Back to Basics

From shopping for your first radio to putting up your first antenna, here is some tried and true advice.

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It's that confusing place where we've all been at one time or another. Advertisements and catalogs are spread in front of you. There's some money burning a hole in your pocket. You're about to invest in your first Amateur Radio station—and you don't know which way to go!

Forty years ago, when I entered the hobby, my choices were relatively limited. There were probably fewer ham equipment manufacturers and, as I remember, less variety. I certainly took the time to peruse the catalogs and ads, but most ham stations in those days started small, perhaps just a basic receiver, a two-tube transmitter and a wire dipole antenna. The bands were less crowded then, so you could count on making copious contacts with simple equipment.

Too Many Features?

I'm somewhat relieved that I'm not starting in the hobby today. Although there is more to do these days, there's also considerably more information to plow through. Making a purchase decision you can live with isn't easy—especially if you fall victim to "feature overload." Allow me to explain.

I have one 2-meter H-T that, for the life of me, I can't remember how to program. It has too many functions for my needs. I don't use it often enough to keep the logic of its programming current in my mind. I should have taken a hint before I bought it; a friend of mine had the same H-T and had to carry the instruction book at all times. My friend's experience should have told me something, but I couldn't resist. It was such a neat-looking radio.

I have another H-T that doesn't do nearly as much, but it does *what I want.* The buttons and programming logic make much more sense to me, so I end up using the simpler radio most of the time. I should probably sell the complicated rig but *it's such a neat-looking radio*!

What's the moral of this story? Overlooking the sanity question, don't buy more than you need, or think you'll need in the future. Resist the temptation to swoon over a nice exterior design or a laundry list of bells and whistles. Not all features are good features. At times they can be traps.

I once owned a cellular phone with way too many features. One day I managed to get it into the "locked" mode. That's the mode you use if you want to keep someone else from playing with your phone while you're not around. I never used the lock feature, so I didn't know how to *un*lock it. I didn't have the manual with me at the time, so the phone was useless. It couldn't have happened at a worse moment. It was a cold January night in northern Illinois and my car was acting up. (No, I didn't have my basic H-T.)

I recently saw a packet message from a poor fellow who was pleading for instructions on how to reprogram his H-T. He was on vacation, had neglected to bring along the manual and couldn't figure out how to reset the programming. No doubt he tried dozens of combinations, before sheepishly sending that packet bulletin. I didn't laugh when I read it. I knew exactly how he felt. Unfortunately, I couldn't help him. He had a *different* too-many-features-for-its-own-good H-T than mine!

Talk to Your Fellow Hams

Do your homework up front. Before you order a piece of equipment, talk to as many current owners as you can. Don't accept just one opinion. Try to get a number of opinions and decide from the total tally instead. I've found that most

hams are willing to share information on their experiences with different products. These personal experiences will often tell you more than a manu-facturer's brochure.

Dealing with Dealers

Let's suppose that you've decided to buy new gear for your first station. Look for a dealer you can trust to give you a fair market price, and who will help you with any questions you may have down the road. Make sure the dealer will accept returns within a reasonable period of time.

The dealer should be the interface between you and the equipment manufacturer for at least the original shakedown time of the warranty period. If you're lucky, you'll find a dealer who can also provide repair services.

If you expect reasonable treatment from a dealer, it pays to be reasonable yourself. Dealers operate on tight profit margins, so don't expect them to devote untold hours to your particular installation problems—especially if they aren't strictly equipment-related. No dealer can be expected to provide detailed design and troubleshooting information for your particular station. And they definitely do not make house calls!

And if you decide to return your purchase, don't be upset if the dealer charges a restocking fee. Put yourself in his shoes. By accepting your return, the dealer must take a loss and resell the gear as *used*—which is exactly what it is. The restocking fee helps him recover a little of his lost margin while he tries to keep you happy.

What About Used Equipment?

In my opinion (and remember, this is only one opinion!), you should avoid *large* investments in used equipment. The exception is when you can buy your gear from a reputable dealer who'll stand behind it for at least 60 days. Sometimes it takes that long for problems to show up. Besides, busy hams may not be able to fully test their purchases sooner than that.

If you're a whiz at fixing electronic circuitry, or have a commitment from a good friend who is, you're in a different category. There are plenty of used-equipment bargains out there if you're willing to take the gamble.

But for a beginner who may not have an in-depth knowledge of radio circuitry, buying expensive rigs at a hamfest, or from a private party with no guarantee, is risky at best. Hams have excellent reputations as honest peddlers of second-hand gear. Even so, there are exceptions to the rule. I've been told that something was working "just fine," only to discover that the seller was exaggerating quite a bit! Once I had to throw away a large item that I'd purchased at a hamfest. After trying to make it work, I discovered that it was damaged beyond the cost of fixing. I've also put in some very long hours repairing other *bargains.*

Some hams sell pristine gear because they need to raise money for one reason or another. If they're sufficiently desperate, a bargain may indeed be yours for the taking. But there are those other times when the items they're offering for sale may not be up to par. Even if a radio looks beautiful, the seller might "forget" to tell you that it's been through a flood, fire or lightning strike.

Many of the items that I've bought at hamfests were working, after a fashion, but didn't meet their original specifications. I suppose you could say the radios were "just fine" as far as the seller is concerned. "Just fine" is a pretty relative term, isn't it?

High On Antennas

After you've probed your fellow hams for advice on the equipment you'll need *inside*, the conversation usually shifts to what you'll need *outside*—the antenna, of course! That's good, because talking to as many people as possible will help clear away some of the dust you raised by furiously leafing through all the antenna catalogs!

Antenna decisions are formidable, even for experienced hams. There really is no *best* antenna for every situation. Reading through a couple of ARRL antenna publications is a good start, though much of what you'll read is more than you need to know at the moment (later on in your ham career, this might not be true). Try to determine your operating needs as far as frequency coverage is concerned. Then, take a good look at your available space and see what will fit.

A Basic HF Antenna

For a simple, multiband HF antenna, it's hard to beat a wire dipole. Simply make it as long as possible, feed it in the center with 450-Ω *ladder line*, buy an *antenna tuner* with a balanced output and you're in business (see Figure 1). You can make this antenna yourself, or buy it premade if you're short on time. A 130-foot dipole of this type should be usable on almost every HF band. Shorter versions will also work, but you may not be able to load them on every band.

Ladder line, by the way, earns its moniker because it resembles a ladder in appearance. (Some hams call it "window" line, which is a more accurate description.) I recommend it for this simple dipole because it has very low loss at HF, even when the SWR is moderately high. This advantage allows you to use the antenna for each band regardless of the matching conditions—as long as you have a decent antenna tuner.

What most hams and ham manufacturers call an *antenna tuner* is really an *antenna matching network.* It doesn't tune the antenna in the literal sense. Instead, it matches your 52-Ω radio to your antenna system, which may be at an impedance considerably different than 52 Ω.

Try to install the dipole as high as possible. If a horizontal dipole is too close to the ground, most of your signal will be going skyward at a steep angle. Without wading chest deep into propagation analysis, the bottom line is that a high radiation angle is generally not good for long-distance communication. Don't lose too much sleep over your antenna heights, however. Raise the antenna as high as you can and change the subject when you're asked about it. You'll still make lots of contacts.

No doubt you've been impressed by the tall towers and glittering aluminum that makes up some HF antenna systems. Although they're terrific performers, you don't need these expensive antenna farms to get on the air. Start simple and dream of greater things to come. You'll be happier in the long run.

After you get on the air with your basic HF antenna, you'll get plenty of recommendations for the ideal antenna for your "dream station." You'll find that hams are keen on antennas, each having their own favorites. The topic of antennas is always a great ice breaker at the beginning of a conversation. Just ask, "What's your favorite HF antenna and why?" Then stand back!

What About VHF/UHF Antennas?

If you intend to put up a VHF or UHF antenna, you'll find that the choices are much easier. Again, try to decide how many bands you'd like to cover, then look in the catalogs or talk to other hams. If you're only interested in FM voice or packet, you'll be looking for a *vertically polarized* antenna, from a simple 1/4-wavelength ground plane to a multiband model. You have your choice of omnidirectional antennas (good for all directions), or various *beam* designs, which focus your signal in a particular direction. However, an effective beam antenna also requires an antenna rotator. That means extra cost and complication.

If you're setting your sights on SSB or CW operation, invest in a *horizontally* polarized antenna. Beams are the rule here—the bigger the better.

VHF/UHF antennas are pretty straightforward to install. They're normally lightweight, which means you can get by with heavy-duty TV antenna mounting hardware for the installation. Get the antenna as high as you safely can, and feed it with low-loss coaxial cable. Don't forget to follow the safety information that always accompanies new antennas. Enlist the aid of an experienced ham when it's time to do the installation. A veteran ham can give you many time- and headache-saving tips, in addition to providing an extra pair of hands.

Some Final Thoughts

There's much more to learn, of course, but that will come in due time. Getting a basic station up and running is your first priority.

You can make lots of worthwhile contacts now and take your time learning and planning your next moves. If you

follow some of the tips I've outlined, and seek input from others, you'll be well on your way to earning your Old Timers award. That's right—someday *you'll* be the veteran lending a helping hand. That's the way it works in Amateur Radio!

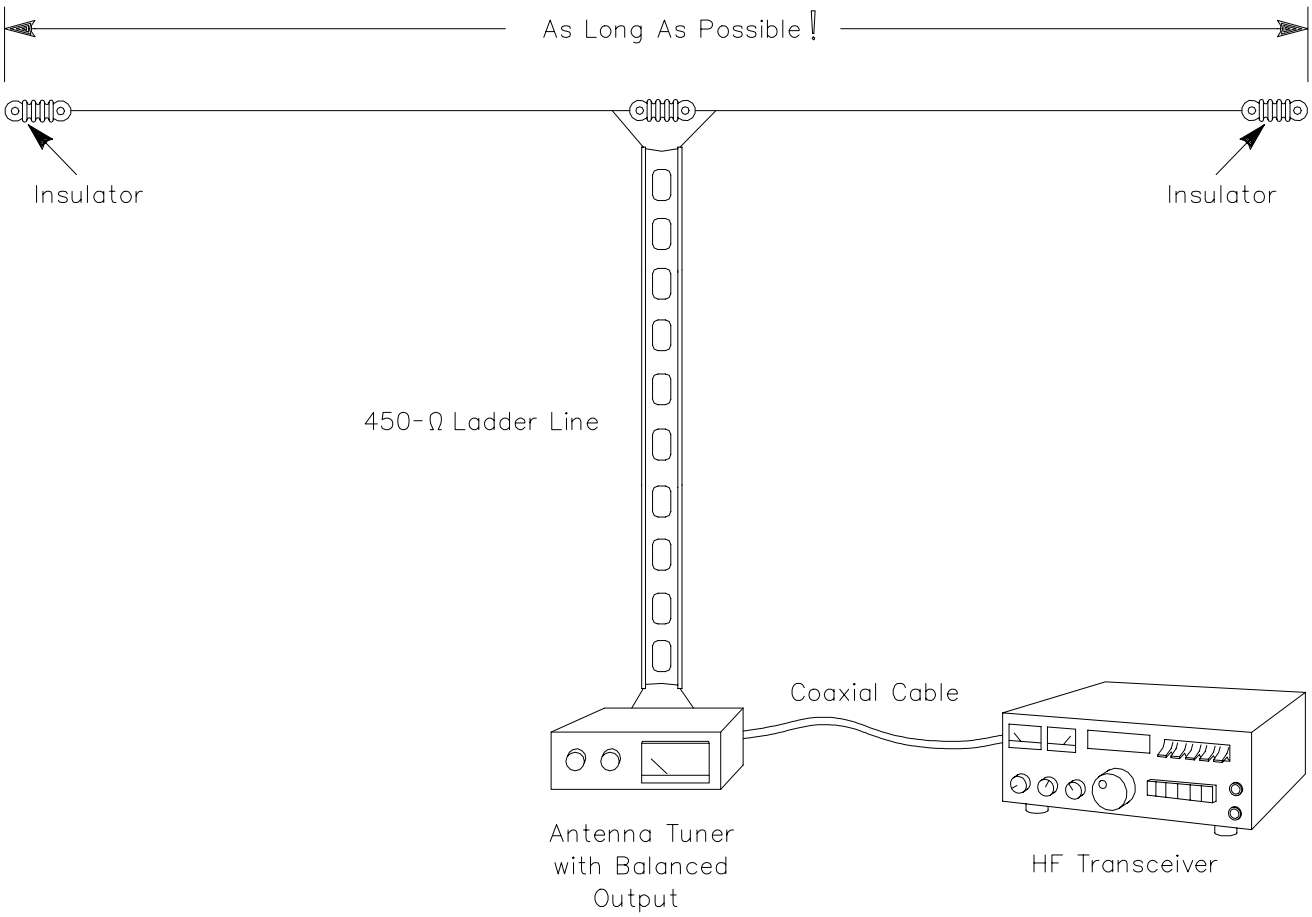

Figure 1—Cut a long length of multistranded copper wire into two equal pieces. Attach the pieces to each end of a plastic or ceramic insulator and place two more insulators at the two ends. Attach 450-Ω ladder line at the center and run it back to your antenna tuner. Secure ropes to both ends and raise the antenna as high as you can. You now have a dipole antenna that you can use on several HF bands.