car on the way to the dumpster, or find that Joe went and threw everything out in that room yesterday, and go dumpster diving. Find a piece of old computing iron at a

yard sale for $10, in the original box with manuals. Snag curbside electronics the night before trash day, and gut the useful parts out of them. It's all good.

The best gomi no sensei I ever had the privilege to meet and learn from was my late friend Dave Wildflower. He ran a Commodore VIC-20 and Timex Sinclair 1000 as his computing iron, was a Master scrounger, and was one of the best outliers I have ever known. Dave's lab took up about 250 square feet in his basement. Most of one wall was a workbench he made out of salvaged 2x4s and 4x4s. His go-to tools were hanging up, and the less-used ones stayed in a big old 1960s vintage multi-drawer tool chest. Most of his hand tools dated from the 1940s to 1960s, and I credit him with my fondness for the older tools. His “loaners” were a tool box full of inexpensive hand tools of Chinese manufacture, since it was a statistical certainty that they would get lost or broken. An old multi-band radio (usually turned to the local AM talk station) and TV (usually on Discovery Channel) brought in information from the outside world. A World War II vintage Atlas drill press took up a corner. Another corner had a bunch of fish tanks full of guppies and aquatic plants. That was one of his many hobbies. He found the tanks on curbside during trash day. He made his own aerator filters out of dollar store plastic containers and toilet paper rolls. Worked perfect. The water was pet store or Chinese restaurant aquarium-grade clear. Ninety percent of what he worked with either came out of a dollar store, or was either surplus, scrap, salvage, or the previous owners' “junk.” I have to to admit, outside of my own lab, Dave's lab was one of the most comfortable places to hang out and work in. It was a real-life example of William Gibson's Dog Solitude.

Dog Solitude. Dig deep enough and you'll find anything there, the novel says. Any former farm or industrial land, even long-since subdivided, has tons of stuff just waiting for you to find, salvage, and re-purpose. If you're lucky, you might even find a (mostly) still-standing structure that you can repair and rebuild with little effort. Trust me, it's easier than erecting one from scratch. For those of you who are more into urban environs, junkyards are good too. The older, the better. One of the goals of a gomi no sensei outlier is to have their own Dog Solitude that is big enough that they don’t have to wait until morning to go out and buy a part when doing their midnight hacking. Instead, they go into their obtainium stock and get it, even if it’s gotta be desoldered out of an old TV chassis.

Like most other things, there are some important rules about obtainium. The first rule of obtainium is that when the opportunity presents itself to acquire some, you grab it regardless of what it is. This especially

applies to free obtainium, because the flow generally stops from a source when you stop accepting it. You can always move it along later if you don't need it and get either some cash or some other obtainium you need in trade. The second rule of obtainium is to not become a hoarder. It is way too easy to become one if you have limited space for obtainium. Only keep what you might realistically use in six months or a year. If you don't think you're going to use it by then, get rid of it. Pass it along to someone else who might need it. Similarly, if you don't use it after six months or a year, get rid of it. There will always be more coming later.

Even if you don’t have a lot of space where you are, you still should be be able to set something up. A 4’ x 2’ folding table placed in an out of the way corner is enough space for electronics and other small craft stuff. You can see just what you can do and fit on a 4’ x 2’ folding table. Here is Dave Wildflower’s workbench which he used when visiting me. He built that crystal radio set (top of picture) on this workbench. There is quite a bit of scrounge-tek in this picture. The shelf unit was made from a couple of milk crates and a piece of scrap plywood. Repurposed cat litter jugs and food jars were used for storage. The police scanner and AM/FM radio were bought at Goodwill. The plastic boxes were from a Dollar store, as were many of the tools he used at this bench. Dave even made his own clip leads out of clothespins, aluminum foil, and zip-cord taken from broken consumer appliances.

Now somewhere along your daily commute are one or more potentially interesting sources of supply. All you really need is one, but it's a bonus if there are more. It might be a Goodwill, a junk shop, or whatever. Hopefully its hours of operation coincide with one of the the two times you drive past it. Now pick a day, any day. Generate a random number between one and five if you have to, or just pick the day after you get paid. Visit it once a pay period, and see what you can find there. You don't have to buy anything if you don't find anything interesting. Eventually, something interesting will find its way to you. When it does, make sure you have the funds allocated to grab it, because if you leave it there I guarantee you it will not be there the next time you visit. You are not the only player in this game, and there are plenty of hackers out there who would gladly spend $5.00 for that old Linksys WRT54GS so they can load it up with DD-WRT (https://dd-wrt.com/).

When you go into the larger aspects of scrounge-tek, it will behoove you to buy a used beater van or pickup truck so you have the means to haul any obtainium you find. That in itself opens up all sorts of hobby possibilities. You may want to learn basic auto mechanics so you can keep it in running shape without having to spend a lot of money at a repair shop. You may also decide to convert the engine over to alcohol fuel for older gas carburetor engines, or biodiesel/veggie oil for diesel engines. You may want to set up a small alcohol still or biodiesel setup to make your own fuel for it. Vehicles capable of hauling things like furniture are often in demand by people who don't have their own, and a little extra side money can be made moving things for them. Excess obtainium, especially copper and aluminum scrap, can be hauled off and sold to a metal recycler in large enough quantities to help fund your endeavors. If one of your hobbies reaches a level where it can become a part-time trade, your truck or van now becomes a mobile workshop. Finally, if things get bad to the point where you lose your residence, you won't have to be homeless. You can turn your truck or van into a small camper and go live down by the river. Even if it doesn't get that bad, you may decide to embrace a nomadic lifestyle for a while until you figure some things out, and it's easier to do that when your home is on wheels.

Private Sector SIGINT

Not too long ago I used to post up monitoring exercises (MONEXes) to help beginners get up to speed with their equipment and learn something about their RF environment. I've decided to start doing that again as communications monitoring and hobbyist SIGINT is an important skill. This exercise is intended for a beginner, but more experienced monitors are welcome to try it. For this exercise you need a receiver capable of monitoring a frequency or trunked system talkgroup of interest. It doesn't matter if you have an RTL-SDR, a BC-760XLT like the one shown above, some surplus Watkins Johnson rig, or the latest model Uniden or Whistler scanner.

Now you need to pick a frequency or talkgroup. It's going to be something your receiver is capable of monitoring since this is a come-as-you-are affair. My first suggestions would be your local police or fire dispatch channel, local airport tower/CTAF frequency, or ham simplex frequency. You may already have one in mind, or you may need to do some research. If you need help, please visit the Northeast Signal Intercept Facebook Group (https://www.facebook.com/groups/507560277632268/) or Intercept Radio (http://www.interceptradio.com/) and we will help you. It doesn't matter what the frequency or talkgroup is, as long as it has a fair amount of traffic on it. Program in the frequency or talkgroup you had picked. Leave the receiver on that channel. Don't hit scan. Put your receiver someplace where you can get to it easily, and place a notepad and pen next to it. You don't have to be able to sit down next to it for long periods of time. When you hear traffic on the receiver, jot down a quick note about what you heard along with the date and time. What you are doing is logging the activity on the channel to get a feel for what you might hear on it, as well as determining the activity baseline for the channel in question. Do this for at least a day.

At the end of the exercise, go over your notes to see what your heard over the time frame of this exercise. You now have a good idea what what that channel is used for and what COMINT you might gain from it, whether or not it's worth keeping in a scan bank, and whether or not you might dedicate a

receiver to it. I called this an exercise in patience because the channel you are monitoring will most likely not be a constant source of traffic. Most scanner frequencies are that way. If however, you start scanning a few channels you run a risk of missing traffic if the scanner is stopped on channel X while there is also a transmission on channel N. That's why the more advanced monitors have a few scanners with less channels per scanner than one scanner loaded up with everything. By staying on one channel you won't miss any traffic on it, but it's also a bit of a waste if you are using a $300+ 1000+ channel scanner to monitor a single channel. On the other hand, a $20 analog scanner from the 1980s that you bought at a tag sale is perfect for leaving parked on the local airport CTAF or rural county fire dispatch channel. If the amount of traffic isn't too great, you might include neighboring counties as well. That lets your TRX-1 or other high-tier scanner concentrate on the P25, DMR, and NXDN systems.

What's the purpose of this exercise? Most (novice) monitors program in a large amount of frequencies in their scanner's memory, and just hit scan. That will cause them to miss hearing radio traffic. By keeping a receiver on a single frequency, presumably one that is very important or useful, a monitor will not miss any radio traffic that may occur on the frequency in question. In practice, most LMR frequencies will have an amount of traffic that will allow a monitor to program a small handful of frequencies and scan them with a minimal chance of missing traffic.

Shown to the left is my transportable "Fifty Mile Antenna" I used for this exercise. It consists of a Comtelco dual-band VHF low-high NMO whip element on a military surplus magnet mount attached to a tripod (also military surplus). A short length of coax goes to the receiver. This antenna system came about as a way for me to get decent receive performance on the VHF LMR bands while chilling out in the back yard. It is so named because there are a few jurisdictions that are on VHF that I like to monitor which are located about 40-50 miles away, and this antenna system enables me to do so. There is nothing special about any of the components in the system. They are simply obtainium I had acquired over the years. The whip antenna needs a proper ground plane to act as a counterpoise for proper operation, and the tripod, while not perfect, serves that purpose well enough to achieve the distance needed. An addition of a larger ground plane between the antenna and tripod would further increase the performance of this antenna system.

Getting On The Air

Getting started is cheap and easy. Go to Wal-Mart or Target and buy a pair of FRS radios. Now you and a friend can communicate over short distances (<2 miles or so). If your friend also has two, then you both have spares. Pick a channel and privacy code. If you find someone on the same channel and privacy code, move. Use the low power setting (500 mW) whenever possible. The better FRS radios have a channel scan which is useful to see who else is using the band in the area, and may also have NOAA All-Hazards Radio service reception which is useful when you are outside and want to know about any weather alerts.

The next step is a little harder. If you don't have a nearby CB shop or truck stop you will have to buy online. If I didn't have a local source I'd just go visit Walcott Radio's website and order from there. Put a CB radio in your car with a decent antenna. By decent I mean either a Wilson or K40 that's at least 3 or 4 feet long. If your commute distance between work and home is within CB communications range (<~25 miles), install a CB base station at your residence with a decent antenna. The Solarcon A99 is probably the most popular. Another brand I have heard good comments about is Sirio. When it comes to particular CB models, last time I checked President and Galaxy were the popular brands. Cobra was also fairly well regarded. I just look for used models cheap at radio swap meets (hamfests), tag sales, and flea markets, and don't pay a lot for them.

If you have a base station installed at home and want to communicate with it while commuting, pick a channel that has little to no local activity on it, and park yourself there. You should be able to achieve a communications range of 15-20 miles with a properly-installed setup. Usually channels 36-40 are frequented by sideband operators trying to work DX. Channel 9 is still the emergency channel as per FCC regulations, but I don't think many public safety agencies pay attention to it these days. I remember that channel 19 was always the highway trucker channel. In some places 19 is for East/West highways, and 17 is for North/South highways. Local and regional roads often use channels 10 and 21. If you don't have a base station to communicate with, keep your mobile CB on whatever road channel is used in your area. When in doubt, scan the channels or just use 19.

At this stage if you are an individual with no real desire to expand your communications network you are all set. You now have transmit and receive capability on the two most popular licensed by rule radio communications

services. You can use them for personal or business communications. You also have interoperability with anyone who is also equipped.

If I were given a choice in the matter, and I wanted some extra COMSEC, I'd operate on a service that allows for encryption, and then use it. When used with even low-level encryption, this simple choice prevents your communications from being intercepted by non-government types. By low-level encryption I don't mean the simple voice inversion used in some VHF Marine Band radios, older FRS radios, and many models of Chinese VHF/UHF HT's. That voice scrambling is way too common, and there are too many radios out there that have it for it to be effective. If, however, it was all I had and it was legal on the service I was using, I'd still use it because it would be better than nothing. Encryption is illegal on the ham bands unless you're sending commands to a satellite. Encryption is also illegal on CB and GMRS. Encryption is not specifically mentioned on FRS and MURS and can assumed for now to be legal. Encryption is legal with Part 15 devices and on the LMR bands.

Most of you who want secure communications over the area of a city or county among your group, and who don't want to bother with technical stuff should simply set up a business of some sort and apply for a Land Mobile Radio license under the business name. You can then set up a VHF or UHF DMR or NXDN repeater with encryption on your own frequency at the highest elevation you can afford. You can say what you want (within existing laws et al), and no one is going to know or care about what you're doing. You'll just be another anonymous business among thousands of others in your area, especially if your name is something generic and mundane like "Bristol Maintenance and Landscaping." Encryption is so commonplace with land mobile users these days that it hardly elicits comment among scanner hobbyists. I would have the LMR company program in a simplex channel on your repeater's output frequency for short-range use when in the field. If your group wants more privacy in their radio network, and is not very electronic savvy, then get a Part 90 LMR Business license, and run encryption. Install a repeater on the highest location you have access to.

If I needed a communications range of no more than a couple miles, wanted some privacy, and didn't want to bother with an FCC license, I'd simply buy a bunch of Motorola DTRs and use them. These are Part 15 radios running in the 902-928 MHz. band and have a consistent two mile range. The are frequency hopping spread spectrum using old-school Motorola iDEN voice and offer excellent security against casual interception. If your group

wants more privacy in their portable radio network, and does not care about interoperability, then upgrade your portables from FRS to Motorola DTR.

MURS allows for encryption, is licensed by rule, and has interoperability because there are only five channels and the equipment is common. That too would be a good upgrade from FRS if you want a balance between security and open communications with other parties.

Amateur Radio is a fun useful hobby that is well-suited for emergency communications. *Amateur Radio is not suited for private or secure communications.* Amateur Radio is also a proving and training ground where you can get exposure and experience with technical aspects of radio communications you can apply elsewhere. The purpose of Amateur Radio is defined in Part 97 of FCC Regulations, and says:

> *§ 97.1 Basis and purpose.*
> *The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:*
> *(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.*
> *(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.*
> *(c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.*
> *(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.*
> *(e) Continuation and extension of the amateur's unique ability to enhance international goodwill.*
> *§ 97.3 Definitions.*
> *(a) The definitions of terms used in part 97 are:*
> *(4) Amateur service. A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.*

That’s what ham radio is all about, and you should be on board with what you read in § 97.1 and § 97.3 if you decide to take that route.

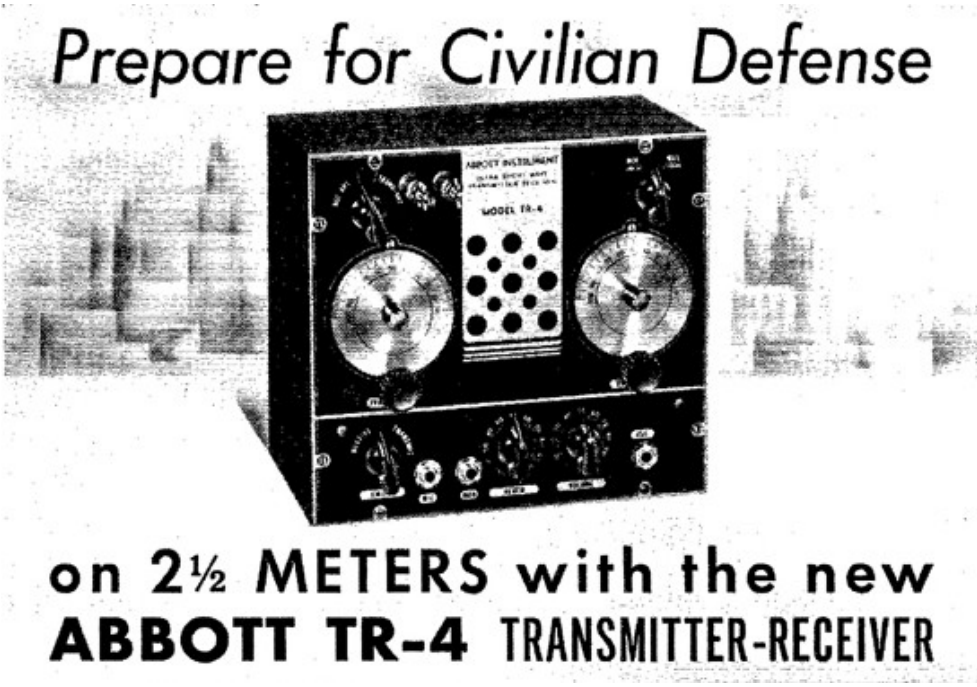
If I were on the ham bands and wanted a modicum of privacy I would avoid the 2 Meter and 70 Centimeter bands. Those are the two most popular. All police scanners cover them, and every ham has at least one HT with both bands. My VHF and UHF bands of choice would be 6 Meters (50-54 MHz.), 1 3/4 Meters (222-225 MHz.), 33 Centimeters (902-928 MHz.), and TK 1.2 GHz. I would run horizontal polarization in order to induce the nominal 20 dB cross-polarization signal loss in all the potential intercept stations running vertically-polarized antennas. I would run directional antennas to limit my signal. I would also run the minimum power needed to establish communications for the same reason. Finally I would avoid using FM since that's what all the common HTs and scanners are capable of receiving. I'd instead run sideband or digital voice. If I was running digital voice I'd try to avoid DMR and D*STAR because they are the most popular digital voice modes. I would go with something a little more obscure. An Amateur Radio license is a license to experiment. As long as you're not running encryption or deliberately trying to obscure your communications you're good. If you and your ham buddies happen to be the only ones in the county with Alinco radios running ITU-TV.32 GMSK mode, so be it. Now if you want to get involved with EmComm (Emergency Communications) or have any type of interoperability with local hams, you should have FM and DMR capability on the 2 Meter and 70 Centimeter bands because that is where you will find the lion's share of RACES, ARES, and Skywarn activity. Actually, you should have transmit capability on these bands simply because they are the go-to bands used for local communications everywhere.

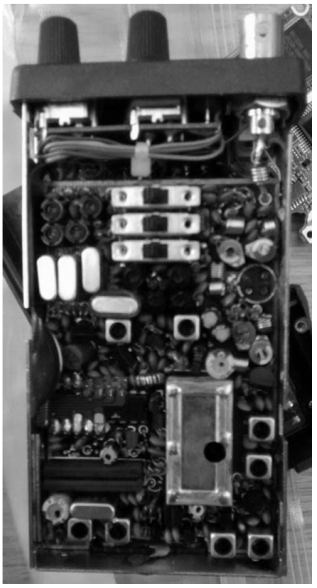
Invariably I get asked "What do you run?" I don't have a group I need to communicate with, just a spouse who also has a ham license. Mundane short-range communications around the property are handled by cheap FRS radios on one of the low-power channels. If one gets wrecked it's no big loss as they are only $40 a pair. We discovered that the radios were good out to ¾ of a mile. One of the actual radios is shown to the left. As I recall they were on clearance at Wal-Mart which is why I chose them. Seriously, it's an FRS radio and they all work pretty much the same.

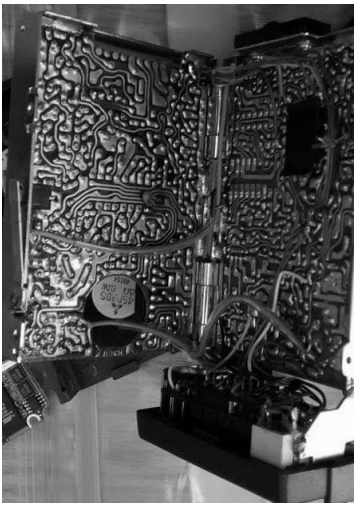
The other service I use is Amateur Radio. Specifically I use HF, 6 Meters, and 2 Meters. FM, CW and SSB are the primary operating modes on VHF. CW and SSB are used on HF. I don't mess with soundcard digital modes as they add an extra level of complexity to a communications system that I don't need. Learn CW, get proficient to 10 WPM, and learn how to use

brevity codes (Google “ACP 131”). You’ll be all set. The digital mode decoder is between your ears, and is usable with any radio. Brevity codes are legal, and a few of them (QTH, QRZ, QSL, QRM) are already used on the ham bands. Now you have the complete list of them.

My radios of choice are World War 2 to Cold-War era military radios, older marine & commercial HF radios, and tube gear (boatanchors). I prefer older gear that is simple and easy to fix. For more modern gear I go with Icom, SGC, and Yaesu. I will grab any 1980s or 1990s vintage Icom VHF HT that’s reasonably priced. I check to see if the HT will run on 12V DC or has a AA battery pack available for it. Shown here is an Icom TK (2 meters) and US Military PRT-4 (6 meters).







The Icom IC-2AT was probably the best HT ever made. It was uncomplicated and simple. You just set the thumb-wheel switches for the frequency and you were good to go. As you can see from the internals, they use old-school discrete components on a conventional thru-hole PCB. **You should be able to fix this radio.** A service manual is available online. The only problem with the IC-2AT is that most if not all repeaters require a PL tone for access these days, and the IC-2AT does not have PL tone capability unless someone had previously installed an aftermarket PL tone board into the radio. Interestingly enough in the Northeast the IC-2AT remained popular into the late 1980s and early 1990s, and you will find often this model on some SK's estate hamfest table with a PL tone board installed. If you do you should grab it.

Subsequent Icom HTs such as the Icom IC-02AT introduced in 1984 and others since then have PL tone capability. The IC-02AT was also one of the first radios that had a "MARS/CAP" extended frequency coverage modification, although it was a little more complicated than the diode/jumper clip mod of more recent radios. You would be far better off buying an old Icom HT at a hamfest and getting a new battery pack for it than you would buying a Baofeng. If you come across an Icom IC-2SRA (or any IC-nSRA model) remember that it is also a nice 25-905 MHz. wideband receiver in addition to a 2 Meter FM transceiver (or whatever band).

A few watts on 2 meter simplex is only good for a few miles, unless you have a repeater nearby to do some heavy lifting for you to help you reach out. If you want to reach out on your own without any help under the same power limitations and minimalist arrangement as your HT, you'll need to operate on HF, specifically QRP CW.

For those of you looking for a holy grail, keep your eyes open for a late 1930's vintage Utah Junior HF CW transmitter. It was sold as a kit for Novice ham radio operators. It has only two tubes: a rectifier and a 6L6. It's crystal controlled and will transmit on all bands from 160 to 10 Meters. The RF output is balanced, so you can home brew the entire antenna system from whatever wire you can find. The output stage is tunable, so no antenna tuner is needed. You simply match the transmitter's final stage to the antenna. Typically hams of this era would use a dipole or end-fed zepp antenna cut for the lowest frequency of operation, usually 80m or 160m. With a balanced feedline transmitter output you won't need a tuner.


utah JUNIOR TRANSMITTER!

THE PERFECT BEGINNER'S RIG

CRYSTAL CONTROLLED

25 WATT CW

OPERATES ON ALL AMATEUR BANDS from 10 to 160 METERS

$15.95 LESS TUBES, METERS AND CRYSTALS

THE beginner in amateur radio will find this an easy rig to build and to operate, and a perfect transmitter with which to gain operating experience.

It is unquestionably a most economical transmitter for any amateur to build, enabling him to "get on the air" with the least possible expenditure for an efficient, versatile rig.

Although complete from power supply to antenna tuning circuit, parts have been held to a minimum and tuning procedure has been greatly simplified.

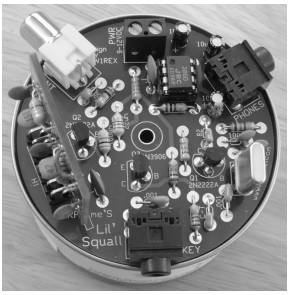
All the amateur bands from 10 to 160 meters can be worked, with suitable crystals, simply by changing a single coil for each band.

As in all Utah Transmitter Kits, quality has been maintained in all the parts — it's a rig any beginner will be proud to own and operate. See your UTAH Jobber or write direct for complete description and schematic diagram on this and other models.

UTAH RADIO PRODUCTS CO.
CABLE: UTARADIO, CHICAGO
"DEPENDABLE SINCE 1922"

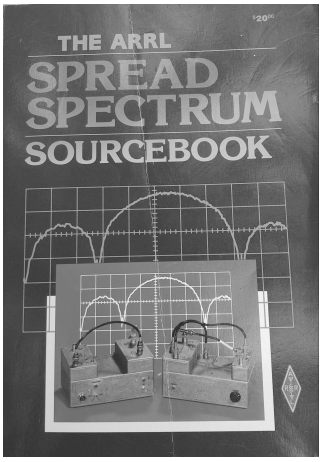
Say You Saw It in QST — It Identifies You and Helps QST 77

Utah Radio Products advertised this transmitter as "the perfect beginner's rig." In today's dollars it would cost around $320. Back then a Novice class ham radio operator was expected, with the help of an elmer (usually the ham who gave them the Novice test), to build a rig to get on the air. Utah made it easier by putting most of the parts together in kit form. Compare that to the current average entry-level ticket holder who can barely program their Baofeng HT.



A modern version of the Novice CW HF rig kit is still being made in Maine by W1REX at QRPme. The Lil' Squall costs $40 and will operate on 80, 40, 30, 20, and 10 Meters. It's an up-to-date version of the famous Tuna Tin QRP radios, so named because the PCB was designed to fit on top of a tuna fish can. The Lil' Squall is all thru-hole solid state discrete components on a PCB board. The parts are all common and easily found. You could get one of the Chinese 40 Meter QRP kits off Ebay for less, but the quality control on them is spotty (just like Baofengs), and many are crystaled up for a frequency in the Extra class sub-band on 40 Meters. Since you're probably a Technician or maybe a General class operator, that won't do.

Icom has a nice band chart you can download so you know what frequency ranges you can operate in. The ARRL has one too. The 40 Meter band is probably as good a place to start as any. You and your ham radio buddy should each have a CW transceiver with a 40 Meter dipole about 20-30 feet up. Find a nice quiet frequency on the 40 Meter Novice/Tech sub-band and send CW back and forth to each other. If it's just you, a decent shortwave receiver with CW capability and a 40-60 foot hunk of wire strung out to a tree will let you hear the ARRL CW practice broadcasts.



Perhaps the ultimate mode to run these days would be spread spectrum. Some hams have experimented with running DTRs under Part 90, HSMM, and chirp modules as of late. The FCC regs on spread spectrum on the ham bands have relaxed since the ARRL published their excellent (and now out of print) *Spread Spectrum Sourcebook* in the 1990s. Fortunately, a PDF version is available for download off the Internet if you do a little searching for it, and hardcopy versions are also available on the used market for not a lot of money.Spread spectrum is allowed on 222 MHz. and up, and you can experiment with different SS modes as long as you have no intent to obscure the meaning of your communications. Just as if you and your ham buddies were the only ones in the county running ITU-TV.32 GMSK mode, the same rule applies if you modified a bunch of Icom IC-3ATs to do FHSS.

The Receiver

by Tom Filecco <tf@sdf.org>

3Z3438
KEY J-38
1 EACH 3272-P-52-02
MCELROY MFG. CORP.
LITTLETON, MASS.
DATE PACKED 9 / 52
METHOD O

The little brown box taunted him from its perch atop the old Hallicrafters at the antique store. He heard stories about them, the aether surfers, communicators from the outer regions who used archaic electromagnetic methods to reach one another outside normal channels. And sitting there right in front of him was a piece of their kit. He wondered what strange signals he might be able to receive from the Outlands, and if he could go all the way and actually participate with them. He pulled the two items off the shelf, brought them to the counter, asked if there was anything else like it in the store. The owner gave him a knowing look, went to a shelf, pulled a thick digest-sized tome from its perch, and handed it to him. *ARRL Handbook* it said on the cover. He took all three items. The Hallicrafters barely fit on his bike rack. He wrapped it carefully in a camouflage army poncho. The J-38 Key and *ARRL Handbook* went into his knapsack, another military relic, canvas, circa World War II. He mounted his old Schwin and went home.

His parents were Neo-Luddites, a reactionary movement started in the early 21st Century against the constant digitization and connectivity of humanity in “developed” countries. Some obscure niche writer created it. Their battle cry, if it could be called that, was one simple word: “analog.” They sought out implements and devices that were not equipped with microprocessors, and often preferred the mechanical to the electric. They had no Internet connection, instead preferring to browse used bookstores. Bookshelves lined the walls of their home. An old tube-style RCA TV graced the living room, thin flat black cable snaking out the back and up to the roof where an antenna was pointed at the local PBS station. His family's only concession to the digital world was a converter box that they had to buy when

analog TV broadcasts were discontinued. If there wasn't a PBS station within reception range, the old TV would have likely became parts in his father's workshop. His father's library contained books on microprocessor design from the late 20th Century. They were artifacts from a previous career before finding religion. The boy thinks his new receiver will be a welcome addition to the home.

He gets off his bike, unwraps the poncho from around the radio, and walks in. His father is inside reading the newspaper. He notices the old Hallicrafters, smiles, and starts speaking.

“Your granddad was a ham radio operator. I got into computers instead, went to college, and worked for IBM. Let's haul that boatanchor inside your room, and get it set up. I think we can find the stuff for an antenna in the shed.”

Despite its age, the address in the book remained unchanged. Two or three weeks later, a thick manila envelope arrived from the Newington, Connecticut. He studied his old *ARRL Handbook*, and called the contact of his local ham radio club. They would be having a test in a month and a half. He hoped he would have enough time to study. Being home-schooled, his parents added electronics to his curriculum. Knowing full well that it also encompassed such topics as physics and mathematics. The old Hallicrafters was used to enhance his education in social studies and geography.

He arrived that Saturday morning ten minutes before the appointed time. The old gentleman in the safety orange jacket looked at his birth certificate and took his test fee. He sat down at the table among about a half-dozen other geeks, and was given his test. He looks at the test and confusion sets in as only a couple of the questions looked like they were from his book. He flagged the gentleman in the orange jacket over. “Sir,” he started, “None of these questions look like they're from my book.” He received a look of disbelief. “The questions are all from the test pool.” orange jacket replied. “What book were you studying?” The boy reaches into his backpack and pulls out the old *ARRL Handbook*. “You studied out of this?” The boy nods in the affirmative. The old-timer looks pensive for a moment. “Give me a minute.” After consulting with his fellow examiners, the old-timer returns with a nostalgic look on his face as he addresses the boy.

“That book is great for teaching you real ham radio, and building radios from scratch. It's also pretty much useless for helping you pass a ham test. Since my friends and I got our tickets from back when you studied that book to take the test, we're gonna make an exception for this time. We're gonna ask you a few questions, and if we like the answers, we're gonna make like you

passed all three tests. Just do us a favor, don't tell anyone, and learn all the up to date rules so you don't get in trouble."

An hour later, the boy walked out of the building with a certificate saying he passed all three Amateur Radio tests, and a more recent copy of the *ARRL Handbook*. The examiners would fondly recall this particular testing session for the rest of their lives.

There were probably some decided advantages to working with a text that dated back to the LBJ administration. Equipment was definitely more homebrew and DIY back then. Hobbyists were expected to build their own gear and maybe even some test equipment. With a well-written and authoritative text as a guide, there were no worries of self-appointed "experts" telling you that you were doing it wrong. Now the boy was ready to go build himself a transmitter. Armed with a shopping list of pieces and parts, the boy walked into the old TV repair shop looking to build his first CW transmitter to go with the Hallicrafters. He thought it was amazing that such a place still existed in the age of planned obsolescence throw-away consumption devices, but there it was. He handed the owner his list. The owner looked at it, knitted his brows, and looked at the boy. "Nobody builds or fixes things any more." the owner said. The boy replied "I do." The owner led him to the back of the shop to a shelf of old tubes and TV parts. "See what you can find here." the owner said. "I'll probably be closed for good in a month of two. You better take anything you think you might need. The cost for your parts is Ten Bucks, cash." The owner gestured towards the back door of the shop. "There are some empty boxes over there if you need any." The boy started searching through the shelves, filling boxes full of radio parts and tubes. He came across a radio in a yellow metal case, marked with a red, white, and blue "CD" logo and a badge bearing name *Gonset*. He asked the owner "How much for the radio?" The owner replied "That'll be another Ten Bucks."

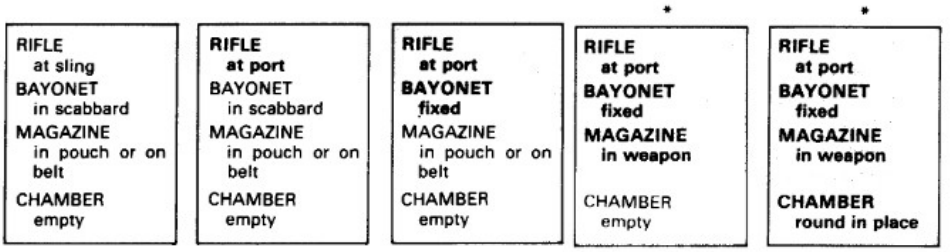
The boy walked out of the old TV shop with enough parts to build at least two shortwave transmitters, and with a radio that he could use for talking on the local nets. He knew some of the old time ham radio operators still used Gooney Boxes to talk among themselves at night. He had so much stuff he couldn't fit it on his bike and needed to call his dad to pick him up. As it turned out, it only took him a year to go through his parts stash, and he quickly gained the status as the youngest ham in the county who home-brewed his station.

Rittenhouse Recommendations

The Rittenhouse trial is over, and the jury found him not guilty. Since everyone who cares about the case has already formed an opinion along the lines of their particular political leanings, and since there are active OSINT operations underway on all three sides, all I'm gonna say on this is that it was just another case of stupid spiraling out of control. I will, however, offer some suggestions as to how to make future events more successful and less painful.

FM 19-15

RIFLE READINESS OPTIONS



* This option is usually reserved for selected marksmen

The rifle and the rifle with bayonet affixed have very limited offensive use in civil disturbances as both can constitute deadly force. The main value of the rifle with bayonet affixed is its psychological impact on a crowd. However, the danger of accidental or intentional injury to demonstrators or other control force members precludes the use of fixed bayonets except against extremely violent crowds. The rifle with a round in the chamber is an option that usually is reserved for the commander of selected marksmen, such as an SRT leader.

The troops fix bayonets only on orders. The order to lock and load rifles can only be given when the criteria for the use of deadly force have been met. When the M16 rifle is used, a lock plate must be installed to prevent automatic fire. The lock plate, a prefabricated insert, fits between the pistol grip and the receiver group. It prevents the selector switch from being inadvertently flipped to the automatic mode. A soldier can install the lock plate in less than a minute using only a screwdriver. Once in place, it ensures that the selector switch stays in the semiautomatic mode.

My research has shown that Kenosha is no different than any other post-industrial Midwestern city turned bedroom community. In that regard it is much the same as many cities here in Connecticut, or elsewhere in the United States. What that means is that all it takes anywhere in this country is a local troublemaker, a town's equivalent of Jacob Blake, to get shot by the police while doing something stupid, or for the town police department's

version of Derek Chauvin to lose control while on the job and arresting the town's equivalent of George Floyd, and all hell might break lose. Past events since Rodney King show the now predictable narrative of what will happen next.

Suggestion number one is that if you insist on going to an event where shots may be fired, even accidentally, in your direction you should be wearing body armor. At this stage in the game I'd recommend something that could stop a 5.56mm NATO round since that's what all those AR-15, excuse me M4, clones are usually firing. Actually, suggestion number one is to stay the fuck at home unless it's absolutely necessary that you have to attend, but that seems to go over people's heads for whatever reason.

Suggestion number two is to have a trusted battle buddy, and **don't leave thier side**. In fact, you need to keep your whole fucking fire team together, your fire team needs to keep its squad together, the squad needs to keep its platoon together, and so on. If you don't understand this concept you have no business being out in the shit. Kyle's real problem started when he wandered off, and the protesters, like the good predators they are, went for the little lamb that was separated from its flock. If a bunch of wolves and sheep understand this, than you should too.

Suggestion number three is to be familiar with the content and training presented in U.S. Army Field Manuals FM 19-15, FM 90-10-1, FM 7-8, and FM 5-31. You can google all those FMs and download the PDFs from various places on the net. For the uninitiated, the manuals are as follows:

- FM 19-15 – Civil Disturbances
- FM 90-10-1 – An Infantryman's Guide To Combat In Built-Up Areas
- FM 7-8 - The Infantry Rifle Platoon and Squad
- FM 5-31 – Booby Traps

The best way to get this sort of training is to become a proper member of the nation's militia and join a National Guard unit. It's only eight years of your life, you get paid for some good technical training, and many state colleges offer you free tuition as a Guard member or veteran. Connecticut is one of them.

All Army National Guard units receive civil disturbance training. In fact, they do it every year during one of their weekend drills. If you are not looking for technical training, and just want to learn how to fight, your best bet is go for Infantry or Military Police. Even if you are in a support MOS however you will have the opportunity to join the state's Quick Reaction Force (QRF) and receive some useful training. The QRF are the National Guard members who get activated for emergencies As NG combat arms and MP units get deployed federally overseas, they instead use support troops for the QRF. Of course that means that not only you might be ordered to attend one of these events, but you'll also get paid for it, and not have to use your own gear.

Before you sign that enlistment document, assuming MEPS lets you get that far, remember that you will have to show up for drills one weekend a month, attend Annual Training for two weeks every year, and face the possibility of being activated and sent somewhere. It's not for everyone, but the author did it for 11 years, so he's not recommending something he didn't do himself.

Those of you who can't join the National Guard for whatever reason might be able to find some instruction among the droves of tactical trainers that ply their trade on the Internet. I don't have any specific recommendations because the only gentleman I'd recommend, Michael Adam of BattleRoad, passed away in 2015. If you've had any experiences with them, good, bad, or other, I'd like to hear from you.

Communications are essential, and all Rittenhouse apparently had on him was a cellphone. COMSEC issues of cellphones aside, jamming or otherwise rendering cellphone service unusable in an area is a trival matter and as things progress should be considered a given in any interesting event. Analog FM Ham/ersatz LMR radios such as the Baofeng are popular, but also

subject to COMSEC issues. The solution is to get a LMR business band license (or permission to operate under one), and run encryption, or run encryption on MURS.

Video played a big role in the Rittenhouse trial. Keep in mind that everyone from the Feds right down to both sides of the incident **will** be running video, and you **will** get on it. That video can either acquit or convict you, depending on what activities are recorded. I recommend that combat camera teams, either hidden on the ground or using drones, are employed to covertly record the event from start to finish. This video coverage should be used for after-action analysis no matter what. Should a legal situation result, the video coverage could be used to aid in an acquittal or conviction, depending on the desired result. Conversely, denying the opposition useful intelligence by employing countermeasures may also be advised. See https://dcdirectactionnews.wordpress.com/physical-security-and-counter-surveillance/how-to-jam-security-cameras-from-reading-your-face/ for more information.

Little has changed when it comes to socially charged criminal trials and civil disturbances over the past 30 years. Juries are a crap shoot, and everyone lies to either get off a jury, or get on it. All Rittenhouse's acquittal proved, much like the initial acquittals of Koon, Briseno, Wind, and Powell, was that 12 people couldn't agree that he was guilty beyond a reasonable

doubt. Whether that's because of evidence or belief is irrelevant. What's relevant is the aftermath. What's also relevant is that one can be 100% in the right and still have a prosecutor go after them because the prosecutor is on the opposite side. Finally, since both sides and the narrative in this long-running feud are well-established, we know what happens in the sequence of events. Proper planning now will prevent poor performance later.

INFORMATION NEEDS FOR PLANNING CIVIL DISTURBANCE OPERATIONS

- Goals of the groups that are likely to cause or are causing civil disturbances.
- Times and locations of disturbances.
- Causes of disturbances.
- Identity of persons, groups, or organizations that have distinctly threatened to cause or are causing disturbances.
- Estimated number of people who will be or are involved in the disturbance.
- Likely places where crowds could assemble.
- Presence and location of leaders and individuals who have threatened to cause a civil disturbance.
- Group structure and types of activities group can carry out.
- Sources, types, and locations of arms, equipment, and supplies available to the group.
- Possible use of sewers, storm drains, and other underground systems by participants.
- Attitude of general populace toward groups causing civil disturbances, toward civil law enforcement authorities, and toward federal intervention.
- Presence of threats to utilities that serve the public.
- Kinds of communications and control methods used by participants and organizers.

A good area study followed up by an analysis of current events should give you an indication as how vulnerable your business or residence location would be to a civil disturbance. You have a choice between strategically relocating beforehand, or continuing to support a population that's going to turn on you the moment it suffers a Chauvin/Floyd event. Better you make the decision now before you have to solicit unorganized militiamen at the eleventh hour and later deny you requested them when they put you on the witness stand. What you ultimately decide to do is up to you, but hopefully this information will help you either make a more informed decision, and clue you in to watch and learn from the mistakes of certain ~~fucktards~~, I mean less enlightened parties.

How To Hack An Election

Most of the "prepping" books I've seen concentrate on what you can do to prepare for the aftermath of some disaster. They fail, often miserably, to discuss what I refer to as the "beforemath." That is the events occurring in the here and now before disaster strikes. What I have hoped to accomplish as of late was introduce you to some hobbyist possibilities with an aim towards self-reliance and preparedness. The overall aim is to give you some enjoyable activities and hopefully even pastimes to do before disaster strikes, that will help you when disaster does strike. If you, for example, happened to get into carpentry or woodworking as a hobby, then you will find yourself well equipped to deal with the effects of a tree landing on your house or your roof getting torn off during a storm. In the meantime, you have fun building neat things out of wood. Going out on the water with a Spoon lure or an Adams fly you made yourself and catching something edible, or growing tomatoes out of a re-purposed cat litter bucket not only imparts a sense of accomplishment, but helps ensure you'll have at least something on the table to eat, and at the very least will help keep the food bills down a bit. All of this is important because disasters are temporary affairs, things get fixed, and life goes on regardless.

While there is quite a bit you as an individual can do in the way of preparedness with your family and property, there is also the bigger picture of your community, state, and country which is the government's responsibility. Unfortunately, the government's priorities have often been with matters other than disaster preparedness and emergency management. While the US General Accounting Office reported recently that Federal disaster response has been getting better, there is still plenty of room for improvement. This all boils down to funding, but if we have to pay taxes we might as well get something useful out of it, and I can think of worse things for the government to spend our tax dollars on.

Funding for various government functions, as well as the point of origin for new laws, is done by legislation. Information on Federal legislation is readily available online. The information includes such data as who sponsored it, who voted for it, and if it was passed into law or not. Most states and lower jurisdictions also have this information online. If not, one of the first things you should work towards is increased government transparency in your locale. As far as I'm concerned, if a piece of legislation helps promote or assist individual or community self-reliance and preparedness it is good. If it does not, then it is either bad or irrelevant depending on whether or not it negatively affects individual or community self-reliance and preparedness. For this

specific purpose, legislators are judged simply on their voting record on legislation in regard to the effect it has on individual or community self-reliance and preparedness. Keep in mind that no politician is perfect (nor should they be considered human beings while in office), if its voting record is more good than bad, then you'll want to try to keep it in office. If not, then you should try to get rid of it.

In this country there are two predominant political parties. They are the Democratic and Republican parties. In any particular state, the majority party will be one or the other, and as a result that party will often control the state because they hold the statistical advantage. It has been my observation that voters affiliated with a particular party will vote among party lines unless their party's candidate disgusts them to the point where they feel that the opposition's candidate is the lesser of two evils. Usually however, they find that because Candidate Smith is representing their party, and by association their party's platform, that Candidate Smith sucks less than Candidate Jones because Candidate Jones is affiliated with the opposition party. What this means is that if you want an elected representative in office that is more aligned with your objectives, your candidate needs to be a member of the area's majority party to avoid a statistical disadvantage they will encounter in the general election. That means you and your like-minded friends need to be members of the majority party as well.

In a general election, the one where according to the Voter Election Project (http://www.electproject.org/home) about half the voting eligible population votes, the candidates for a particular office are from opposing parties. A primary election, on the other hand, has candidates from the same party running against each other for the privilege of running in the general election as a representative of their party. Primaries typically have 20-30% turn out and the winning margins are much narrower. Since it requires less actual votes to win a primary, it may be possible for your group to take advantage of this and get a candidate onto the general election ballot, where the majority of voters in the majority party will vote right down the party line.

This technique all comes down to a numbers game for the most part, and will vary from state to state. You will need enough allied voters to accomplish three tasks. The first is finding someone who is adequately charismatic, educated, and articulate enough to be an elected public official, and willing to take one for the team by forsaking their humanity to pursue running for office. They will need to present a proper public appearance, have a safe and clean background, and be able to hold their own in debates against other candidates and the press. The second task is getting on the party’s

primary ballot. Each state and locale will have different procedures for doing so. Do your research. Finally, we have the third and final task. That is winning the primary. Here is where the numbers are important. Your candidate will need to have as many votes as the leading favorite candidate, plus one more. If your group can successfully accomplish all those tasks, everything is downhill from there. Your candidate will running under the majority party in a general election and have a numerical advantage to win simply because most people vote for the party instead of the person. As long as your candidate does not say or do anything to anger the majority voting base, there is a better than 50% chance they will get elected.

I know of one state where this technique was successfully accomplished. The state was Wyoming, but there are several particular characteristics of the state that may have contributed to the technique's success. The first two are that Wyoming ranks 49 and 50 in population density and population respectively. That means a winning margin would be easier to achieve. The third is that at present voters in Wyoming can change their party affiliation at any time right up to at the polls on an election day. There has been legislation introduced to restrict the ability to change affiliation past a certain time before an election, but so far it has not been successful in getting passed. Of course, if anyone with a whit of common sense were elected by this technique, they would readily veto any legislation that could potentially endanger future successes. Wyoming Democrats started using this technique to gain more of a voice in the management of their state from the more conservative elements of the Wyoming Republican Party by getting a more moderate Republican candidate elected in the primary. Once that was accomplished it was just a matter of the majority voting along party lines, even if were done grudgingly as "the lesser of two evils."

Will this technique work where you live? Maybe, but since people generally pay more attention to the party and the propaganda versus the person and their actual record, it becomes almost a given, based on the numbers alone, that whichever party is the majority is the one that is more likely to win. If members of a particular party care so little about an election that less than a third of them vote in their primary, and members of the opposition are able to get a candidate enough votes to win, then it's all on them. Political party changing at the 11th hour to influence an election is considered unsporting, and in many places one will have to be a member of the party for a while before a primary to vote in it. You have to do your research, and make sure your people have been members of the right party well ahead of time. If enough of you who would normally vote party A go join party B just to vote in B's primary, you may weaken the strength of party A enough for party B to do the same in

your primary. If the more vocal and extreme members of party A notice that their candidate is losing to someone who should in their opinion be a member of party B, they might get a notion that something is up and do the same thing to party B.

The technique I just detailed will work best in a state with a clearly defined majority party. There will however be instances where a voting jurisdiction will not have a well-defined battle line. My state of residence, Connecticut, runs roughly 37% Democratic, 21% Republican, and a whopping 41% unaffiliated. The remaining 1% is split among various minor parties such as Libertarian, Green, et al. While that 41% is not able to participate in a primary, they can certainly make or ruin a candidate's day during a general election to the point where the minority party can win. Therefore any candidate in such a jurisdiction, regardless of political affiliation, needs to avoid angering or otherwise perturbing a quantity of unaffiliated voters in a sufficient amount that would result in the election going to the opposition.

As much as I would like to believe otherwise, the statistics say that nationwide half of you don't vote, and of that percentage anywhere from 30-40% of you who do vote are independent. This is unacceptable. First off you should register to vote because it is one more tool that you can use to enhance your overall self-reliance and preparedness posture by participating in the process that will help elect people who will treat your special interest group more favorably than others by introducing and voting for legislation that supports your ideology and ends. Second, you need to register an affiliation in one of the two major political parties so you can participate in primary elections because they are the event where you have a better chance of getting a candidate into the general election that sucks less than the other one.

My final advice when engaging in political campaigning for your favorite candidate is simple, and that is to follow Wheaton's Law. You are not trying to get your own party to vote for him or her, because their minds are made up, and their vote generally follows party lines. You are not trying to get the other party to vote for him or her, because their minds are made up, and their vote generally follows party lines. You are trying to get a majority piece of that 40% that will make or break the election, and if you act like a dick while campaigning you are telling voters to cast their ballot for the other candidate.

On the surface, the Federal government has promoted individual preparedness with sites such as http://www.ready.gov/, but they don't support it much beyond a web site and some state/local funding for what we used to call emergency management, but now call homeland security. Perhaps it is time for

those into self-reliance and preparedness to become more politically active. Natural and man-made disasters from hurricanes to haz-mat incidents are not going away, and it's only a matter of time before nature or human error strikes again. Individual, family, and community readiness is something so fundamentally useful that both Republicans and Democrats should be, despite their differences, be on board with. Please take a few seconds to read preamble to the US Constitution.

"We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America."

I immediately see three goals in the preamble that apply to self-reliance and preparedness. They are:

- Insure domestic Tranquility.
- Provide for the common defence.
- Promote the general Welfare.

Simply put, it is the government's job on a macro level to hep enable its citizens to prepare for, survive, recover, and I dare say even prosper during and after disasters of any kind. We pay taxes so this is able to happen. While the specifics can be subject to debate, both parties should realize that this is a Constitutional mandate that requires bipartisan support. I would like to see this happen, and maybe if enough people get on board and demand their legislators, regardless of whether they have a "D" or "R" after their name, pay more attention to this issue, we might see some improvement.

It all begins with you. Over the decades I have given you some information and techniques that hopefully you can use to enhance your level of self-reliance and preparedness, and will help you out not only in times in disaster, but also in the present, the important here and now that we all live in. Disasters will come and go, and if you are prepared you will most likely survive them with only minor inconvenience. However, for the time being now is the only thing that's real.

DTMF Communications

If you take a look at a DTMF pad, you will see a 3x4 or 4x4 matrix of buttons. The usual 12 button pad has the numbers 1-0, *, and #. The 16 button bad adds a fourth column that usually has the letters A-D. On both pads the number keys from 2-9 also have three letters on each button, dipslaying the entire alphabet except maybe for the letters Q and Z. Older DTMF pads did not include them. Newer ones include them on the 7 and 9 buttons respectively.

	ABC	DEF	A
1	2	3	
GHI	JKL	MNO	B
4	5	6	
PQRS	TUV	WXYZ	C
7	8	9	
			D
*	0	#	

The DTMF communications system as suggested by the ARRL in their 1980s vintage Handbooks used a single digit to indicate a number, and two digits to indicate a letter. The letter Q was indicated by ** and Z by ##. In their example from the 1986 Handbook, "225 Main St" would have been encoded as: 2256*2*4#607#8#. The issue with this system is that there is no way to distinguish between the letters B, E, H, K, N, R, U, and X from the numbers 20, 30, 40. 50, 60, 70, 80, and 90. One solution would be to use the number "1" as part of a designater to let the receiver of the message know that a numeric string is about to be sent. If we follow the standard of using the fourth row of the pad as a position indicator, we could use "1#" for the start of a numeric string, and "1*" for the end. In that instance 203060 would be the name "Ben" and 1#2030601* would be the number 203060.

The fourth column is interesting. Civilian telephones do not feature it, but most ham HTs with DTMF signalling have it. (Sadly my favorite Icom IC-2AT is one of the exceptions, but not the IC-02AT). It was used for call priority signaling on the old military AUTOVON system, and for system test access by some phone companies. It is not needed for this communications

system, but since you probably have the fourth column on your keypad you could use A-D as meta buttons, designate them for regularly used brevity codes, or use them as part of a selective calling or routing protocol.

I first saw mention of using DTMF for radio communications in the *1982 ARRL Handbook*. When writing this article I referenced the *1986 ARRL Handbook*. This system is publicly documented and uses common equipment used in in one form by the majority of the population. So far what I have described cannot be considered a means of obscuring communications. That means it's legal for the ham bands. It would go well with the brevity codes from *DOD Publication ACP 131* that hams are partially familiar with from using QTH, QRZ, QRP, QRM, QRV et al. If however you want to use this system on a communications system where encryption or obscuring communications is legal, it lends itself to COMSEC pretty well.

Say for example you need to send the message "Pick up Ben." Sending unencrypted that would be:

P I C K U P B E N <- Original message
7* 4# 2# 50 80 7* 20 30 60 <- DTMF sequence

Chances are that if you've generated one-time pads, you've done them in base 10. A DTMF pad is base 12 because because they've added * and #. This is easy enough to fix so you can use your base 10 OTPs. Assign the number 10 to 0, 11 to *, and 12 to #. Now add leading zeroes to any number below 10. Your DTMF sequence now looks like this:

7 * 4 # 2 # 5 0 8 0 7 * 2 0 3 0 6 0
07 11 04 12 02 12 05 10 08 10 07 11 02 10 03 10 06 10

From there you simply add modulo 100 using the number streeam off your OTP.

07 11 04 12 02 12 05 10 08 10 07 11 02 10 03 10 06 10 ← Plaintext
32 91 10 71 07 31 61 95 01 59 11 24 95 55 81 59 66 39 <- OTP
90 02 14 83 09 43 66 05 09 69 18 35 97 65 84 66 72 49 <- Ciphertext

To decrypt, subtract modulo 100 using the number stream off your OTP.

90 02 14 83 09 43 66 05 09 69 18 35 97 65 84 66 72 49 <- Ciphertext
32 91 10 71 07 31 61 95 01 59 11 24 95 55 81 59 66 39 <- OTP
07 11 04 12 02 12 05 10 08 10 07 11 02 10 03 10 06 10 <-Plaintext

Strip the leading zeroes, convert 10, 11, and 12 to 0, *, and # respectively, and translate your encoding.

07 11 04 12 02 12 05 10 08 10 07 11 02 10 03 10 06 10 <-As received.
7* 4# 2# 50 80 7* 20 30 60 ← Stripped/converted
PICKUPBEN <- The message.

Encrypted DTMF communications can even be simpler. If you were sending prearranged commands via DTMF signaling, maybe instructing the message recipient to enact any one of a number of contingency plans, a quick number sequence would suffice: 81 271. That's simpler than you think. The number 81 is an address indicating U1 or Unit 1. The second number 271 stands for CP1 or Contingency Plan 1. The sender just instructed Unit 1 to initiate Contingency Plan 1.

If you have an HT with DTMF capability you already have half of this system. You just need a DTMF decoder to complete it. An inquiry with your favorite search engine will find software that will enable you to decode DTMF tones with your PC's soundcard. Amazon and Ebay have assembled DTMF decoders and kits that are a little smaller than a pack of cigarettes. Most, if not all, of them use the standard 8870 DTMF decoder IC, and will have similar performance.