

GETTING STARTED IN MW DXING

By Leonard Hyde

PART 1: WHAT RECEIVER TO BUY?

Many a new DXer is confounded by this question. Unfortunately, the wrong receiver is sometimes bought, and a lot more money is spent than need be. High cost does not guarantee high quality. A superb shortwave receiver may be seriously deficient on the broadcast band. We will not attempt to rate receivers here, merely to provide some basic guidelines.

First, the DXer must consider his needs. Will he DX the BCB exclusively? Or, does he enjoy shortwave listening as well? What about longwave? Does he plan to DX domestics only, or does he want to hear foreign MW stations? If so, he will need sharper selectivity.

PORTABLES:

There are several excellent general coverage portables on the market, such as the Sony ICF-2010, and the Sangean ATS-803 (DX-440.) The Sony is considered the class of the field, and retails for over \$300. The Sangean lacks some of the Sony's features, but retails for about half the cost. At least one performance test has found it to be the Sony's equal, at least on MW. (Note 1.) Both receivers have digital readout, and are available at this date (mid 1993.)

Many other portables are available, some full coverage, some not. Some have digital readout, some don't. Some of the Sony portables are good: at least one was labeled "a big disappointment" by a major DXing annual. Before buying any receiver, find out about it. One way to find out is to read performance evaluations. Another good way is to ask about it in the pages of DX Monitor. There will surely be someone in the club who knows something about the receiver you are thinking about.

Most of these radios have adequate sensitivity for DXing, and a fair amount of selectivity. However, they do not have adequate selectivity for DXing foreign stations unless the signals are strong. Stations outside the Western Hemisphere are assigned every 9 kHz rather than 10. Thus, you will find many of them between our 10 kHz channels, which gives you an excellent chance to hear them. You won't hear them, however, without good selectivity. A 4 kHz mechanical or crystal filter is a must: a 2 kHz (or sharper) one is sometimes needed. You won't find such filters on portable receivers.

As far as non digital portables are concerned, one rule applies: "caveat emptor." Many of these are cheap foreign products that will only frustrate and disappoint you. Most have poor sensitivity, inaccurate dial readout and are cheaply made. Test it before buying it. If it picks up only local stations, the dial is hard to tune or read, it whistles and howls, or the station comes in at a different place each time you turn the dial, forget it. Save your money until you can afford something better.

For years, the best non digital portable was the GE Superadio (I and II.) These were excellent receivers, with tremendous sensitivity. The price was below \$100. It remains a best buy for the beginning MW DXer.

However, don't look for one in a retail store: they have been discontinued in favor of the Superadio III. All reports to date on THIS receiver have been highly disturbing. If you want a Superadio, look for a used one in good condition.

COMMUNICATIONS RECEIVERS:

Here, the same rules apply: high cost does not always mean high quality. A number of otherwise excellent communications receivers do not perform well on MW. Some are plagued with noise from the digital readout. Here especially, use the club for input: performance tests often do not take MW into account.

It is probably better for the beginning DXer to start with something other than a top of the line communications receiver. Why pay a grand or more for a radio you may tire of eventually? Get started on a portable or a used

receiver. After you have DXed for awhile, you will know whether you are going to stick to it or not. You will also know a lot more about receivers, and which one you want to spend your hard earned money on.

USED RECEIVERS:

Here is the best choice for a beginner. Many receivers made since WW II are excellent for MW DXing. These include portables, table radios, ham gear, and military surplus.

As before, test before buying. Some table radios, even the multi band units so popular in the 40s and 50s, lack an RF amplifier. The result: poor sensitivity, image, and cross modulation problems. A BCB receiver with an RF amp should receive many weak stations as you tune across the band. If it picks up only locals, forget it. First, though, check the back of the set to make sure it does not require an external antenna. If so, attach a length of wire (6 feet or so) and try again.

Older communications receivers can be an excellent buy for the beginning DXer. Products by manufacturers like Drake, Hammarlund, Collins and Hallicrafters were well built, and many in good working order are still around. You may find these at hamfests, or for sale by other DXers. Be careful: a lot of old equipment has been modified. Also, the ham community is being swept by a huge nostalgia boom for tube equipment. The old Super Pro that some ham wanted to unload for 20 bucks a few years ago may fetch a few hundred dollars now. If you listen to hams, you will surely hear somebody talking on a tube rig, bragging that he just spent \$300 getting it up and running again.

Military surplus gear is often good, and cost efficient. However, it is probably best for the beginner to stay away from it. Most of it requires modification. Many surplus sets have odd power requirements. It may need repair and alignment. Use your judgment. If another DXer wants to sell you a piece of military gear that has been fixed up already, you may be OK.

The R-390A and the R-392 military radios are excellent for MW DXing. However, you will pay in the \$200-300 range, you can't carry either one around, and you'll have a time selling it if you decide that MW DXing is not for you. For the same price, you could have a good digital portable, and none of the above problems.

CAR RADIOS:

Here is an excellent way for the cost conscious DXer to get started. The author has used a car radio for most of his life. All you need is a speaker, a 12 volt DC supply, and an antenna. As far as which set to choose, see note 2 below. (To Be Continued.)

NOTES:

1. "Realistic DX-440 vs. Sony ICF 2010 (A Medium Wave Dx Evaluation)" - By Mark Connelly - DX Monitor Volume 29, # 16. (January 4, 1992)
2. "Use of Auto Radios For DXing" - by the author - DX Monitor Volume 30, # 18. (January 16, 1993)

PART 2: ANTENNAS:

If you bought the best radio money can buy, you would not get much out of it without a good antenna. Fortunately, hundreds of feet of wire are no longer necessary. All modern radios suitable for MW DXing will perform up to their capabilities with a 50 to 75 foot wire antenna.

The wire antenna will work well over the radio's entire tuning range. However, for optimum results on MW, a directional antenna is needed.

This is because the BCB channels are increasingly crowded. You know this by listening to the radio at night. Some channels are just a jumble of many stations all trying to come in at once.

If you have a directional antenna, you can rotate it to null out some of these interfering stations. This improves your chances of hearing a real DX station.

An air core box loop gives excellent results on MW, and you can make it yourself. Many plans are available. Also available are amplified ferrite bar antennas, active whips, and multi antenna systems for phasing of unwanted stations.

If you have a digital portable, some new constraints come into the picture. First, you should never directly couple an untuned longwire antenna to the radio's antenna jack. These radios lack a tuned circuit network between the antenna and RF amplifier. Thus, you will get spurs and mixing products: that is, stations on frequencies other than that to which they are assigned. Use an antenna tuner. These are easy to construct, and many plans exist. Commercial units are also available.

Second, if you use the radio's built in ferrite bar antenna, it is unlikely that you will hear anything that can be classified as DX. The same reason as before: lack of a tuned circuit network to peak the antenna at the received frequency.

The cure: either use an outboard antenna of any type described earlier, or use a piggyback loop.

This is a simple affair, and can be easily made by anyone. It consists of a ferrite bar antenna, and a tuning capacitor, mounted in a plastic box. There is no direct connection to the set. The antenna is inductively coupled by securing it to the back of the receiver, near the built in ferrite bar antenna.

The antenna works in two ways: 1) it provides a signal strength gain by increasing the aperture of the antenna system, and 2) it peaks the receiver's built in antenna at the desired frequency.

To demonstrate the effect, tune your portable to a frequency where there is a weak, hard to read station coming in. Now, put any inexpensive dial type AM radio next to yours, back to back. Tune the other radio to the received frequency on your portable. Where did all that signal come from? Well, it was there all the time, but your portable's antenna was not peaked at that frequency.

The active whip antenna may be used on MW, but is non directional. It is best used as a component in a phasing system of some sort.

What is a phasing system? Simply, signals from two dissimilar antennas are combined. The amplitude of the signal to be phased out is carefully adjusted so that it is at the same level from both antennas. If the two signals are

180 degrees opposed to one another (out of phase) they will cancel out, and we will hear any station that was previously covered up. The same principle is being experimented with to build silent, mufflerless cars. Engine sounds are sampled, reproduced at equal volume, 180 degrees out of phase, and the exhaust sounds are almost completely cancelled.

If you ever hooked up one of your stereo speakers backwards, and noticed that it no longer "sounds good," you have connected the speakers out of phase. Thus, some sounds from the speakers are phasing or cancelling each other.

Why do the antennas have to be dissimilar? If they were identical, you would cancel or phase every signal on the frequency, since they would all match. When the antennas are dissimilar, and adjusted to phase the strongest signal on the channel, the other received signals will be at different levels and polarities, and will not phase or cancel one another.

Phasing systems range from simple to complex, and are a home build item at the present time. See the IRCA Reprint list for articles and plans.

PART 3: HOW TO START DXING:

You have your receiver and antenna. You have been playing around with them, but you seem to get the same stations all the time. Just what IS this thing called DXing, you wonder? How do I do it, and how do I recognize a DX station, if and when I hear it?

Books have been written on the subject, and you are strongly encouraged to read some of them. However, here are a few guidelines.

To define DX: the old definition was "distant." On today's crowded band, that must be modified. Distance is relative. Hearing WBAP on 820, no matter how far it is from you, is probably not true DX: nearly everyone in the continental US can hear it. However, on 1240 kHz, a crowded 'graveyard' channel filled with 1000 watt locals, a station 100 miles away is distant.

Perhaps a better definition is "hard to hear." Now, a station 150 miles away is a DX station, if you rarely hear it. Tennessee is a neighboring state for me, but it's full of low power radio stations I have yet to hear. When I hear one, it's DX for me. When I hear it for the tenth time, it's no longer

The first thing to be considered is band conditions. When they are bad, you are not going to hear any DX. Many scenarios comprise 'bad cx,' as DXers say. Some nights are noisy, with lots of hiss and static crashes. Bad cx.

At other times, the ether seems milky or murky. Stations are subdued in strength, and fady. Bad cx again.

The best nights to DX? When the powerful clears fade to reveal a station underneath, that's good cx. You will often be able to null the clear, and pull out the subdominant station for a good catch. When I can null WBT-1110-NC to hear CKTY-ON, I know it's a good night, and I'll do a lot of DXing.

A powerful tool for the DXer are the hourly HWY propagation forecasts, at 18 minutes past each hour. There are two specific forecasts that signal good cx for the MW DXer:

1) High solar flux, low A, low K. Geomagnetic field quiet. This doesn't happen very often, since the high solar activity usually triggers adverse geomagnetic conditions. When it does happen, it signals excellent cx. The high solar activity will cause changes in the ionosphere. Signals will drop in and out. These are the nights when the powerful clears may fade momentarily, and allow you to hear something underneath. On such nights, the regionals and graves will support momentary reception of individual signals, as the patches of ionosphere that reflect each one "switch" in and out. These channels will provide excellent chances for DX reception.

If the solar activity goes extremely high, there may be an aurora. This is a much anticipated event. An aurora wipes out signals from the northerly latitudes. A listener in mid America will find the channels usually dominated by clears now populated by Spanish stations from Central and South America. This is an excellent opportunity to DX crowded channels, as many of the usual competing signals may be subdued or wiped out altogether.

2) Low solar flux, low A, low K. Geomagnetic field quiet. Here is the steady, rock solid band cx that will allow extremely long distance reception on MW. The atmosphere will be quiet. The powerful clears will be strong, but nulling may allow you to hear some good DX. This is the night to use all your system's gain to advantage.

Primetime for DX is not always at night. Sunrise and sunset are times when the ionosphere is changing, and cx may change from minute to minute. Also, stations are signing off and on now: this makes for an intriguing situation. The general concept that sunset is for Easterners and sunrise is for Westerners is not entirely true. I have lived on both sides, and used both periods to advantage in either place.

"Radio" sunset is marked by the beginning of skip. When skip begins depends on the season. In summer, skip may not begin until virtual sunset is imminent. During the winter, skip is often present by mid afternoon.

Skip begins at short distances. To illustrate this, I'll describe a typical mid winter afternoon here in SW Virginia.

Mid afternoon: short skip begins, marked by a distinct increase in strength of hard to hear regional stations. For example, WH00-1370 in Martinsville VA is a tough log here at mid day. When skip begins, it comes up to readable levels.

At the same time, WRVA-1140 in Richmond comes up over the station in St. Paul VA.

As afternoon progresses, I begin to hear stations to the north and south at greater distances. Now, WWC5-540 in Canonsburg PA can be heard with WRIC-VA nulled. Soon, I will be hearing SC and FL, as well as NY, PA, and some Canadians.

As the sun nears the horizon, the skip zone shifts west, bringing GA, TN, KY and OH in.

Around local sunset I get an opening to AL, MS and LA. This lasts for 15-25 minutes. This is an especially productive period. Daytime stations in the Eastern time zone sign off, while others reduce their power, leaving the channels open for Central Time Zone stations.

As dark falls, the big clear channel stations to my north and west begin to take over. Sunset is over, and night cx are in place.

Sunrise is a different story. It is not just a reversal of sunset. For one thing, stations sign on every 15 minutes through the period. These sign ons are often easily heard. Many stations must operate with reduced power during these 'critical hours,' and the possibility exists for some good DX.

Different stations are heard during sunrise. WWJZ-640-NJ is NEVER heard here at sunset, but is a regular visitor every morning. (This was written

before it became silent, hi.) I hear more regional stations from VA, KY and TN at sunrise.

Powerful stations from the west may ride in a good while after local sunrise, after they have increased power and changed to their day pattern. KFAB-1110-NE is an example. It often rolls in here after sunrise, putting WBT down in the 'muck' until true daytime cx take over.

When I was out West, sunset was a good time to catch stations to the north and south. Living in N. CA, this was prime time for WA, OR, and S. CA stations on the regional channels.

Of course, sunrise in the west is the time to hear the Eastern stations after they have changed power and pattern.

To DX effectively, one must have a plan of attack. This is called 'targeting' and has been described in a prior article. (Note 3.) Simply tuning around the band to see what you can hear works at first, but soon gives out as the new DXer exhausts most of the possibilities using this method.

PART 4: KEEPING A LOG:

Every DXer should faithfully keep a log. This is your record of what you have heard. For years out West, I failed to keep one. I remember stations I heard, but I have no record of them. I regret this deeply now, but it's too late to change it.

A log may be simple or complex. This is up to the DXer. Many keep a log of every station they hear. Others log only new stations. Some DXers who have heard thousands of stations no longer keep heard logs, only 'veried': that is, stations that have sent them QSLs in exchange for reception reports.

A growing number of DXers keep taped logs. Thus, you have your log and verie all in one. With the return rate for veries decreasing, this may be the wave of the future in verifying.

There are many different ways to approach log keeping. I'll describe mine. This does not make my way right, or your way wrong: it's just an example.

I keep a heard log in pencil in a spiral notebook. Each DXing session begins with a page heading containing the following: date, time, location, system in use. Since I am researching the effect of local weather conditions and atmospheric conditions on reception, I include a short summary of local weather cx. (i.e. clear, warm; cold, snow on ground, etc.)

Every new station is logged. The time is entered, and a short description of what I heard. IDs and slogans are noted. These will help me ID the station the next time I hear it, and are useful for reporting to the club's DXR columns.

I also log anything out of the ordinary. A normally heard station is stronger, weaker, or absent. Many stations from a certain geographical location may be heard on certain nights that are not normally there. Why?

I also keep a cumulative heard log. At first, I used pencil. Then came the typewriter. Now, I use the computer and printer. This has been discussed and described in some detail in past DX Techniques columns.

Whatever system you devise, stick to it. This is a record of your accomplishments as a DXer. It will be something you will look back upon with fondness and a sense of pride in years to come.

PART 5: BEING A GOOD CLUB MEMBER:

You belong to a radio club: the International Radio Club of America. You may have just joined, or perhaps you've been a member for many years.

It seems many members consider themselves as subscribers to a newsletter. That is fine: nothing wrong with it. There is no requirement that members take an active part in club matters.

However, let me assure you: the amount of enjoyment one derives from anything is proportional to the amount of effort one expends. This is especially true when it comes to being a part of your club.

How does one take part in club activities? There are many ways.

Every two years, IRCA holds a general election, in which officers are elected, from the President to members of the Board of Directors. Any member in good standing is allowed to vote. In addition, there are occasionally other matters in which members are sent a ballot, and asked to vote on.

Other clubs who are not so liberal. In some, members have little, if any, voice or say in matters of club government. In others, voting privileges are extended only to those who take an active part.

You'd think that everyone would exercise this right and privilege. Not so. Usually, the turnout is about 30-40% of the membership.

Another way to take part is through the club's newsletter, DX Monitor. There are a number of columns you may contribute to. If you live in the continental US or Canada, you have a DX Roundup column needing your input. This is where you report your latest catches for others to read. The editor wants you to contribute often: do you?

In the Forums, members can rag chew about their latest hobby related happenings. Does the membership know who you are, what you enjoy, and what you are doing, or is your name just a line on the membership list to them?

There are columns for foreign loggings. There is the Technical Column, Hearing It Through The Grapevine, DX Techniques, Verification Signers, and DX Records. In short, there is something for nearly everybody.

These columns depend on member support. If there is none, the columns do not appear. If the columns fail to appear, soon there is no DX Monitor, and soon, no club.

Thankfully, there are regular reporters who keep these columns going. Ideally, everyone in the club would occasionally contribute something here or there. This makes for a more informative bulletin, and a more enjoyable club experience for all involved.

So, ask yourself: when was the last time I sent something in to the club bulletin?